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***Trends and Challenges  
toward Asian Economic Community***

**PROCEEDING**

**December 5<sup>th</sup>, 2015**

**Auditorium  
Prof. Slamet Dajono  
Gedung D1 Lt.3 FMIPA**

Kampus Unesa Ketintang  
Jl. Ketintang, Surabaya  
Jawa Timur 60231

<http://icerd.unesa.ac.id>



**ICERD** 2015  
International Conference  
on Educational Research  
and Development



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## Preface

Dear all ICERD participants, welcome to Surabaya, Indonesia. Welcome also to Universitas Negeri Surabaya. We are very glad to have you all, to participate in this conference.

In celebrating its 51st anniversary, The State University of Surabaya/Universitas Negeri Surabaya, proudly presents "The 2015 Internasional Conference on Educational Research and Development". The conference is conducted to bring together diversified ideas of researchers, educators, lecturers, teachers, students, and those who have interests in research on education and its development as well as on science and technology.

We are very honored to have Prof. Dr. Muhammad Nuh, DEA (former Republic of Indonesia Minister of Education and Culture, 2009 – 2014), Prof. Dr. Muchlas Samani (Universitas Negeri Surabaya, Indonesia), Prof. Dr. Fou-Lai Lin (National Taiwan Normal University), Prof. Dr. Bill Atweh (Adjunct Professor of Curtin University, Australia, and visiting Professor at Philippines Normal University), and Prof. Dato' Abdul Rahman B. Abdul Aziz, Ph.D (Universiti Utara Malaysia), and Dr. Zeny Reyes (Philippines Normal University) as keynote and plenary speakers.

To all our sponsors for this conference, Bank Tabungan Negara (Universitas Negeri Surabaya branch) and Telkom Divre 5 Surabaya, our thanks are also for you.

On behalf of the Organizing Committee and Steering Committee, I wish you all a blessed and productive time in our ICERD conference. God bless you all.

December 1, 2015  
Surabaya

Arie Wardhono

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# The Development of Biology Learning Material based on Metacognitive Strategy to Empower Student in Attention

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## ABSTRACT

The aims of this research are to develop and implement biology learning materials based on metacognitive strategy. Metacognitive learning strategy is the process of thinking student activity using the groove itself so that it will learn how to think to learn, correcting himself, and knowing the best learning strategy for learning. The learning material were develop by using 4-D model. This research involved two classes: X-1 and X -2 of SMAN 1 Driyorejo, and students as the subjects of this research. Documentation, validating, observing, and giving questionnaire were implemented to collect variety information during implementation of the learning materials. The findings of this my research showed that the learning material are valid, practical, and effective in empowering students both in attention and learning outcomes. There were several obstacles occurred during the implementation of the learning materials. Students were confused of new task and the strategy, centering attention on short time and smoth on many objects yet. Alternative solution were given by providing guidance and information to students about learning using metacognitive strategy, so that students are expected to be easier to follow the learning, and drilling reflective thinking skill, minimalizing annoyance, using certain signal and media, and connecting learning material with real living student, so that learning is attractive.

**Key Words:** *biology learning material, metacognitive, attention*

## Introduction

Undang-Undang Tentang Sistem Pendidikan Nasional No. 20 Tahun 2003 Bab 2 Pasal 3 mandates competent people and character. One of the efforts to realize the functions and objectives of the national education system in the form of education through curriculum renewal in 2013. Happening renewal is that increasingly emphasizes learning to student-centered learning (student centered) and character education. Characteristic of learning curriculum in 2013 provides an opportunity for learners to develop his or her potential in a fun learning environment and in accordance with his ability to have the desired quality of the academic community and nation (Kemendikbud, 2013).

Academic quality is influenced by several factors (Kuh, et al. 2006), one of which is the concentration of focus (attention) students during the learning process takes place (Anasrullah, 2006). This factor is an indicator of the students' motivation, because with high motivation will encourage students perform a variety of ways to achieve its goals (Uno, 2011). Attention will be maintained when a student learning atmosphere pleasant, well do not get physical and non-physical stress (Anasrullah, 2006). Leisure gives the opportunity for students to develop cognitive function, in terms of the ability of perception, attention, memory, thinking, and solve a problem (Santrock, 2011).

Based on the observation researcher at SMAN 1 Driyorejo (November-December 2014), the class X still has a low attention. This is evident from the lack of curiosity of students to the learning process, works with a group of students who speak so that the class be not conducive to learning, there were asleep in class and often permits out of the classroom at the time PBM progress.

Focusing attention to learning Biology students in line with the learning undertaken by teachers. Results of observation (November-December 2014) shows that the learning of Biology less encouraging students to develop thinking skills properly. This can be seen by the teacher teaching methods are lectures and memorization, students are not encouraged to think how to obtain a biological concept, and strategizing a plan to solve the problem to achieve a job well done.

Biology is the branch of science that examines knowledge of living beings and the environment, emphasizing mastery involves the collection of knowledge discovery process through scientific method. Ecosystem is one of the biological material. This material generally has been delivered since high school, but learning to do still rote and less developed the ability to think (Rustaman, 1997).

Results research of Paidi (2009) states that students' ability to think biology is still low and most of the students it is difficult to understand the environmental problems in the ecosystem so requires an understanding of matter, mind reflective, critical, and analytical in solving complex problems. The above reasons is reinforced by the results of preliminary tests that show the reflective thinking skills students are less trained to analyze problems, evaluate, motivate, get deep meaning, using appropriate learning strategies in solving problems.

Not focusing attention of students resulted information in the form of external stimuli received by the register sensing (senses) will quickly disappear. Two important implications of the existence of the register sensing in education: (1) one must pay attention to the information if the information is to be remembered; (2) a person needs time to bring all the information that is sensed in a short time into the consciousness (Miller, 2011). The information note will be perceived and recorded by the register sensing. Perceptions of information makes the brain will be thinking process information and put it into short-term memory (Miller, 2011). Therefore, focusing attention in the process of obtaining concept is very important.

Lack of sufficient attention SMAN 1 Driyorejo require approaches. One of the approaches that can practice attention is the metacognitive approach. This is because the metacognitive approach make students aware of their cognitive abilities so that they can choose a specific cognitive strategies for constructing knowledge with the inclusion of metacognitive activity.

Used metacognitive activity includes planning, monitoring, regulation, and evaluation to student learning activities. Eggen and Kauchak (1996) and Corebima (2006) suggested one of benefit metacognitive skills that it can help students become self-regulated learner in achieving the task. Learning objectives will be achieved if students are able to think about the thought process that has, identify good learning strategies and their attention to learn consciously (Ho and Kelly, 2010).

Based on the background of the problems that occurred, the researchers intend to develop a learning material that is expected to practice attention of students.

## **Method**

The developed learning material include: 1) Lesson Plan (RPP); 2) Understanding Self-Assessment Form (LPPD); 3) Textbook for Student (BAS); 4) Assessment of learning outcomes instrument. The learning materials was develop used 4-D model (Thiagarajan and Semmel, 1974). Definition and design stage was conducted in September to February in Post Graduate Science Education, Unesa. The development stage through trial was conducted in class X-1 and X-2 SMAN 1 Gresik Driyorejo, semester 2014/2015. Research subjects were 72 students of class X-I and X-2.

The variables associated with this study were: 1) the learning material based on metacognitive; 2) the validity of the learning material; 3) the practicality of learning materials, include: a) implementation of Lesson Plan, b) the activities of the students; and 4) the effectiveness of the learning material, include: a) an increase of learning outcomes, b) completeness attention of students, and c) students response. The



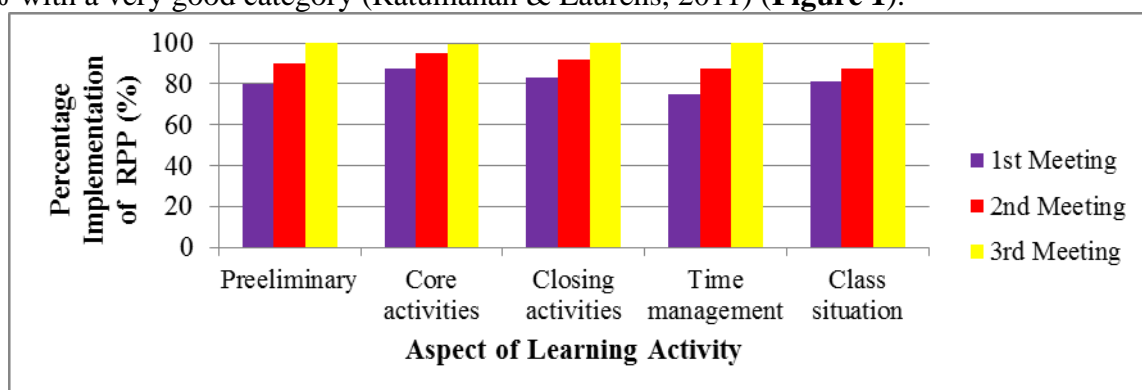
research instrument that was used is the validation sheet, RPP implementation of the observation sheet, student activity observation sheet, student attitude observation sheet, questionnaire attention, and the student questionnaire responses. Documentation, validating, observing, and giving questionnaire were implemented to collect variety information during implementation of the learning materials. Data were analyzed using descriptive quantitative and qualitative.

## Result And Discussion

Results of the validation of developed learning material, include: 1) Lesson Plan (RPP) got score 3.61 (the category of very valid); 2) Understanding Self-Assessment Form (LPPD) got score 3.64 (the category of very valid); 3) Textbook for Student (BAS) got score 3.54 (the category of very valid); 4) Assessment of learning outcomes instrument, such as: the knowledge test instruments got score 3.9 (the category of very valid) and student attitude observation sheet got score 3.86 (the category of very valid). The results showed that the Lesson Plan, Understanding Self-Assessment form, Textbook for student, and learning outcomes assessment instruments were very valid to be used as a guide for students and teachers in the learning process after being revised based on advice of the validators.

The validity of a learning material in its development was based on some analysis, include: 1) analysis of the curriculum, which referred to: a) the core competencies, b) basic competence, c) indicators, and d) the formulation of learning objectives so was adjusted to the content of the curriculum in 2013; 2) The analysis of students examined the characteristics of students (such as age, level of maturity, ability, background of knowledge, and level of cognitive development of students), which was in accordance with the design and development of teaching materials; 3) analysis of the task and the concept of matter, which was based on the tasks that need to be done in the subject matter that must be understood by students and identify of the main concepts that have been taught and systematically arranged in the form of a concept map; 4) analysis of the objectives that want to be achieved, which referred to: metacognitive strategies for consideration in preparing lesson plans, Understanding Self-Assessment Form, Textbook student, instrument of learning outcomes so that reflect the characteristics of these learning material metacognitive.

Implementation of learning material was observed by two observers. Observations was conducted in three meetings, which was the implementation of 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Lesson Plans. There were three activities in the Lesson Plan, namely preliminary, core, and closure activities. Learning syntax based on STAD type of cooperative learning model with metacognitive strategies. All stages of existing activities in the Lesson Plan on trial were replicated in two classes, class X - 1 and X - 2. The stages was successfully carried out and the percentage of the overall feasibility of the two classes Lesson Plan is 91.25 % with a very good category (Ratumanan & Laurens, 2011) (**Figure 1**).



**Figure 1.** The overall results of implementation of lesson plan on trial in class X-1 and X-2

The high average score with excellent category was caused by all the learning stages implemented and some other things that supported, as follow: **First**, the teacher asked student into to pray to construct awareness and a sense of gratitude as a form of expression of admiration for the greatness of the God before learning began, attracted the attention of students with focuser, motivated students with

submission of authentic problems ecosystems, explained the purpose of learning. This indicated that teachers successfully guided students to prepare, focus, and actively participate in learning.

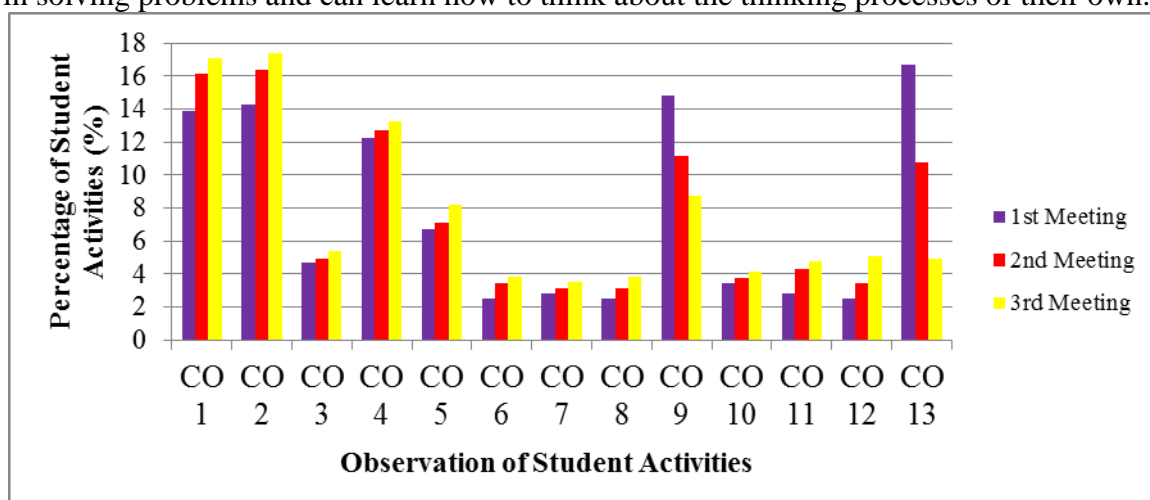
Motivation encourages and promotes students to imitate the model and attract the attention of students so that students feel that it is important to learn (Barakatu, 2007). This is in accordance with the invention of learning theory by Bruner. It suggests that students should learn through active participation in acquiring the experience of learning (Slavin, 2009).

**Second**, on the core activity, teachers can carry out the phases of metacognitive-based learning, as students work Understanding Self-Assessment Form independently, which serves to determine the level of confidence, then students working on Understanding Self-Assessment Form, cooperatively in order to compare the prior concept to a new concept obtained from the discussions student books, presentivly the results of focus group discussions in class, making inferences, carrying out self-assessment.

**Third**, the teacher guide to summarize the learning materials. Students posed an opinions about the concept acquired and teachers facilitated and mediate in order to create networks of knowledge appropriating learning objectives. In this way it could help students to put the new acquired concepts into long-term memory. Nur (2005) stated that the way to save the concepts in the long-term memory to using repetition or coding.

**Fourth**, the teacher could manage time well. This indicats that it occured significant increase of the aspect of the classroom condition aspect during learning in accordance with the used lesson plan. It was confirmed from the results of direct observation during the implementation of learning and student questionnaire responses that students was happy because they fell more actively for obtaining a meaningful concept. Dewey described learning as an active individual process, not something done for someone, but something that was done by someone and considers that the experience and investigations are essential in meaningful learning (In'am, 2012; Martinez, 2006).

The observation result of student activities in the pilot project employing two classes, class X-1 and X-2 (**Figure 2**) explained that the activity of listening/paying attention to the teacher explanations/other students, working Understanding Self-Assessment Form, reading Understanding Self-Assessment Form or teaching materials, discussing task, making notes, making report the results of the study, presenting the results of the group, conveying ideas or opinions, answering and responding questions, reflection, and summarizes the learning materials consistently increased each meeting. In'am (2012) and Susantini (2009a) state that metacognitive learning strategies is used by teachers are able to force students to be more active during learning activities, students are taught to ask themselves, instilling the basic of scientific thinking on students so that in this learning process students are more active in solving problems and can learn how to think about the thinking processes of their own.



**Figure 2. The observation of student activity on trial in class X-1 and X-2 overall**

**Description:**

CO 1: Listening/paying attention to the teacher explanation/other students; CO 2: Working in Understanding Self-Assessment Form; CO 3: Reading Understanding Self-Assessment Form /teaching materials; CO 4: Discussing the task; CO 5: Taking notes ; CO 6: Making a report of the result of research; CO 7: Presenting the results of the group; CO 8: Posing an idea/opinion; CO 9: Asking; CO 10: Answering and responding questions; CO 11: Self Reflection; CO 12: Summarizing learning materials; CO 13: Behavior that is not relevant to the teaching-learning process. (CO: Category Observations)

Increasing activity of students each meeting shows that students in learning activities were in the social environment. They continually learned through interaction with others around them. Vigotsky found the development of life process depends on interaction and social learning and contributing to the cognitive development (Erskine, 2009). The activities of students using metacognitive strategies were increasing in three prominent activities, such as: 1) listening/paying attention about explanations teacher/other students; 2) working Understanding Self-Assessment Form; 3) discussing the task. In discussing task, students performed experiments and observations, link the results of experimental data and observations with concepts/theories from several sources, answering questions on Understanding Self-Assessment Form, and creating chart design of food chain.

Student during discussing task were conditioned to feel challenged and motivated to solve existing problems in Understanding Self-Assessment Form. Biggs *et. al* (1997) suggest Understanding Self-Assessment Form can trigger the students' prior knowledge, identify misconceptions, give students the opportunity to explore material. This condition can train students to be honest in their work, aware to the error theirself, and express opinions.

Making reports activity, presenting the results of the group discussion, and expressing their opinion increased. This was because the observer saw the dominant activity in learning processes based on metacognitive was discussing in the task to obtain the answer from question. The activities involving creating a research report, presenting the result of the group discussion, and expressing their opinion were timeless than after activities. The three activities were seen by observers in the short time, not too dominant. In accordance with Elsin (2010) and Flavel in Livingstone (1997) metacognitive strategies are sequential processes that are used to control cognitive activities and ensure that the cognitive objectives have been achieved. These processes consist of planning, monitoring, and setting as well as evaluating the results of cognitive activities.

Activity of asking teacher, finishing task; and performing activities that were not relevant from the first until the third meeting decreased significantly. The role of the teacher in this metacognitive learning became the facilitator and guided students who were still getting difficulties in the investigation and the completion of the task. Blakey and Spence (1990a and 1990b); Nelson (1992); Marzano (1988) stated in metacognitive based learning teacher is a facilitator in developing the students metacognition through learning activities, through helping and developing students in terms of implementing learning strategies, good habits, as well as metacognitive behavior.

Activities of working Understanding Self-Assessment Form then discussing the task indicate that metacognitive learning could stimulate students to optimize the minds of students to regulate themselves by doing the plan, directing, and evaluating on the hand book. Looking at the results of tests, students who were less active during the learning process to get a good achievement (B-, B, and B +). These findings indicated that the activity in metacognitive learning was relevant to students learning outcomes. Pilot project learning material development could consistently improve learning outcomes, especially knowledge aspects of student, with average n-gain of class X-1 and X-2 was 0.87 and 0.88 respectively categorized the high category (Hake, 1999) and the students met learning mastery requirement average scores were 96.94% for class X-1 and 95.56% for class X-2 (Gronlund & Linn, 1995).

The student learning mastery showed that students have mastered concepts that have been taught, including subchapters of definition, component, and the types of ecosystems; food chains and food webs; as well as the biogeochemical cycle and succession. Test for knowledge aspect contained 13 indicators of learning, which divided into 10 items for multiple choice questions and 15 questions in essay form the new Bloom's taxonomy (revised by Anderson & Krathwoll was used to level the questions objectives (C1 (remember) to C6 (create)). The questions were created based on learning that have been printed on Understanding Self-Assessment Form and discussed during the learning process. Understanding Self-Assessment Sheet contained important concepts learned in each subchapter that will be presented at the meeting.

Increasing n-gain and students learning mastery showed the pilot project of Biology learning material development based on metacognitive was effective to improve the mastery of content knowledge on the ecosystem material. The findings of this study confirmed the results of the study Yasir

(2013), Yuliani (2013), Indana (2009), and Nur (2005) which states learning using metacognitive strategy can increase students cognitive learning outcomes.

The findings of the study the test results not only improve learning outcomes aspects of knowledge, but also the attitude of the students attention. Attention students observed attitude is sustained attention and executive. Each indicator attention shown in **Table 1**.

**Table 1.** Indicator of attention (Santrock , 2011)

No	Attention Type	Indikator
1.	Continuous attention	a) Ability to maintain attention for a long time b) Focus on the activities being undertaken c) Be aware of the existence of other stimuli
2.	Executive attention	a) Planners good b) Allocate attention on a goal c) Pay attention to the progress of his duties d) Glad to challenge e) Not easily give up

Attitude attention of students , both sustained attention and executive observed during the learning process metacognitive strategies in the overall average in the class X - 1 and X- 2 respectively 84.95 % and 85.88 % during the three meetings with both categories (Kemendikbud , 2013). Results of an observational analysis of students' attitudes attention (**Table 2**) it can be seen that the attitude of the students had passed at any meeting or can be said to be progressing.

**Table 2.** Percentage of students' attitudes attention to each meeting of the observations

Class	Percentage of Attention Attitude Student (%)					
	Continous Attention			Executive Attention		
	TM 1	TM 2	TM 3	TM 1	TM 2	TM 3
X-1	71,53	84,72	97,92	75	81,25	92,36
X-2	75	87,5	98,61	75	84,72	96,53

**Description:**

TM 1: 1<sup>st</sup> Meeting; TM 2: 2<sup>nd</sup> Meeting; TM 3: 3<sup>rd</sup> Meeting

The first meeting the students have not been able to attention sustainable, with some students indicated that not paying attention to the teacher during the learning process, not focusing on the activities being carried out, sometimes talking to himself, and daydreaming in class. In addition, students have not been able to beratensi executive, the plan indicated several students have not learned well, easy to give up, cannot argue with accompanying data.

Given the circumstances of such students, teachers give students ways to improve attention. 1) Teachers attract students by saying "Claaaass !!! Are You In The Class? Are You Ready ??? ". Students responded with "Yeeees !!! Yes, We Are In The Class! Yes, We Are Ready !!! "; 2) repeated with emphasis something, write and emphasize important concepts on board, including five characteristics of a concept (the name, definition, types, examples, applications); 3) help students produce a signal or catch phrase when students need attention, such as practicing a presentation with the provisions of "Class-Yes, Teach-Ok, and Switch" (Maghfiroh, 2014; Teng, 2012) with a certain gesture; 4) to make the learning process interesting, by connecting the material to students' lives through practical, interpret the results obtained and the analogy with the values of life; and 5) students and teachers try to minimize disruption.

At the next meeting after the teacher provides guidance, students are getting used to focus attention (attention) for learning and maintain it. Aspects of attention that can be retained students may occur in addition to the efforts of students and teachers, there are also other supporting factors, namely the integration of metacognitive learning strategies to the attention of students.

Metacognitive strategies have learning steps are strongly associated with problem solving, thinking about the thinking processes of their own (sustained attention and executive) (Nelson, 1992; Marzano, 1988). With such a path, make students aware that incorporate new information into short-term memory required an effort to encourage students to activate prior knowledge and focus students' attention on specific learning materials, called attention (Nur, 2005).

Attention to concentrate and focus the mental resources needed to support awareness of monitoring the process of thinking itself. Metacognitive skills affect students' way of thinking that will indirectly affect cognitive learning results and the student's ability to keep the memory of things learned (Corebima et al, 2006). In the metacognitive approach to engage students actively attentive (Brown, 1987 and Claudia, 2000). This shows that metacognition can be said to be closely associated with the metacognitive, attention and information processing theory.

Completeness attention of students, both sustained continue and executive attention in class X-1 and X-2 in Table 2 are different. This is also supported by the results of questionnaire analysis attention of students. In terms of attention continuing students in class X-1 is only able to sustain attention in less too long and less wary of the presence of other stimuli that are still impaired in focusing the impact on students sometimes find it difficult, not knowing the contents of the information submitted materials and tired of learning. While the views of the executive attention X-1 shows the students can learn with a good plan, can allocate attention to a goal, can monitor the progress of his duties, but students still sometimes easily give up on a task that is challenging and difficult.

Sustained continue and executive attention class X-1 is not optimal learning based on observation and student questionnaire indicating class X-1 is actually able to concentrate. But the students have not been a high degree of concern and attention evenly centered on some object so that the students' attention is less focused. Lack of attention students lead students find it difficult to understand the material presented so that students feel bored and do things that are less relevant in KBM.

On the class X-2 of the continue attention students are able to maintain attention for a long time, able to focus on the activity that is being done, and to minimize disruption in attention deficit so that students can feel attracted to learning for knowing the information content of the material presented and the benefits and no difficulty, as well as bored. Viewed from the side of the executive attention shows students can learn with a good plan, can allocate attention to a goal, can monitor the progress of his duties, as well as students feel curiosity increased to perform challenging and difficult task.

Description continue and executive attention analysis of class X-2 at optimal learning based on student questionnaires indicating class X-2 is able to focus with high and focused. Focusing the attention of students lead students to feel motivated by concern interested in receiving the material presented so that students try to understand the appropriate use of cognitive strategies students' learning styles. This was revealed from the results of the analysis of student activity that increased activity of CO 1, 2, 3, 4, 5, and reduced student action irrelevant.

From **Table 2**. it can be a description that states that the percentage of each of attention, both sustained attention and executive attention in class X-1 and X-2 as a whole showed 94.73% and 96.87%. The difference between the two types of attention is influenced by several factors, both internal and external.

Internal factors affecting attention is student motivation toward learning materials and behavior of students during learning. Student motivation during the learning with students' responses indicated that states biology-based metacognitive learning fun and interesting, more motivated, increase interest, and capable of sustaining attention in the long term. The student's behavior is recorded in the student activity sheet also shows positive activity of students during the learning has increased, while the activity is not relevant to the learning has decreased.

External factors that affect student attention is a disorder of the classroom environment, for example influenced by peers to engage speaking, the number of students in a class, the learning time that will affect the attention of students during learning. This is reinforced by the statement Sari (2013) that the external factors that affect student learning, the time, the frequency of student contact with the material being taught, and the number of students in the class.

Completeness of student attention of X-1 and X-2 class showed implementation of developing Biology learning material based on metacognitive was effective to empower student in attention on ecosystem. This statement also confirmed the results of the analysis of students' responses to learning devices, as well as the implementation of learning with metacognitive strategies (**Figure 1**).

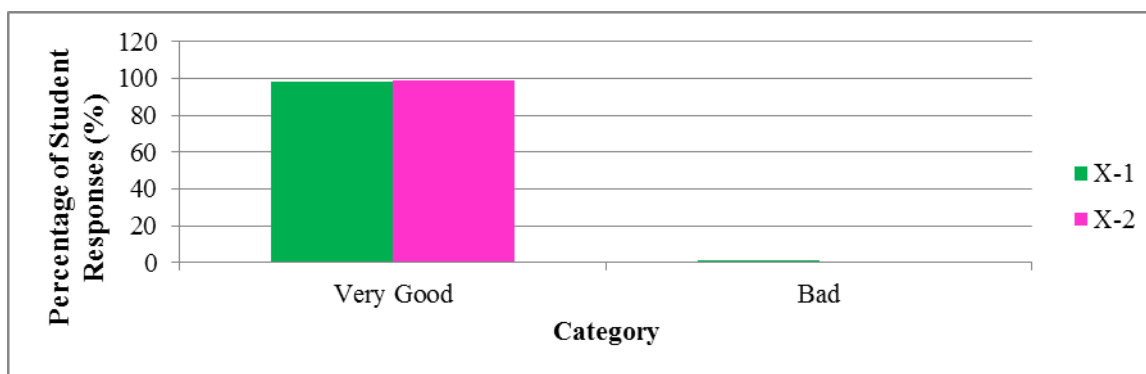


Figure 3. The results of the data analysis on the student responses on trial in class X-1 and X-2

The **Figure 3.** describes the positive response of students from class X-1 and X-2 during the implementation of both learning package and instructional metacognitive strategy; each of which is 98.52% and 99.23% respectively. In overall trend, as much as 98.87 % of students from both classes classified the aforementioned strategy and the learning package as very well done.

The aspects found in students' responses have high percentage are: 1) a new character; 2) learning biology through this way makes students feel enthusiastic, happy, interested, and motivated to follow the path of the material being studied; 3) Such a learning biology makes students understand the material with easy; 4) I look back on my prior concept of understanding self- assessment form before determining "whether my initial concept is different with a new concept I have just learned"; 5) I can identify what has been learned, what has yet to master, and further self-development plan based on the learning needs that have been identified.

The data of analysis of students' responses also mentions that there were some students incapable of sustaining their attention in long term. The possibility of it was influenced by external factors such as environmental disturbance inside and outside the classroom. The solution emerged is to minimize disruption by creating conducive learning environment. To give rise to such an environment, several ways can be employed as follows: 1) Designing physical infrastructure for learning, especially the classroom itself; 2) managing a positive classroom environment. According to Everston et al. as cited (in Santrock, 2008), there are four principles that can be used in managing the class, including: a) reducing the density in the passing (make accessible to students), b) ensuring that teachers can easily see all the children, c) teaching materials and equipment must be easily accessible to children, d) ensuring that students can easily see all the class presentation.

The analysis of students response towards the development and implementation of learning material showed positive responses. This result was consistent with the results of Yasir (2013); In'am, (2012); Susantini (2009a and 2009b); Indana (2009); Paris and King in Slavin (2009); and Corebima *et al.* (2006), which stated that the use of metacognitive strategies to increase cognitive, metacognitive, and thinking skills achieve positive response from students.

There were several obstacles occurred during implementation of the learning materials. Students were confused to the new task and strategy, and student attention only in a short time and have not focused on some object. Alternative solution offered are given: 1) to providing guidance and information to students about how to use metacognitive strategy so that they are able follow learning process with easy, 2) giving guidanced to make students practicing reflective thinking skills, 3) minimalizing annoyance, using certain signal and media, and connecting learning material with real living student, so that learning is attractive.

## Conclusion

Based on the result of analysis and discussion, it concludes that the Biology learning material based on metacognitive strategy has already been valid, practical, and effective to empowering student in attention.

Advices suggest by the researchers that researchers need to illustrate clearly to students and teachers about learning based on metacognitive strategy; other researchers need to create a conducive learning environment to support learning activities so that they are expected to implement ways that can increase student attention, besides focuser (Class-Yess, Teach Ok); it should be further research on other material of Biology and with the development of the attitude of other students.

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# Facilitating Authentic Language Learning through Theatrical Activities

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## ABSTRACT

This study aimed at finding how theatrical activities - drama and video - facilitated authentic learning experience hence various theatrical activities can be employed in the language classroom ranging from a simple situational role play to a full scale theatre production [5]. These activities can help obtaining “multiple yet distinctive learning objectives” in language teaching and learning [1]. The study was conducted in one semester starting from the preparation ‘till the performing night. This is a qualitative case study involving the students of 2012 A, B, and C of English Education Study Program. Field notes, teaching journal, video recorder, and interview were used to collect the data. The finding showed that theatrical activities could promote authentic language learning based on elements of authentic learning situation; (1) real world relevance, (2) ill-defined nature of the learning task, (3) incorporation into the activity of several complex tasks, (4) opportunity to collaborate, (5) assessment which was seamlessly integrated with the task, (6) polished product outcome activity, and (7) possible diversity of outcomes. This study suggests to develop authentic language learning through theatrical activities.

**Key words:** *drama, video, facilitating, authenticity, language learning.*

## 1. Introduction

Theatrical activities are widely used by language educators to promote and facilitate language learning. This paper describes drama and video projects carried out by 2012 A, B, and C students of STKIP PGRI Sidoarjo for creating and supporting authenticity of the learning experience. To find out how theatrical activities facilitated language learning, students were involved in production of their own drama and video in the target language.

Theatrical activities, such as role play, drama production, improvisations, skits based on folk tales and fairy tales have been a ubiquitous feature in the language classroom. This could be due to a fact that “in both theatre and language learning communication is a principal component” [1]. Though theatrical activities have been widely used for language teaching and learning, for the most part, language learners have been staging dramas from already written scripts in the target language. Involving students in creating their own scripts and producing their own video opens up a venue for practicing constructivist approach to teaching, which has been associated with advanced pedagogy [2]. Among the key constructivist assumptions is a demand for authenticity of a learning experience [3].

In the context of foreign language pedagogy, the need for authenticity is well recognized. The dominant approach to language teaching – the communicative method – demands that the use of ‘real life’ language is promoted in the classroom. In order for the real world language to emerge

there is a need to create authentic learning situations, “Real life language always happens in a context, and it would be logical to design classroom activities to resemble real language use” [4],

Various theatrical activities can be employed in the language classroom ranging from a simple situational role play to a full scale theatre production [5], These activities can help obtaining “multiple yet distinctive learning objectives” in language teaching and learning [1], The benefits of using drama in language teaching and learning are numerous. It has been observed that involving language learners in drama production stimulates development of the analytical skills and creativity [1], it promotes the students’ ownership of their learning [6], and introduces in the language classroom “countless different dimensions that they (the students) wouldn’t otherwise be likely to be exposed to in the same hands-on context” [7], Among these numerous “different dimensions” is that drama production can be a means of creating and maintaining an authentic learning environment. The latest developments in digital technologies have widened a spectrum of theatrical activities that could be carried out in the language classroom. Involving students in producing their own digital video is a viable option to stimulate authentic communication in the target language [8], to enhance the vocabulary retention [4], to induce a more complex thinking in the target language [9], and to promote the development of various types of literacies [10],

There are ten distinguished elements that point to authenticity of a learning situation. They are: (1) real world relevance, (2) ill-defined nature of the learning task, (3) incorporation into the activity of several complex tasks that require a sustained period of time to be fulfilled, (4) opportunity for the students to explore the task from different perspectives, (5) opportunity to collaborate, (6) opportunity to reflect, (7) activities can be integrated across different subjects, (8) assessment is seamlessly integrated with the task, (9) outcome of the activity is a polished product, and (10) diversity of outcomes is possible [11],

## **2. Research Method**

It is a descriptive case study which is used to describe an intervention or phenomenon and the real-life context in which it occurred [12], This qualitative case study is an approach to research that facilitates exploration of a phenomenon within its context using a variety of data sources. This ensures that the issue is not explored through one lens, but rather a variety of lenses which allows for multiple facets of the phenomenon to be revealed and understood. Field notes, teaching journal, video recorder, and interview were used to elicit the data. Field notes and teaching journal were used to record teaching activity in one semester, video recorder was used to record students’ drama project as final project in the end of semester, while interview were used to find out lecturers’ and students’ opinion toward the project. Students who were involved in this program were 2012 A, B, and C of English Education Study Program.

## **3. Result and Discussion**

### **3.1 Preparation Activities**

To prepare students’ mental and competence in playing drama, a syllabus was made carefully before teaching activity to reach maximum learning outcome; students are able to perform drama. The activities were divided into big programs. First half semester was for general information and preparation practices, the second half semester was for groups’ project preparation in the forms of drama and video. The information about drama including the definition, characters and characteristics, kinds of drama, theatre exercises, and script writing were completely given to the students in the first meeting.

The next activities were voicing, blocking, acting, and script writing. Voicing is the training of how to produce maximum voice for a live show. It is called voicing practice. The purpose of this exercise is to supply the students on how to play the dialogue loudly if in case no loud speaker during the show or electricity trouble. Here, students were taught how to fill in the lung with air and release it in right way to produce maximum sound. Students were not yet practice speaking, they practiced saying ‘a’, V, ‘u’, ‘e’, and ‘o’, even in their small group drama presentation. Blocking is the technique of how to occupy the stage without leaving an empty space. For practice, each student was called one by one to come to the stage (in front of the class) to let them think ‘where I should place my position on the stage’. Acting is the last stage preparation to act howto be sad, happy, cry, laugh and other expressions that should be trained well before drama performance. This session is interesting hence the students had to come one by one to the front of the class, chose one card containing one expression and practiced it. Some students needed some time to focus before acting it out while others did not. After individual practice, students were asked to prepare group practice.

In group practice, each group which consisted of five students was given five different expression cards that they had to act. Group practices took two meetings because one group could take 30 minutes performance. Most group used their original scenario based on the cards they got in previous meeting. The voice, blocking technique, and action were already good. Some shy students even appeared as very good actors/actress who got recommendation as the main characters for the real show.

Script writing was the next activity done by the students. This was done after each group decided their title for the performance because script writing is directly prepared students to write, adapt, revise, or edit before performance. Script writing and drama preparation took five meetings while I only checked if needed. The rest was tackled by the students. In each meeting, students reported the progress, problems, or the D-day program. Cooperation was required in this group work because they have to leave their ego to take different roles as the job description; as directors, script writers, players, wardrobe persons, set persons, and technician. During preparation week, different class helped to prepare the hall and equipment, advertisement and host.

## **3.2 Theatrical Activities**

There are two kinds of theatrical activities produced by the students; drama and video. Both projects were presented in one event. It is called “Students’ Performing Art” which was held on Friday, 14<sup>th</sup> of August 2015 at 7 p.m up to 11 p.m. The event was presenting four groups of drama and two videos. Some lecturers and heads from other study programs were also attending the event. Students who were not from English Education Study Program also came to see the performance. Lecturers gave the comments to the performers as each of them was given a commentary paper. All lecturers attending the event appreciated students’ effort and achievement to make such kind of performance. They also agreed that students’ performances were above the average; acting, wardrobe, setting, back sound and voice were well presented. Moreover, students’ speaking skill was clearly heard by all audience even they did not use loud speaker, means, the story message was successfully delivered.

### **3.2.1 Drama**

Performed by four teams, each drama spent for about thirty minutes. Performance order was based on the lottery done at the rehearsal night. Not all team members performed hence some persons tackled the settings, back sound, and wardrobe. Moreover, all directors did not perform because they had urgent responsibility arranging and managing the performance in all sides. Generally, drama performances run smoothly, the preparation time between two drama

performances seemed effective and efficient. No wonder because they had prepared the whole things since morning even a day before. Roro Jongrang, and R.A. Kartini were performed lively and each team spent 30 minutes. On the other hand, The Snow White and the Huntsman and Swan Lake were presented through dubbing technique. Swan Lake team dubbed their own voice while the snow white team used original movie voice for the drama which is actually out of the requirement. The team members were not ready from the beginning. In the regular report, they reported their problems that the members had difficult time to meet because all of the members were workers.

**TABLE 1** Drama Titles and Description

<b>Group</b>	<b>Drama Title</b>	<b>Description</b>
1	Roro Jongrang	Played by 15 students, this performance adapted a legend from middle Java. The actors and actress were dressed in full traditional clothes and make-up. Some lecturers commented the drama was attractive because it was presented lively. The back sound played nicely between some scenes. The most interesting is the actor of Bandung Bondowoso is a beautiful girl acting perfectly like a man.
2	R.A. Kartini	Taken from the biography of Indonesian heroin, R.A. Kartini, students of 2012 A performed the story of Kartini's life before she got married until her premature death in 1904 at the age of 25. It is a live performance supported by good setting, furniture, and back sound.
3	The Snow White and the Huntsman	Performed by the students of 2012 C. the snow white and the huntsman was presented in lip-sync technique. The actors and actress were mostly acting less speaking. This was out of the requirement hence the purpose of the activity is to support students' speaking ability.
4	Swan Lake	According to some observers, Swan Lake performance is a well prepared performance. This is true because students dubbed their own voice in a professional studio for the performance. As the progress report said, it took a day for voice recording only. Furthermore, the settings in the form of slides were also well designed.

### 3.2.2 Video

As stated in syllabus, the project was only in the form of drama. In the process, students argued that in different subject they had made drama project so they wanted different challenge to do. To cater students' creativity, and to free students' innovation, then the projects were in the forms of drama and video. All students were in one voice agreeing this new idea. Mostly, the process was the same. The difference was in the final step; performing and movie making.

**Table 2** Video Titles and Description

<b>Group</b>	<b>Video Titles</b>	<b>Description</b>
1	The Second Chance	This is an indie movie produced by students of 2012 B. The story was about how a girl realized that she had done something wrong in the past and wanted to make a better difference. To support the story, the scenes were taken in Juanda airport, Kebun Raya Pasuruan, and a house.
2	Lutung Kasanmg and Cinderella	This is another indie movie produced by 2012 B. The story is a drama comedy combining the story of Lutung Kasanmg and Cinderella. The settings were mostly taken in Mpu Tantular museum of Sidoarjo. The end of the story is unpredictable but nice.

### 3.3 How Theatrical Activities Facilitate Authentic Language Learning

This study supports Nikitana’s study which was done in 2011. She believes that theatrical activities are widely used by language educators to promote and facilitate language learning. Further, she claims that involving students in production of their own video or a short movie in the target language allows a seamless fusion of language learning, art, and popular culture. The activity is also conducive for creating an authentic learning situation where the real world becomes a part of the educational experience and necessitates the use of an authentic language by the learners [13],

Based on the data found during students’ performing art, conversations made in video and drama scripts showed real life relevance because there were some daily expressions people usually use including agreement, disagreement, congratulating, disappointment, arguing, surprise, sympathy, and thanking. Some scenes were also showing specific condition like dialogue between parents and kid, teacher and students, between friends or couple. Secondly, while developing the storylines and planning the production of the videos the students had an ample opportunity to reflect not only on the material they had learned during the language program but also to consider how to produce a ‘polished’ end product, which identified as an ultimate outcome of an authentic learning experience [11]. Further, the students needed to approach the task from various perspectives. They had to attend not only to the artistic aspect of the drama performing or video making but also be efficient managers of their resources and time. In this case, drama teams had to manage the schedule of trainings, renting needed clothes, and preparing the settings, while video teams had to scale down the original plan for the video which included traveling to other parts of city because they realized that they would need considerable financial resources as well as an ample time at their disposal to accomplish this project. Of ten elements of authentic learning situation proposed by Herrington et.al, seven elements were found. For detail description, below are the elements of authentic situation in drama and video project.

**TABLE 3** Elements of Authentic Learning Situation in the Project

<b>Elements of Authentic Learning Situation</b>	<b>Explanation</b>	<b>Elaboration</b>
Real world relevance	The language used in drama and video reflects real life situation.	As the synopses attest, the drama and video had real life relevance because they reflected or incorporated some parts of real life situation which were showing specific condition like dialogues between parents and kid, teacher and students, between friends or couple.
The task is ill-defined	There were no pre designed Teaching aids or materials to guide the work on the project.	The students had to separate the project into several stages; they needed to plan each stage of the project implementation. The teams encountered various unexpected problems while shooting the video ( <i>eg.</i> , technical problems, software incompatibility, etc), they also had to anticipate technical problems happened during the live show ( <i>eg.</i> , electrical problem, audio, or setting).
Several complex tasks are incorporated in one project	The students had to attend to the linguistic, artistic, and technical aspects of the project.	In making the videos, the students developed their video scripts and wrote the conversations in English. They memorized the lines before acting in front of the camera. To shoot the video, they needed to manage the time, prepare the equipment and physical props, identify suitable locations, etc. While to perform the live drama, students needed to prepare similar things like what to do in making video. The differences are students had to

		memorize the whole conversations, manage the time allocation, blocking, setting, voice, and acting at the same time because they had no time to pause or cut like in making video. Thus, well preparation was crucial to the success of performance.
Opportunity to collaborate	The students had to share the responsibilities and tasks between themselves equally.	Every video team member contributed to the development of the storyline, writing the conversations, filming and editing of the video, while for drama, every team member contributed to the development of the storyline, writing conversations, practicing drama, preparing the settings, audio, and wardrobe. This promoted team work and collaboration between the group members.
Assessment is integrated within the task	Various aspects were evaluated. The evaluation scheme was given to the students before the project began	The scheme included marks for an appropriate language use, video content/ drama performance, team work, and creativity.
Outcome of the activity is a polished product	Students' drama and video had been prepared well before performing.	The drama and video could begin only after the scripts were ready and well rehearsed. While working on the drama and video scripts the students needed to decide what message they wanted to send to their audience and how to send this message effectively.
Diversity of learning outcomes is possible	Linguistic and nonlinguistic learning outcomes were achieved.	As the students performed, they had not only polished the language skills but also learned to work as a group, to communicate, to persevere in their task, to manage their time, to be responsible. Some students said they could learn cooperatively with all members, discuss all change and plan during the work, and gain new knowledge dealing with performing art.

Evidently, creating and filming a drama or a video in the target language is an 'illdefined' and complex task which takes a certain period of time to complete; the outcome of the activity is a 'polished product'. Through the creative process ample opportunities arise for the students to collaborate on the task, to reflect on their learning, and to explore the task from different perspectives. The learners have to deal with multiple responsibilities, such as writing the script, preparing physical props, acting, choosing suitable locations to shoot the video, etc., which also promotes the learners' ownership of their learning.

The learners' ability to convey the intended message to the viewers through linguistic means was a very important aspect of the project. Sending a message successfully means that the recipients are able to understand the message. In order to achieve this, appropriate language must be employed. There were two conditions dealing with language use in the project, (1) the students may adapt popular story or make their own scenario which has good moral value, (2) the narratives and conversations in the video must be understandable to the audience. As language educators know, the students often feel constrained in expressing themselves in the target language as eloquently as they could do in their mother tongue. Due to a limited knowledge of the target language the learners may be tempted to use a direct word-by-word translation from their mother tongue or they may want to employ electronic translation devices or the translation software available on the Internet. These 'solutions' to the problem would not only result in an inferior linguistic output by the learners but also negate the aim of the project to develop the students' language skills.

## 4. Conclusion

To conclude, the benefits to be reaped from involving language learners in producing their own project in the target language are numerous and diverse. Among them, as the current paper argued, is an enhanced authenticity of a learning experience that in turn stimulates the use of a real world language by the students. The finding showed that theatrical activities could promote authentic language learning based on elements of authentic learning situation; (1) real world relevance, (2) ill-defined nature of the learning task, (3) incorporation into the activity of several complex tasks, (4) opportunity to collaborate, (5) assessment which was seamlessly integrated with the task, (6) polished product outcome activity, and (7) possible diversity of outcomes. This study suggests developing authentic language learning through theatrical activities. It is hoped that an approach to language teaching described in the present article could identify some possible vectors for developing language pedagogy in the institution.

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# Learning to Write Short Story using Mind Map Technique

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## ABSTRACT

This study aims to prepare the implementation of learning to write short stories using the mind map techniques. Short story is often abbreviated as a fictitious prose narrative, brief and to the point than fiction. It relays on literary techniques such as character, plot, theme, language [1]. Mind Map is the concept is based on the way our brains work to save the information in the preparation of learning. The students are explained the theory of making short stories and mind map [2]. This study used qualitative methods, focused in process of writing short story. First, students are given reading short story entitled "Malikhah's wedding". Second, students are formed in groups, then they are asked to identify intrinsic element of short story they have read. Third, students in their groups create mind map sketch and put on identified intrinsic elements of short story. Forth, based on mind maps they write short story back on their own words. Forth, students make new sketch of mind map by applying elements of their self memorable life experiences to make new short story. In conclusion, through new mind maps, the students are able write new short story.

**Key words:** *Writing, short story, mind map.*

## Introduction

Teaching literature in formal educational from day to day is affected by various problems. Apparently, the teaching of literature is less attractive until now. Complaints of teachers, students, and writers on literature appreciation have been the concrete evidence that something is lacking in learning literature. The results of free interviews with Indonesian's language and literature teachers at various times show that in general the complaints in the teaching of literature have some points of basic knowledge and skills in the field of literature. Literary material received during their formal education is very limited, it is only 2 units of semester credit, Literary course material is more theoretical, and examples of Literary works, whereas they need more practical in the field [3]. The students' interest in learning and interest in reading is still very low. Their availability of time, management of the school library, and encouragement of the teacher is being the main cause in this case various constraints on the cause of teaching literature at various levels of formal education until now have not reached the expected target. The ultimate goal of learning literature, growth and increase student appreciation of literature on the subject has not been encouraging.

In general, learning to write short stories was not demonstrated successfully by students. This condition is alarming and a problem for writers. The mind map technique allows students to explore the whole purpose of the brain's ability to think and learn. This technique helps students to relieve boredom at the thought and learning, since it involves the balance of left brain and right brain through mind mapping in the brain are realized in the form of line drawings and scribbles keywords [4]. Using mind map can help students identify a logical plan and increases recall of the subject matter [5].

With simple mind map students develop imagination in writing short stories. Such efforts can provide experiences for students to write a short story more creative and fun. For that reason this paper tries describe the problem of learning to write short stories by applying mind map. With simple mind map students develop imagination in writing short stories. Such efforts can the techniques of mind map.

## **1. Literature**

This section reviews the theoretical discussed: a) Theory of Literature, b) short story, and c) a Mind Map.

### **1.1. Theory of Literature.**

Literature in Indonesian language is the word commonly used to refer to the "literary" or a type of writing that has a particular meaning. Also in the literary sense, literature can be divided into literature written or oral literature. Here the literature is not much to do with writing, but with the language which is used as a vehicle to express a particular experience or thoughts. Literature usually divided according to geographical region or language. So, which is included in the category of Literature are: Novels, Stories / short stories (written / verbal), poem, limerick, theatre / drama, painting / calligraphy. Literary theory consists of a set of interrelated concepts scientifically and systematically serves to explain the literary phenomenon. These theories are used and operated to provide the result of the analysis of literary works [4]. Literature is a creative activity. Literary works are to be read, enjoyed, and appreciated. Literary work is one that has a 'typical literary' systematic [6]. Every literary work has distinctive characteristics and the properties of the same with the other works of art. While efforts to interpret the distinctive feature of literary works can be a tool to support the understanding of literature. This understanding is gained through 'reading' critically and carefully. Literary work is the result of the creation of the author [7].

The study of literature includes the study of intrinsic and extrinsic study. Study *intrinsic* limit ourselves to literature itself, without connecting literature with the world outside the literary work. This study includes characterization, conflict, tone (tone), background (setting), themes, and so on. While the study of *extrinsic* associate literature with the world outside the literary work. This study includes a biography of the author, the aspirations of the people, history, etc. [7]. (Darma, 2004: 22-23). And review of the uniqueness of a writer covering theme, characterization of the characters, events, and his creation which includes the choice of words and style of language [8]. (Pradopo, 2007: 254).

### **1.2. Short story**

Short story is often abbreviated as a fictitious prose narrative. Short stories tend to be concise and to the point than his longer works of fiction, such as novellas (in the modern sense) and novels. Because of short, short stories are successful rely on literary techniques such as character, plot, theme, language and insight wider than longer fiction [4]. The story may be of any type. Short story from anecdote, a situation described briefly that quickly arrived at the destination, with the parallel tradition of oral storytelling. The short story evolved as a miniature, with examples in the tales by E.T.A. Hoffmann and Anton Chekhov.

### **1.3. Short Story elements and characteristics**

Short stories tend to be less complex than novels. The short story usually focuses on one incident, has a single plot, a single setting, a limited number of characters, including a brief period of time.

Forms of longer fiction, stories tend to contain certain core elements of dramatic structure: exposition (introduction setting, situation and main characters), complications (events in the story that introduces the conflict and the main character); complications (events in the story that introduces the conflict); rising action, crisis (the decisive moment for the protagonist and their commitment to a move), climax (the point of highest interest in terms of the conflict and the point of the story with the most action); resolution (the story in which the conflict is resolved), and moral [9].

Modern short stories only occasionally contain exposition. Much more common is an abrupt beginning, with the story starting in the middle of the action. As the stories are longer, plots of short stories also contain a climax, or turning point. However, the endings of many short stories are abrupt and open and may (or may not) have a moral or practical lesson. As with any art form, the characteristic of a different short story by author. Photographs also have an intrinsic element of stories. Flow of short story about the construction of a series of events that are logical and chronological inter-related and are caused or experienced by actors [1].

#### **1.4. Size**

A short story is less than 1,000 words and its belong to the genre of flash fiction. Fiction that goes beyond the limit of short stories parameters are classified into the novel. Determining what exactly separates a short story from a fictional format is problematic term. A classic definition of a short story is that it should be able to read it in one sitting. Other definitions are assigning length fiction of the word that is 7500 words. In contemporary usage, the term short story most often refers to a work of fiction no longer than 20,000 words and no shorter than 1,000 words [3].

#### **1.5. Genre**

The short story in general is a form of essay fiction, and is the most widely published fiction like science fiction, horror fiction, detective fiction, and others. The short story is now also including other forms of non-fiction such as travel notes, lyrical prose and postmodern variants as well as non-fiction.

## **2. Technique of Making Mind Map**

Mind Map is a method of learning a concept invented by Tony Buzan [2]. The concept is based on the way our brains work to save the information. The results showed that our brain does not store information in the boxes lined up neatly nerve cells but rather collect in the nerve cells that at first glance it will look like tree branches. From these facts, it can be concluded that information such as how the brain works, the better information stored in the brain and the end result of course, will be easier to be learned.

From the explanation above, it can be concluded the way to write the Mind Map, first is to write the main theme as the central point / middle and thinking branches or derivative themes that came out from a central point and find the relationship between the derivative themes. That means every time there is an idea then focus is directed at the main theme, the key points of the main themes can be developed to each of these critical points and found the relationship between each point. In this way can be gotten an idea of what things already know and which areas are still not well controlled.

Some important things to make a mind map are 1) make sure the main theme lies in the middle. For example, For short story entitled "MIND MAP", the main theme will be written "MIND MAP", and derivative themes consist of: Media, Adviser, Achievements, Software, Author, Educator, Sportsman, Intelligence. They have branches of other sub-themes in details (see figure 1).



Figure 1. Mind map, with Tony Buzan in the centre, taken from tonybuzan.com  
<http://www.irishtimes.com/business/how-tony-buzan-used-mind-map>.

**2.1. Relationship between each theme is marked with the lines, colors or symbols.**

From the themes can be derived the second sub-themes, third sub-themes and so on. The next step is to find the relationship between each theme and derivations using lines, colors, arrows or branches and other forms of symbols to describe the relationship between the derivative themes. The patterns of this relationship will help to understand the topic of the short story is being read. Moreover Mind Map that has been modified with symbols and colors will be much more meaningful and interesting than a "poor color" Mind Map.

**2.2. Key points use capital letters.**

Capital letters are used to write the key points of Mind Map. The small letters are used for explaining key points.

**2.3. Create a mind map on plain paper.**

The ideas to make Mind Map is thinking creatively, therefore use plain paper and not easily to modify the Mind Map in the early stages.

**2.4. Leave space for additional of themes or sub-themes**

Additional themes and modifications can be done repeatedly. Information points can be added. Students can explore the whole purpose of the brain's ability to think and learn. This technique

helps students to relieve boredom at the thought and learning. Using a mind map is expected to be easier to develop students' imagination in writing short stories. Such efforts can provide experiences for students to write a short story creatively and fun.

### 3. Implementation of Learning to Write Short Story Using Mind Map Technique.

#### 3.1. First session activities:

In the first session, students are given examples of a short story entitled "Malikhah's Wedding". Then students are asked to identify the elements and plot of that short story. Then students create a sketch of mind map from elements and plot of that short story. The last rewrite stories based mind map with its own version.

#### 3.2. Class Activities

Teacher communicates learning objectives by introducing theory of short story and a technique how to make mind map. Then, students are formed groups of 4-5 people. Teacher gives an example of short story reading; then guides students to read critically and understand a literary short story optimally with the goal of students being able to identify and analyze the elements and plot of the story. For example short story "Malikah's Wedding" by Evi Idawati [10]. Then, students identify and analyze the contents of the example of the short story to understand and identify the elements and plot of that short stories. The review includes: (a) characterization, (b) background or setting, (c) plot or plots, (d) choice of words and style of language, and (e) the theme. After students observe and understand the elements of a short story Malikah's Wedding intrinsically, then students formulate ideas sketch of map 'mind map' in the group. Each student also make a sketch of the same mind maps. Then, the teacher asks the students to present their mind map sketch of each group represented one student. Each group presents a sketch of mind map. Further, teacher asks students individually to write back the story of Malikah's Wedding with their own version. Then the students try rewrite short story Malikah's Wedding (continued at home for homework assignment.).

#### 3.3. Activities to identify the elements of short story in the group for sketching mind map.

No.	Elements Keyword in Mind Map	Student Activities
1	Personalities	Identify the main character: Malikah is 12 years old.and Hamdan is 17 years old
2	Background (Setting)	Write a rural setting in Central Java, namely Nggojoyo village where people still adhere to the traditional and local customs and values of Islam. The village is located on a small island in the sea of Demak. Most of these villagers livelihood as fishermen
3	Plot (Plot)	Prepare groove on the short story. The flow is advanced or progressive channels. This story starts from the receipt of application Mr. Dullah and family to family Malikah the boy and girl don't know each other yet. This raise concerns mainly on self of Malikah. Malikhah isolated herself on the sea site. Malikah disappeared until she found back at the village in a state of unconsciousness.

		The story ends with the return of awareness Malikhah with Hamdan's smile greeted by his side, and the next day they were finally married.
4	Word Choice and Style English language daily	Identify daily sentences, not aesthetic language commonly used in the literature (non-literary language).
5	Theme	Determine the themes rose in the short story "Malikhah's Wedding" is about a marriage, especially matchmaking marriage of young couple because of their parents.
6	Religion	traditional Islam

Students make sketch of Mind Map of "Marriage Malikhah" as an example of figure 2.

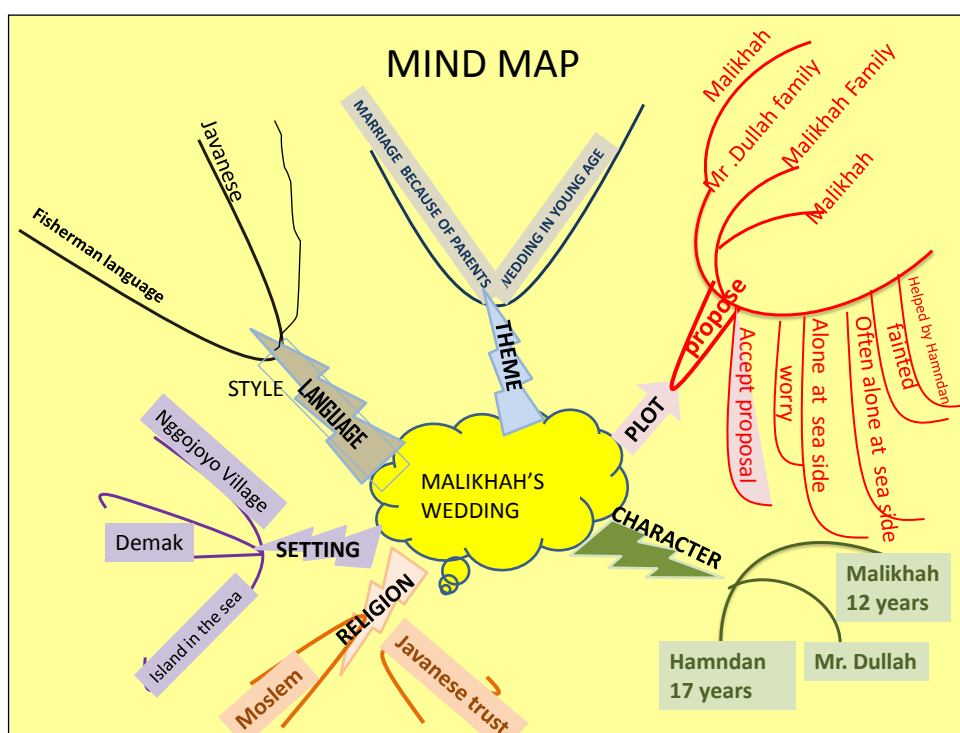


Figure 2. Mind Map of Malikhah's Wedding Short Story

### 3.4. Second Session

From students' experience to make mind map of Malikhah's Wedding, the students make its short story using their self language, words, and version, then the teacher asks the students rewriting the short story "Malikhah's wedding" and shows the results of re-writing short story using their version, based on the sketch of mind map they made.

Then, students are asked to identify five events experience considered the most memorable, and students were told to choose one that best and memorable event in his heart. This event is used as a source of themes in writing a new short story.

Through this experience, students make sketch of a new mind map by drawing event theme in the middle of a blank paper. Then draw intrinsic elements of short stories outside the central image

with colored pencils or markers based on a central theme of his choice. Each image is connected with curved lines and equipped keywords of the central themes related to the elements of *theme, character, characterization, setting, plot, and message (the message)*. Students develop their imagination on the mind maps as free as possible to sketch their mind map.

Then the teacher assigns students to make a new short story based on their new mind map in his home work.

Activities cover the Second Meeting: The teacher asks the students to make new mind map. The Students are asked to write the new short story based on intrinsic elements of Short Story on the new map mind.

The teacher gives the task to complete writing short stories at home in one week.

### 3.5. Third Meeting

Students present the work of their short stories of the Mind Map technique. Practical steps to make a Short Story. Students choose the most memorable experience to be a resource topic or theme of the short story was written as a topic in the middle of the mind map. Students determine the content of the story elements intrinsic to write a short story in the form of themes, characters, characterization, plot, setting, style and point of view on the branches of a mind map maps new ideas each. Students make up a story to associate his experience in the branch - the branch map mind map, with colored pencils or markers based on a central theme of his choice. Each image is connected with curved lines and equipped keyword that is a mind map of the central themes related to the elements of theme, character, characterization, setting, plot, and style. Students organize stories with imagination by developing a mind map is as free as possible into a short story or a short story. Students connecting disposition until realization that stories work. Moderate disposition, frame groove, the title short story and dialogue students can learn from the surrounding environment to create more interesting stories. Students prepare a paper product that has been built from the experience of a work product stories. Students present the work of short stories. At this meeting the student is presenting his new work of short stories. Thus students can demonstrate activity in the learning process. Creativity is evidenced by associating students and develops what is in the mind frame of folders, work product into a short story that is so. Some students are given the opportunity to show the work of a variety of short story writing.

## 4. Conclusion

In preparing learning to write short story using the mind map technique, First, the students were explained the theory of making a short story and analyze the elements and plot of short story. Second, the students were explained how to make its mind map. The students are formed in group consists of four students. Third, student individually is given a short story reading entitled "Malikhah Wedding" Forth, students in group are asked to identify the elements and plot of short story they have read, then apply at the mind map sketch. Further, students are asked to rewrite short story of "Malikhah's wedding" with their own words or version based on mind map they have made. The student represents their groups to present their mind map and short story in front of the class. Student is asked to choose one of five their memorable and most impressive experiences as the new title of mind map as basic of new short story individually. Students will create a new short story, students begin to make sketch of the mind map by first selecting the most memorable experience for the topic of short story. Then students determine the content of the story as he wrote the intrinsic elements of the short story in the form of themes, characters, characterization, plot,

setting, style and point of view on the branches of a new mind map. Furthermore, students compose a short story by associating experiences based on branches of sketch map mind map containing the keywords.

Having experience of writing a short story using their new mind map, students can write a short story with a new theme.

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## 6. Synopsis of " Malikhah's Wedding "

Malikhah is a young girl who was twelve years old and had just graduated from Islamic education. Hamdan, seventeen-year-old boy asked her through his father, Mr. Dullah. Her father and Mr. Dullah want to match and marry them both. But Malikhah's father begged that Malikhah must finish school first. Mr. Dullah was the richest man in the village Nggojoyo, a fishing village on a small island in sea Demak. Hamdan was his only son. Malikhah and their families manage the boarding school in the village. This has been going on for generations. Because who held the party is the richest man in the village, so the villagers, weddings Malikhah is their party as well.

Malikhah is a pretty girl, innocent, and religious. She never had associated with men but fathers and older brothers, especially with Hamdan. He received his father's decision to accept the proposal, without question. This means that she will soon marry the man her father choice, men who had never known. The same thing has happened to his older brother. And so far they do not have significant problems and seem happy.

Ahead of her wedding day, Malikhah's anxiety grows. Many questions are in his mind that she has not got the answer. She became a frequent alone in the hut by the beach, until the day she disappeared. His parents, Hamdan family, and the villagers then busy looking for existence. Finally Malikhah found in a state of unconsciousness. Hamdan was relieved and grateful. During Malikhah disappeared, he was also very anxious and had thought that Malikhah left because did not love. When Malikhah opened his eyes, he saw a meaningful smile of youth that no other helps but Hamdan. The next day, their wedding took place with great fanfare.



# Teaching Speaking through Rong-chang Website

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## ABSTRACT

The main aim of this research was to introduce the use of rong-chang website as media in teaching speaking. The researcher combined three related practices in teaching speaking through [www.rong-chang.com](http://www.rong-chang.com). They were individual practice, practice in a pair and group work. The first step conducted by the lecturer was giving instruction to the students to open the website consisting of several texts completed with the audio. Then, the students must memorize the chosen text as the basic material when they came to the class. This step belonged to Individual practice. It was aimed to achieve the English internalization [1] so that the students will speak fluently when telling the story to his/her peer. After having memorized the text, the students must tell it to the peer. This step belonged to practice in pair. In this step, the students must tell one another in turn. This step was aimed to allow the learners to interact with each other simultaneously [2], After all, the students must work in a group to tell what they have understood from their previous peer to the group. If one of the members did not understand the content of the story, she/he might ask the speaker again.

**Key Words:** *rong-chang website, Individual Practice, practice in a pair and group work*

## 1. Introduction

The use of English as a global Lingua Franca [3] stimulates people to learn English, especially speaking skill. It is because the dominance of English used as a lingua franca in international business contexts, for instance, is now seemingly beyond dispute, with various studies confirming that English is an intrinsic part of communication in multinational settings and a fact of life for many business people [4], In addition, speaking gains its prominence in language teaching particularly in English as a foreign language (EFL) and English as a second language (ESL) because without a fluent skill in speaking, learners' language development will be severely hard to get something new in their experience [5], Practically, in teaching speaking, learners are taught to speak English fluently and confidently.

However, encouraging students to be more confident and braver to speak English is not that easy. It needs hard efforts and good strategies to achieve it as one of the biggest barriers in learning speaking is lack of confidence [6], Therefore, a teacher is supposed to be more active and creative to find some interesting path ways to teach speaking.

Teaching speaking is different from teaching other skills of English such as writing, reading, and listening in which an English teacher may probably distribute the question sheets and wait the result by sitting behind the desk. To develop students' speaking ability, an English teacher may not just sit behind the desk and rely on a book consisting of some instructions about speaking. One of the ways to avoid boredom and monotonous method in teaching speaking is by using certain English website. Therefore, this research tries to introduce [www.rong-chang.com](http://www.rong-chang.com) as a medium to teach speaking.

[www.rong-chang.com](http://www.rong-chang.com) is an English website covering a lot of English materials with various learner levels. This website provides all English learners with many different exercises in English skills (listening, speaking, reading and writing). In addition, this website gives the materials not only

for adult learners but also young learners (English for children). English learners are really boiled with this website. English teacher (the writer himself) is so much helped with the existence of this website. He could develop his creativity in teaching speaking through it. The researcher, therefore, just focused on the speaking material inasmuch as the researcher wanted to develop students' confidence and bravery to express their ideas by using English.

## 2. Research Method

This research used case study approach. There are several types of case study but the researcher decided to choose observational case study here. It is because he observed the subjects and all activities done by the students and the teacher (who was also the researcher) in the class in which he teaches. Participant observation is the primary method of gathering data to study a particular entity or some aspect of the entity (such as a school or classes within a school) [9],

The data were all activities dealing with three related practices. All data were gathered by using handy cam recorder. To gather the data more easily he asked help from his colleague to record all activities happening in the class. Such a design was chosen because the researcher wanted to elaborate students' confidence and bravery to express their ideas in English through three related practices.

## 3. Result and Discussion

At the first meeting, the researcher explained the subject and goals to achieve within the semester. He explained the rules of the class including the website that he was trying to use in teaching speaking. He explained several steps which should be done by the students in his class. The first step, students must search the web [www.rong-chang.com](http://www.rong-chang.com). When it is clicked, it will appear such a figure (figure 1).



Talk to "Tutor Mike"

# English as a Second Language



Download Free "ESL Fast" Apps

Picture 1 Figure of the web

There are two levels listed here (for beginner and for intermediate). Go through to the intermediate level 1. It consists of 265 stories completed with audio for each story. When it is clicked, it gives 265 stories completed with different titles. The followings are the titles.

### English for Intermediate Learners (1)

1. New to America
2. A Haircut
3. The Yardman

4. Grab Your Umbrellas
  5. Shopping for Bargains
  6. Horses to Ride
  7. Does Garlic Mean Garlic?
  8. A Shower Injury
  9. Pete's Sharp Knife
  10. Provider Overbills Customer
  11. A Good Sandwich
  12. Sara's Upset Stomach
  13. Please Marry Me!
  14. Uaundry Day
  15. A Noisy Neighbor
  16. The New Realtor
  17. The Fire Alarm
  18. Eddie's Short Visit
  19. Carbon Monoxide
  20. A Visit to Asia
- 21-40 | 41-60 | 61-80 | 81-100 | 101-120 | 121-140 | 141-160 | 161-180 | 181-200 | 201-220 | 221-240 | 241-265

After all, the lecturer implemented several procedures. The first one is that the lecturer instructed the students to practice the text individually. It is done by doing rehearsal and memorization uttering the sentences individually. Then, the students continue to the next step that is practicing in pair, in this step, students tell the story with his/her peer in turn. The last step is reporting the result in a group. Students must report the result to the group. If one of the member does not understand he/ she may ask the speaker.

### 3.1 Individual Practice

In this step, the students were instructed to choose the story based on their attendance number. If the student's number is one, she/he is supposed to choose story number one. If the student's number is thirteen, she/he is supposed to choose story number thirteen and so on. They must click the story, get the text, and listen to the audio. After having the text, they must read it aloud for more than three times. While reading, they are supposed to memorize the text. After memorizing the text, they must speak aloud about the content of the text. After all, they should click the audio to listen to the native pronunciation. While listening to the audio, the students should read along with the sentences spoken by the native speaker through the audio. This activity must be repeated for more than three times. By doing so, the students have already had something in mind before coming to the class. This individual practice was aimed to achieve the English internalization as when students repeat spontaneously some structures and vocabulary items, they have heard in order to internalize it [1],

### 3.2 Practice in pair

After implementing individual practice, students must continue to the next step that is practicing in pair. One of the basic notions of implementing this step was the pair work allows learners to interact with each other simultaneously [2], In this phase, they are supposed to practice what they have learnt with his/her peer. Because mastering a language needs a rehearsal and practice a lot. In addition, developing skill in communicating foreign language, students must have continual practice in communication [7], This activity was conducted when the students were inside of the class. In this

activity, the students sat face to face with their classmate. To make the students easy to find the partner, the teacher chose them based on the number of the attendance list. Student whose number is one will be with student number two; student whose number is two will be with number three, and so on till the last student in the attendance. Then, there will be two groups in the class (the even number and the odd number student).

Students in the odd number group will act as the first speaker and the other will act as the second speaker. When the first speaker tells the story, the second speaker becomes the listener and writes some questions related to the story. Then, ask her/him about the content of the story. On the other hand, when the second speaker tells the story, the first speaker becomes the listener and writes some questions related to the story. Then, she/he does the same things as the first speaker. To practice speaking more, the students in the odd number moves the position to the next chair (e.g., student number one moves to the chair for student number three, five to seven, nine to eleven, and so on). By doing so, every student will get the different partner. They should do the same thing as they did in the first session. In addition, doing this activity helps students to have a peer mediation and negotiation of meaning, which are believed to facilitate second language acquisition (SLA).

### 3.3 Group work

After all, it is time to report the result of their conversation to the teacher and other classmates. They must tell the class the answer of the questions given to their classmate. By doing so, students can practice speaking in front of the public (in front of classmates and the teacher). On the other hand, students practice speaking with many classmates and getting responses from them. In line with this statement, by Scott (1981:1) [8] that speaking is an activity involving two or more people whom the participants are both hearer and speakers having to react what they hear and each participant has an intention that she/he wants to achieve in the interaction. This activity was conducted in a group and presented in front of the class.

## 4. Conclusion

Teaching speaking through technology (rong-chang website) could really maximize students' speaking ability inasmuch as this technique involves three related practices. They are individual practice, practice in pair and group work. In individual practice, the students were instructed to do self repetition by doing memorizing and speaking aloud about the text. This step is taken to get English internalization for each student. After having individual practice, the students must practice what they have memorized with their peer. This phase is called as practice in pair. It is aimed to allow students to interact with each other simultaneously. Finally, the students must report what they have heard from their peer to the group. If one of the members does not understand, he/she may ask the presenter about what is said. This stage is aimed to make students accustomed to speaking in front of public.

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## Indicator of Conjecturing Process in a Problem Solving of the Pattern Generalization

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**Abstract.** This study aimed to reveal indicator of conjecturing process in solving pattern generalizing problem. The subject of this study was 65 students at the eighth grade of Secondary School. The data collection was conducted by giving a problem-solving task of pattern generalization to accomplish and having deeply interview to comprehend and clarify the conjecturing process based on the subjects' task responses. Both task-giving and interview were recorded audio-visually. The indicator of conjecturing process resulted was presented based on the stage of conjecturing process of empirical induction type from the finite number of discrete case: observing case, organizing case, searching for and predicting pattern, formulating a conjecture, validating the conjecture, generalizing the conjecture, justifying the generalization.

Keywords: conjecturing process, problem solving, patterns generalization

### 1 Introduction

Conjecture was a make-sense statement, which its truth has not been fixed yet (Canada & Castro, 2005; Ontario Ministry of Education, 2005; Mason, Burton, & Stacey, 2010; Reid, 2002). Along with its construct, Cañadas, Deulofeu, Figueiras, Reid, & Yevdokimov (2007) suggested that conjecture referred to a statement of all possibilities for particular case that occurred, based on the empirical evidence, but still questionable.

Conjecture and the problem-solving were both interrelated fundamental aspects in thematic activities (Cañadas, Deulofeu, Figueiras, Reid, & Yevdokimov, 2007; NCTM, 2000). They were seen as interrelated mathematics activities. NCTM (2000) emphasized that the problem-solving was involved into particular task that the solution had not been found yet in prior. Furthermore, it was stated that conducting mathematics led to the involvement of discovering, and conjecture was the primary way of it.

The process of constructing the conjecture was called as conjecturing process (Cañadas, Deulofeu, Figueiras, Reid, & Yevdokimov, 2007; Mason, Burton, & Stacey, 2010). One type of common conjecturing for solving a mathematics problem was empirical induction from a finite number of discrete cases by observing case, organizing case, searching for and predicting pattern, formulating a conjecture, validating the conjecture, generalizing the conjecture, justifying the generalization (Cañadas, Deulofeu, Figueiras, Reid, & Yevdokimov, 2007).

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The contribution of the conjecture related to mathematics had been studied a lot (Arzarello, et al., 1998; Bergqvist, 2005; Furinghetti, Paola, 2003; Mason, 2002; Yevdokimov, 2005; Lin, 2006; Lin & Tsai, 2013). The contribution of its stages had also been studied (Polya, 1967; Reid, 2002; Canadas, 2002; Cañadas, Deulofeu, Figueiras, Reid, and Yevdokimov, 2007). The current study might be the theoretical base of conjecturing process for empirical induction of finite number of discrete case. All those studies had lack of concerning to uncover the indicator of conjecturing process dealing with the pattern generalizing problem.

Pólya (1967) displayed four stages of inductive reasoning process in resolving problem: (1) observing certain cases, (2) formulating the conjecture based on the prior case, (3) generalizing and (4) verifying the conjecture with certain new cases. Reid (2002) applied the inductive reasoning process in the context of empirical induction of finite numbers for discrete case: (1) observing certain cases, (2) observing the pattern, (3) formulating the conjecture for the common cases (by hesitancy), (4) generalizing, and (5) used the generalization as the evidence. Furthermore, Canadas (2002) suggested seven stages illustrating inductive reasoning process: (1) Observing cases, (2) Organizing cases, (3) Searching for and predicting patterns, (4) Formulating a conjecture, (5) Validating the conjecture, (6) Generalizing the conjecture, (7) Justifying the generalization.

Cañadas, Deulofeu, Figueiras, Reid, and Yevdokimov (2007), then, applied Canada's seven-stages as one type of conjecturing process for empirical induction of finite number of discrete case. The term of conjecturing in this study was the conjecturing process of empirical induction of finite number for discrete case.

This conjecturing process often existed in problems with numbers, in which the observed pattern was consistent (Cañadas, Deulofeu, Figueiras, Reid, and Yevdokimov, 2007). In solving the problem with consistent pattern, the seven-stages of conjecturing process had not always occurred, for there were plenty factors affecting such as the type of the task or which students who involved (Canadas, 2005).

The seven stages were all explained as follows. (1) Observing case referred to the initial treats toward certain cases of the promoted problems; (2) organizing case referred to activities involving the implementation of strategy to ease the task for particular cases. The most common strategy in this stage was data-listing and data-ordering; (3) searching for and predicting pattern was activities when one was observing repeated and regular circumstance, she/he naturally imagined that the pattern might be valid for the latter unknown cases yet, (4) formulating the conjecture was constructing a statement about all possibilities of the case, based on empirical evidence, but with hesitancy. In short, conjecture was un-validated statement, yet; (5) validating the conjecture referred to the activities conducted in order to justify the resulted conjecture based on certain cases, but not in common; (6) generalizing the conjecture was the activities of conviction changing related to the conjecture resulted, that the conjecture was valid in general; (7) justifying the generalization was the stage of justifying the generalization made. Giving additional example was not adequate for justifying the generalization. It needed to involve some reasoning for explaining the conjecture, which intended to ensure others that the generalization made was valid.

Dealing with the problem, Polya (1973) differentiated problems to find from problem to prove. Problems to find aimed to find out particular objects fulfilling the condition by connecting data and unknown variable yet, whereas problems to solve aimed to point out the truth of a statement, whether it was true or false. Sriraman (2003) stated that the condition of problems included (1) conceptual task, (2) task which the subject actually enabled to comprehend by the prior learning of organizational task or originality, (3) task which could be accomplished by familiar stages, and (4) Task which confused the students, but it could still be accomplished. This current study used pattern generalizing problem.

Pattern generalizing was the activities of making general pattern based on specific examples. Such examples could be in the form of (a) graphic, (b) numeric, (c) verbal, and (d) algebraic (Janvier, 1987). In order to respond the research problem, the information to be told through particular cases was stated in linear pattern with graphic form. Specifically, some researchers saw pattern as particular ways driving onto algebra, for it was the underlined stages to construct the generalization which was the essence of mathematic (Zazkis & Lijedahl, 2002).

Many mathematics experts suggested that mathematics was called as “study about pattern” (Resnik, 2005; Tikerar, 2009). Studying about pattern was fundamental and needed to be taught as early as possible. NCTM (2000) recommended that students should participate within pattern activities since early, so that it was expected that they would enable to (1) generalize geometric and numeric pattern, (2) provide justification for their conjecture, (3) state pattern rules and function in verbal, table, and graphic. Generalizing pattern was not only stating some common rules and pattern order, but also stating such common rule pattern within symbols.

Thus, it was necessary to reveal indicator of the conjecturing process in solving the pattern generalizing problems. Recognizing the indicator would make us easier to comprehend the stages conducted by the students in accomplishing the task.

## **2 Method**

### **2.1 Subjek**

The subject of this study was 65 students in the eighth grade of Secondary School, consisting 32 students originated from SMP N 1 Malang, and 33 students originated from SMP N 3 Malang.

### **2.2 Instrument**

The primary instrument of this study was the researchers themselves, for they acted as the planner, data collector, data analysts, data estimator, and study reporters. The secondary instrument applied here were The Problem-Solving Task of Generalizing Pattern (TPGMP/ Tugas Pemecahan Masalah Generalisasi Pola) and interview guidelines.



TPGMP was intended to have some portraits related to the indicator of conjecturing process in solving the pattern generalizing problem. TPGMP which needed to be accomplished by the students was as follows.

Take a look into the patterns of the following first, second, and third picture!

Fig. 1                      Fig. 2                      Fig. 3

Find out the general formulation to determine the number of boxes at the- $n$  picture based on the constructed pattern! Explain the way you take to reveal the general formulation, please!

**Fig. 1.** Problem-Solving Task of Generalizing Pattern

The interview guidelines were applied as the reference when conducting interview. We conducted unstructured interview, which questions would be adjusted based on the condition itself.

### 2.3 Data Analysis

This study was qualitative with exploratory descriptive approach. The data collected by utilizing some instruments, consisting TPMGP and interview. After the subject accomplished TPMGP, they then had an interview in order to comprehend and clarify the conjecturing process based on what their answer sheet. In analyzing the data, there would be a set of activities including: (1) transcribing the data, (2) reducing the data, (3) codifying the data, and (4) revealing indicator of the conjecturing process by the students in accomplishing the problem-solving of pattern generalization.

## 3 Findings and Discussion

According to the students' answer sheets and the interview conducted toward all 65 subjects, those resulted indicator of conjecturing process in problem-solving of pattern generalizing as shown in the following table 1.

**Table 1.** Indicator of conjecturing process

THE STAGES OF CONJECTURING PROCESS	INDICATOR
Observing the case	Observing and counting the number of objects constructing the pattern such as: <ul style="list-style-type: none"> <li>• Observing and counting the number of the square at the down-left side up-right, the primary, the left and right without discerning the Black and White box .</li> <li>• Observing and counting the number of Black and White box separately</li> <li>• Observing and counting the number of the box without discerning the Black and the White box .</li> </ul>
Organizing the case	Implementing strategy to set the object constructing the pattern automatically, such as : <ul style="list-style-type: none"> <li>• Writing the pattern of numbering series</li> <li>• Listing or labelling in order to link 1st number and 1st picture , 2nd number and 2nd picture , 3rd number and 3rd picture, and so forth.</li> </ul>
Searching for and predicting the pattern	Observing certain objects both organized and non-organized ones, and considering the next objects which had not been recognized yet, such as: <ul style="list-style-type: none"> <li>• Counting the differentiation among the 1st, 2nd, 3rd picture, and considering the next objects.</li> <li>• Counting the distinction among the White box of picture 1, 2, 3 and considering the next objects.</li> <li>• Writing down the symbols indicating the common pattern such as the underline, the round, or other forms, and counting the distinction of the 1st, 2nd, 3rd picture, also considering the next objects.</li> </ul>
Formulating the conjecture	Making a statement dealing with all possibilities of the case, based on the empirical evidence, but had not been validated yet, such as: <ul style="list-style-type: none"> <li>• Stating the pattern or formulation of the <math>n</math>-th picture which was valid</li> <li>• Stating the <math>n</math>-th formulation of the Black boxes <math>2n + 1</math>, the White boxes <math>2n = 2</math>, and the <math>n</math>-th formulation of the Black and the White boxes : <math>(2n + 1) + (2n + 2)</math></li> <li>• Stating the general formulation or the number of the <math>n</math>-th box = <math>4n + 3</math></li> </ul>
Validating the conjecture	Validating the conjecture by considering the conformity of particular objects in order to determine the truth of the conjecture revealed, such as: <ul style="list-style-type: none"> <li>• Validating particular case in order to determine the truth of conjecture revealed, for instance, for the 1st, 2nd, 3rd picture, and ...</li> <li>• Sketching the next object representing the next pattern which might still be captured in order to determine the truth of the conjecture revealed, for instance, for the 4th, 5th, 6th picture, and so forth...</li> </ul>
Generalizing the	The changing conviction related to the conjecture revealed that it

conjecture	<p>prevailed generally, such as:</p> <ul style="list-style-type: none"> <li>• Convincing the pattern or the formulation of the-n picture which prevailed in general.</li> <li>• Convincing the-n formulation of the Black square <math>2n + 1</math>, White square <math>2n + 2</math> and the-n formulation of the Black and White boxes <math>(2n + 1) + (2n + 2)</math> which prevailed in general.</li> <li>• Convincing the general formulation or the number of the-n square <math>= 4n + 3</math> which prevailed in general.</li> </ul>
Justifying the generalization	<p>Reasoning which explained the generalization of the conjecture that aimed to ensure people which its generalization was true, such as:</p> <ul style="list-style-type: none"> <li>• Justifying the generalization based on particular cases.</li> </ul>

15 of 65 students who had accomplished TPGMP successfully constructed the conjecture in symbolic manner. They could be classified into 3 categories based on the observation of the case, which was the basic of constructing the conjecture, as shown in the following table 2.

**Table 2.** Subject Classification based on Observing the case

OBSERVING THE CASE	SUBJECT
Observing and counting the number of the square at the down-left side up-right, the primary, the left and right without discerning the Black and White boxes ..	S3, S4, S5
Observing and counting the number of Black and White boxes separately	S6, S7, S8, S9, S10
Observing and counting the number of the box without discerning the Black and the White boxes .	S1, S2, S3, S11, S12. S13, S14, S15

Based on table 2, the conjecturing process dealing with the problem-solving of pattern generalization would be analyzed and discussed which were represented by S3, S6, and S1. The results of the analysis and the discussion were based on the stages including: observing cases, organizing cases, searching for and predicting patterns, formulating a conjecture, validating the conjecture, generalizing the conjecture, justifying the generalization, as follows.

### 3.1 Observing cases

In generalizing the pattern of Subject S3, S6, and S1, it had recognized that 1st, 2nd, and 3rd picture formed a pattern. In order to reveal the general formulation of counting the number of square in horizontal and vertical parts without discerning the Black and the White boxes of the 1st, 2nd, and 3rd picture. The following was a part of interview toward S3:

- P 04 : What did the first thing come into your mind when you read this task?  
 S3 04 : I initially saw this (by pointing out the pattern of the boxes). The horizontal were 5 and the vertical were 2. Then, the one which lied under was 1 and which lied up was also 1. So, it must be only 2 standing.

Subject S6 viewed the case by observing and counting the number of the Black and the White boxes of the 1st, 2nd, and 3rd picture, separately. The following was a part of interview toward S6.

- S607 I counted this separately. I counted the number of the Black and the White (by pointing out the pictured pattern)  
 P 08 What did you mean?  
 S608 Let's take a look; the 1st picture had 3 black boxes, and 4 white boxes. The 2nd picture had 5 black boxes and 6 white boxes. The 4th picture had 5 black boxes and 8 white boxes, and so forth...

Subject S1 viewed the case by observing and counting the number of the box without discerning the black and the white ones of the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> picture. The following was a part of the interview toward S1.

- P 03 What did the first thing come into your mind when you read this task?  
 S103 You meant the difference, did you?  
 P 04 What did you mean by the difference?  
 S104 I meant the difference of the pictures displayed, Sir. The first one was 7, the second was 11, and the third was 15 (by pointing out the boxes). So, the difference was 4, the next one was also 4, and so forth.

### 3.2 Organizing cases

Based on the number of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> picture, S3 organized the case by making a list in order to link 1<sup>st</sup> number and 1<sup>st</sup> picture; 2<sup>nd</sup> number and 2<sup>nd</sup> picture; and 3<sup>rd</sup> number and 3<sup>rd</sup> picture. It was also emphasized by the students' answer dealing with the given problem-solving task of pattern generalization as follows.

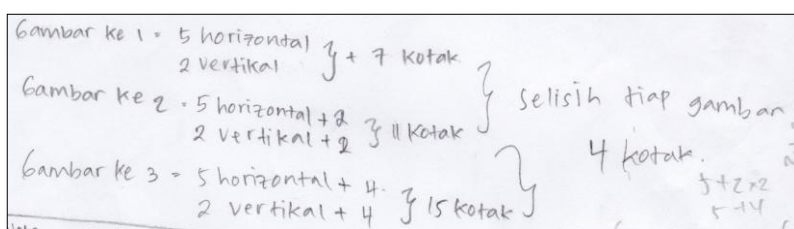


Fig. 2. The result of the task accomplished by S3

S6 organized the case and ordered the pattern of numbering series for the black boxes (3, 5, 7, 9) and the White ones (4, 6, 8, 10). It was also emphasized by the stu-

dents' answers dealing with the given problem-solving task of pattern generalization as follows.

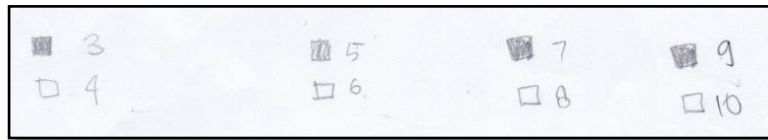


Fig. 3. The result of the task accomplished by S6

S1 organized the case by ordering the numbering series of the black and the white boxes which were 7, 11, 15. It was also emphasized by the result of the task done by S1 as follows.

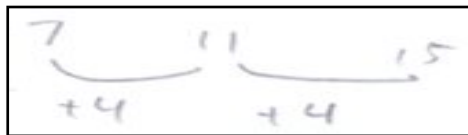


Fig. 4. The result of the task accomplished by S1

### 3.3 Searching for and predicting patterns

In searching for and predicting the pattern, S3 counted the difference between 2<sup>nd</sup> picture and 1<sup>st</sup> picture, 3<sup>rd</sup> picture and 2<sup>nd</sup> picture, and considered that the difference for the next picture was 4 boxes. It was also emphasized by the part of interview toward S307, S308, and the result of the task accomplished by S3 as follows.

S307 *For instance, given 1<sup>st</sup> pictures had 5 boxes, or the horizontal were 5, the vertical were 2. So, if we counted them all, then it would be 7 boxes. Next, given 2<sup>nd</sup> picture, if we added these 5 horizontal boxes with 2 others, then it would also be 7. So, (while pointing out the boxes of the pictures) if this was added by this then it would also be 7. If we took a look the initial ones, there was 1 box for the first and 1 box for the second. So, there must be 2 boxes for the initial of each picture. In sum, 2 added 2 was 4, 7 added 4 was 11, its number were similar to the 3<sup>rd</sup> picture. Thus, the difference among each picture was 4 boxes.*

P 08 *What did you mean by 4 boxes?*

S308 *Let see, 1<sup>st</sup> picture had 7 boxes, 2<sup>nd</sup> one had 11, and 3<sup>rd</sup> one had 15, and so forth. Thus, the difference among each picture was 4 boxes,  $11 - 7 = 15 - 11 = 4$ .*

S6 searched for and predicted the pattern by counting the difference between 2<sup>nd</sup> picture and 1<sup>st</sup> one, the difference between 3<sup>rd</sup> picture and 2<sup>nd</sup> one. The difference between each black was 2 and the white one was 2. S6 also considered the next object, 4<sup>th</sup> picture. It was emphasized by the part of interview toward S6 as follows.

S610 The difference between 1<sup>st</sup> picture, 2<sup>nd</sup> picture and 3<sup>rd</sup> picture.

P11 What did you mean?

S611 As like the difference between the black boxes, I wondered about the number of its difference. If it was 2, tha it was also 2 for the white (by pointing out his answer)

S1 searched for and predicted the pattern by looking into the difference between 2<sup>nd</sup> picture and 1<sup>st</sup> picture, 3<sup>rd</sup> picture and 2<sup>nd</sup> picture, then considered that the next picture would be added by 4, and so forth. It was emphasized by the part of interview conducted toward S104 and the result of the task done by S1 in 4<sup>th</sup> picture.

### 3.4 Formulating a conjecture

In formulating a conjecture, S3 viewed the pattern of horizontal and vertical boxes in 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> picture. S3 formulated the conjecture in order to determine the number of boxes of the  $-n$  picture that equaled to  $(5 + n) + (2 + n)$ . Then, S3 validated the conjecture by viewing the conformity toward the number of the box in 9<sup>th</sup> picture. S3, furthermore, stated that the  $-n$  formulation was false. After considering that the conjecture formulated was false, S3 then tried to formulate the new one:  $(5+(n-1))+(2+(n-1))$ . Moreover, S3 made a validation by viewing the conformity of the formulation dealing with 2<sup>nd</sup> picture, then stated that it was also false. S3, then, realized that only one of the additions from both horizontal and vertical boxes  $(n-1)$  was proper. Since both them were joint,  $(n - 1)$  should be multiplied by 2. Thus, the general formulation was  $(5 + (n - 1) \times 2) + (2 + (n - 1) \times 2) = 4n + 3$ . S3 validated the conjecture revealed by counting 1<sup>st</sup> 2<sup>nd</sup>, and then viewed the conformity of its formulation toward 4<sup>th</sup> and 5<sup>th</sup> picture.

$$(5 + (n-1) \times 2) + (2 + (n-1) \times 2)$$

5 + 0 + 2 + 0 = 7

5 + 2 + 2 + 0 = 9

Fig. 5. The result of the task accomplished by S3

S6 formulated the conjecture by viewing the relation between 1<sup>st</sup> picture and the number of black boxes added by the white ones in 1<sup>st</sup> picture, 2<sup>nd</sup> picture and the number of the black boxes added by the white ones, and so forth. By looking into its relation, S6 formulated the conjecture in order to determine the number of the black boxes in the  $-n$  picture =  $2n + 1$ , for the  $-n$  of the white ones =  $2n + 2$ . Then, S1 validated the conjecture by viewing the conformity of the total boxes in 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture. S1 also counted the number of boxes in 4<sup>th</sup>, 5<sup>th</sup>, up to 100<sup>th</sup> picture. The following was the result of the students' task dealing with problem-solving of pattern generalization.

$ke-1 = 3 + 4$   
 $ke-2 = 5 + 6$   
 $ke-3 = 7 + 8$   
 $ke-4 = (2 \times 4 + 1) + (2 \times 4 + 2)$   
 $ke-n = (2n + 1) + (2n + 2)$   
 $ke-5 = (2 \times 5 + 1) + (2 \times 5 + 2)$   
 $ke-5 = 11 + 12$

Fig. 6. The result of the task accomplished by S6

In order to formulate the conjecture, S1 viewed that the addition between 1<sup>st</sup> and 2<sup>nd</sup> picture was 4 boxes, and between 2<sup>nd</sup> and 3<sup>rd</sup> one was also 4. By realizing such addition, S1 formulated the  $n$ -th formulation of the conjecture to determine the number of boxes for the  $n$ -th picture =  $n + 4$ . S1, then, validated the conjecture by viewing the conformity toward the total boxes of 4<sup>th</sup> and 3<sup>rd</sup> picture, then stated that its  $n$  formulation was false. It could be seen from the following interview.

S108 *It was added by 4 boxes, then, it was added again by 4 boxes, and so forth. But, if we took a look one more time, I preferred that the  $n$  was 4 respectively, thus it could be 8. It would be different if we took the  $n$  as 3 then added by 4, which resulted in 7, thus it became false.*

After realizing that the conjecture formulated was false, S1 tried a new strategy in order to formulate the conjecture. The strategy was by searching for the initial number before it was added by 4 (for the patten was always added by 4). S1 searched for the initial number by reducing the number of boxes in 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture. It was 4 boxes for each picture. The result was 3, 7, 11 respectively. S1 realized that the initial number sought had not been appropriate yet since it was still different. Furthermore, S1 applied the new strategy by searching for the initial number before it was added by 4, multiplied by  $n$ . for 2<sup>nd</sup> picture,  $2x + (4 \times 2) = 11$ , so  $x = 3$ , for 3<sup>rd</sup> picture,  $x + (4 \times 3) = 15$ , so  $x = 3$ . Thus, the initial number before it was added by 4 was 3. After finding out the number, S1 formulated the conjecture of general formulation:  $3 + (4 \times n)$ , and validated the conjecture based on the number of boxes which had been found. This was shown by some parts of interview and the following task accomplished by the students.

$G_2 = x + (4 \times n)$   
 $11 = x + (4 \times 2)$   
 $11 = x + 8$   
 $11 - 8 = x$   
 $3 = x$

$G_3 = x + (4 \times n)$   
 $15 = x + (4 \times 3)$   
 $15 = x + 12$   
 $15 - 12 = x$   
 $3 = x$

Fig. 7. The result of the task accomplished by S1

### 3.5 Validating the conjecture

In validating the conjecture, S3, S6, and S1 validated it with particular case in order to determine the truth of the revealed conjecture, by viewing the conformity of the formulation toward 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture. They also sketched the next object which represented the next pattern that might still be reachable to determine the truth of the revealed conjecture, such as for 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> picture.

### 3.6 Generalizing the conjecture

After validating the conjecture, S3, S6, and S1 believed that the- $n$  pattern of the black boxes:  $2n + 1$ , the- $n$  pattern of white box:  $2n + 2$ , and the- $n$  formulation of both black and White boxes:  $(2n + 1) + (2n + 2)$ , were generally valid.

### 3.7 Justifying the generalization

S3 justified the generalization with intention to ensure people that the conjecture revealed was true by demonstrating particular example as what had been demonstrated while validating the conjecture. It could be shown by the following part of interview.

P 15 *So, how to explain to others that this formulation revealed was true?*

S315 *I would show the examples, Sir*

P 16 *How could it be?*

S316 *For instance, given 1<sup>st</sup> picture:  $(5 + (1 - 1) \times 2) + (2 + (1 - 1) \times 2) = 7$ . It was true. Given 2<sup>nd</sup> picture:  $(5 + (2 - 1) \times 2) + (2 + (2 - 1) \times 2) = 11$  it was true. Given 3<sup>rd</sup> picture:  $(5 + (3 - 1) \times 2) + (2 + (3 - 1) \times 2) = 15$ , it was true, given 4<sup>th</sup> picture:  $(5 + (4 - 1) \times 2) + (2 + (4 - 1) \times 2) = 19$ , it was true and so forth.*

S6 justified the generalization with intention to ensure people that the conjecture revealed was true by explaining how to reveal the formulation and counting the total boxes as what had been conducted while validating the conjecture. It could be shown by the following part of interview.

P 19 *So, how to explain to others that this formulation revealed was true?*

S619 *I would explain how I revealed and counted the total number of the black and the white boxes (while pointing out his answer).*

S1 justified the generalization with intention to others that the conjecture revealed was true by particular examples. S1 counted the total boxes of 4<sup>th</sup> picture:  $n = 3 + (4 \times 4) = 19$ , and 3<sup>rd</sup> picture had 19 as well. According to such examples, S1 justified the generalization revealed. This could be shown by the following part of interview:



*P 15 Why could you be so sure with the answer?*

*S115 Because if it was taken into account to search for 4<sup>th</sup> picture, then it must have been appropriate:  $n = 3 + (4 \times 4) = 19$ . 3<sup>rd</sup> picture also had 19 for the result. Thus, it was true for adding 4 boxes within each picture.*

In the stage of observing the case, there were 3 possibilities which would be conducted by the subject: observing and counting the number of boxes within the part of down-left, up-right, the primary, the left and right without discerning the black and the white boxes; observing and counting the number of the black and the white boxes separately; observing and counting the number of boxes without discerning the black and the white boxes. This was appropriate to Gestalt's theory dealing with observation: the closeness order, the closed-ness order, and the similarity order (Wertheimer, 1923). Furthermore, during the stage of organizing the case, the subject listed and labeled to link 1<sup>st</sup> number with 1<sup>st</sup> picture, 2<sup>nd</sup> number and 2<sup>nd</sup> picture, 3<sup>rd</sup> number and 3<sup>rd</sup> picture, and so forth. They also wrote the pattern of numbering series which referred to activities that might ease them to find out the pattern from the given problem.

Next, during the stage of searching for and predicting the pattern and formulating the conjecture, each subject gave a representation in various ways but meaningful for them along with their initial insight. This was appropriate to what were suggested by Steinbrig and Yerushalmy (2008) that the symbol of mathematic was the tools for codifying and describing the insight, and also communicating the mathematic insight. The subject successfully accomplished such stages.

At the stage of validating the conjecture, the subject validated the conjecture by particular object that had be recognized, and then sketched the next object which represented the next pattern which had not been recognized yet, but still reachable in order to determine the truth of the conjecture revealed. During this stage, there somewhat that was called as internal validation with the object which had already been recognized, and external validation with the object which had not been recognized yet.

Next, in generalizing the conjecture, there were 50 subjects who generalized the conjecture with non-symbolic manner. Generalizing the pattern was not adequate merely launched the general rule and the pattern order. It was also necessary to launched the general rules with symbol as well. This was in accordance to Caraher and Martinez (2008) who argued that the students did not only used notation or symbol, but they also represented and made certain mathematical reasoning, made a summary and generalization by their own way.

The last stage was justifying the generalization. In this stage, the subjects justified the generalization with intention to ensure people that the conjecture revealed was true by particular example whether it had already been recognized or not. In justifying the generalization, the subjects did similar activities as what they did in validating the conjecture.

## 4 Conclusion

Based on the findings and discussion above, it was necessary to comprehend the conjecturing process done by students. The indicator revealed in this study could stimulate further researches related to the conjecturing process.

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## Metacognitive Activities in a Conjecturing Process toward Problem Solving of the Pattern Generalization

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**Abstract.** This study aimed to identify metacognitive activities in a conjecturing process toward a problem-solving of the pattern generalization. The subject of this study was 6 students in the eighth grade of the secondary school. The data collection was conducted by giving certain a problem-solving task of pattern generalization to accomplish and having deeply interview to comprehend and clarify the metacognitive activities and the conjecturing process based on each subject task's response. These both activities were recorded audiovisually. The result of this study showed that the metacognitive of awareness, regulation, and evaluation existed during the conjecturing process by the students in such problem-solving task of the patterns generalization

**Keywords:** metacognitive activity, conjecturing process, problem solving, patterns generalization

### 1 Introduction

Metacognition had a tight relation with a problem-solving. It referred to a necessary aspect in solving a problem by which metacognition could assist the solver in determining the goal and conducting particular actions to reach the goal while solving the problem (Biryukov, 2014; Kapa, 2002; Wilson & Clarke, 2002; Katranci & Sengul, 2012; Kuzle, 2013; Wismath, Orr, & Good, 2014). King, Goodson, & Rohani (1993) also suggested that metacognitive activities existed when someone met particular problem that had not been recognized yet, the uncertainty, questions, and dilemma.

Some researchers had already studied such metacognitive activities and the problem-solving (Biryukov, 2014; Kapa, 2002; Wilson & Clarke, 2002; Katranci & Sengul, 2012; Kuzle, 2013; Wismath, Orr, & Good, 2014). Kapa (2002) described the function of metacognitive linked to the six stages of a problem-solving: (a) identifying the problem, (b) representing the problem, (c) planning the solution of the problem, (d) conduction the predetermined solution, (e) evaluation, (f) feedback. Art & Armour-Thomas (1992) distinguished cognitive activities from metacognitive activities.

adfa, p. 1, 2011.

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ties of an individual within each procedure collectively: (a) reading-cognitive, (b) comprehending-metacognitive, (c) analyzing-metacognitive, (d) exploring- cognitive or metacognitive, (e) planning-metacognitive, (f) conducting- cognitive or metacognitive, (g) verifying - cognitive or metacognitive , (h) observing and listening

In recent years, study about metacognitive activities in a problem-solving context of mathematics generally tended to learn activities identified as metacognitive awareness, regulation, and evaluation (Wilson & Clarke, 2002; Magiera & Zawojewski, 2011). Wilson dan Clarke (2002, 2004) suggested that there were three primary elements of metacognitive, those were: awareness, regulation, and evaluation. Metacognitive awareness was seen as the confession of a problem that was being in the process of finding the solution, the strategy which could be considered to respond the problem, and the relation between the prior knowledge and the specific ones needed to solve the given problem (Wilson & Clarke, 2002). Metacognitive evaluation was seen as the decision made by the solver dealing with their own thought, the limitation of their thought toward the problem, the limitation of individual's strategy in order to solve particular problem, which might become a model that someone could make a judgment about their effectiveness of thinking or the strategic options they made (Wilson & Clarke, 2002). Metacognitive regulation referred to individual's knowledge of selecting and implementing particular strategy including how and why they implemented particular strategy dan used particular skill such as planning, self-introspection, and determination of goal (Wilson & Clarke, 2002). Magiera & Zawojewski (2011) concerned their study on identifying and characterizing social-based context and self-based context related to metacognitive activities codified as awareness, regulation, and evaluation.

Furthermore, the problem-solving and conjecturing were both interrelated fundamental aspects for mathematical activities (Cañadas, Deulofeu, Figueiras, Reid, & Yevdokimov, 2007; NCTM, 2000). Both were interrelated for each other. NCTM (2000) emphasized that problem-solving was defined as being involved in particular task which solution had not been found yet. In addition, it was stated that conducting mathematics referred to getting involved in discovering, whereas conjecture was the primary way for such discovering activities. Stating the relation between conjecturing process and metacognitive activities, Lin (2003) mentioned that study about metacognitive activities and conjecturing process in problem-solving still needed to be examined by researcher in further studies.

One familiar type of conjecturing in mathematical problem-solving was empirical induction based on a finite number of discrete cases with some stages consisting of observing the case, organizing the case, searching for and predicting the patterns, formulating the conjecture, validating the conjecture, generalizing the conjecture, and justifying the generalization (Cañadas, Deulofeu, Figueiras, Reid, & Yevdokimov, 2007). Conjecturing process was often found in particular problem involving number, that the observed patterns were consistent.

The explanation of the seven conjecturing process were: (1) Observing case referred to the initial treats toward certain cases of the promoted problems; (2) organizing case referred to activities involving the implementation of strategy to ease the task for particular cases. The most common strategy in this stage was data-listing and data-

ordering; (3) searching for and predicting pattern was activities when one was observing repeated and regular circumstance, she/he naturally imagined that the pattern might be valid for the latter unknown cases yet, (4) formulating the conjecture was constructing a statement about all possibilities of the case, based on empirical evidence, but with hesitancy. In short, conjecture was un-validated statement, yet; (5) validating the conjecture referred to the activities conducted in order to justify the resulted conjecture based on certain cases, but not in common; (6) generalizing the conjecture was the activities of conviction changing related to the conjecture resulted, that the conjecture was valid in general; (7) justifying the generalization was the stage of justifying the generalization made. Giving additional example was not adequate for justifying the generalization. It needed to involve some reasoning for explaining the conjecture, which intended to ensure others that the generalization made was true.

Based on the above description, metacognitive activities linked to a problem-solving. Both problem-solving and conjecturing process were two elements that was interrelated for each other, thus, both them were necessary for inquiring the metacognitive activities in conjecturing process toward the problem-solving of patterns generalization.

## **2 Method**

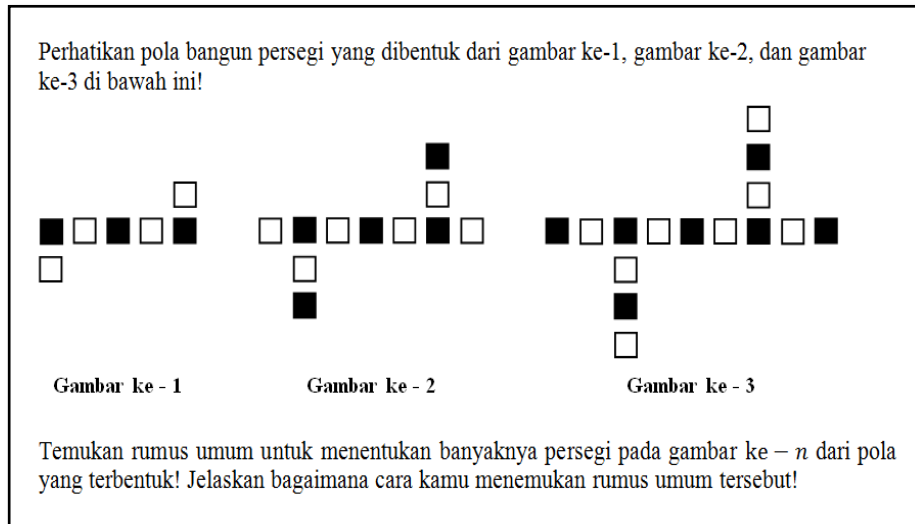
### **2.1 Subjek**

The subject of this study was 6 students in the eighth grade of secondary school, consisting of 6 students originated from SMPN 1 Malang

### **2.2 Instrument**

There were two types of instruments utilized in this study. Those were primary and secondary instruments. The primary instrument was the researchers themselves, who acted as the planner, data collector, data analysts, data estimator, and study reporters. The secondary instrument applied here were The Problem-Solving Task of Patterns Generalization (TPGMP/ Tugas Pemecahan Masalah Generalisasi Pola) and interview guidelines

The Problem-Solving Task of Patterns Generalization was intended to have some portraits related to metacognitive activities by the students in conjecturing process toward a problem-solving of patterns generalization. TPGMP which needed to be accomplished by the students was as follows.



**Fig. 1. The Problem-Solving Task of Generalizing Pattern**

The interview guidelines were applied as the reference when conducting interview. We conducted unstructured interview, which predetermined questions would be adjusted based on the condition itself. The interview was conducted after the subjects accomplished the given problem-solving task.

### 2.3 Data Analysis

In analyzing the data, there were a set of activities conducted by the researchers, including: (1) transcribing the data of interview, (2) reducing the data which involved describing, selecting the primary points, focusing on important aspects, throwing away the unnecessary, and organizing the raw materials collected in real field, (3) codifying the data which involved taking the written data collected, segmenting each sentence into categories, labeling such categories with specific terms, (4) identifying metacognitive activities in a conjecturing process toward a problem-solving of patterns generalization, and (5) making conclusion.

Analyzing metacognitive activities applied metacognitive descriptive by Magiera & Zawojewski (2011) as follows:

**Table 1.** Description of Metacognitive Activities

Code	Descriptions
<i>Metacognitive Awareness</i>	Self-statement and others' mathematical thought showed some ideas about: <ul style="list-style-type: none"> <li>• What individual knew (knowledge for particular task, relevant mathematics insight, personal problem-solving strategy)</li> <li>• Where individual were in the process of problem-solving</li> <li>• What to do in need, what have done, or what could do</li> </ul>
<i>Metacognitive Regulation</i>	Self-statements or others' mathematical thought, showed: <ul style="list-style-type: none"> <li>• Planning strategy</li> <li>• Determining goal</li> <li>• Selecting the strategy of problem-solving</li> </ul>
<i>Metacognitive Evaluation</i>	Self-statement and others' mathematical thought showed some ideas about: <ul style="list-style-type: none"> <li>• Effectiveness and the limitation of the thought</li> <li>• Effectiveness of the chosen strategy</li> <li>• Result assessment</li> <li>• Assessment toward the difficulty of the problem</li> <li>• Assessment of the progress, capability, and understanding</li> </ul>

### 3 Results And Discussion

Based on the students answer sheet dealing with the problem-solving of patterns generalization and the interview conducted toward 6 subjects which resulted in symbolic manner, we acquired some data that metacognitive activities existed in conjecturing process while the students were accomplishing the task, including awareness regulation, and evaluation. The type of metacognitive activities in such conjecturing process could be seen in the following table 1.

**Table 2.** Metacognitive Activity in Conjecturing Process

Subject	Metacognitive activities in the stages of conjecturing process						
	1	2	3	4	5	6	7
S1	A	-	A	A, R, E	E	-	-
S2	A	-	A	A, R, E	E	-	-
S3	A	-	A	A, R, E	E	-	-
S4	A	-	A	A, R, E	E	-	-
S5	A	-	A	A, R, E	E	-	-
S6	A	-	A	A, R, E	E	-	-

Note:

- The stages of conjecturing process were: (1) Observing case; (2) organizing case; (3) searching for and predicting patterns; (4) formulating the conjecture; (5) validating the conjecture; (6) generalizing the conjecture; (7) justifying the generalization
- Metacognitive activities: A=Awareness, R=Regulation, E=Evaluation



Among 6 subjects of this study, 2 subjects were described: S1 and S6. The description was related to metacognitive activities in conjecturing process toward the problem-solving of patterns generalization as follows.

### 3.1 Subject S1

In generalizing patterns, S1 had recognized that 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture formed a pattern. For finding out the general formulation about the number of boxes in the  $n$ -picture, S1 initially observed and counted the total boxes without discerning the black and the white ones. The following was a part of interview conducted toward S1 and the metacognitive activities done by the subject.

*P 03 What did the first thing come into your mind when you read this task?*

*S103 The difference, Sir*

*P 04 What did you mean by the difference?*

*S104 I meant the difference of the pictures displayed, Sir. The first one was 7, the second was 11, and the third was 15 (by pointing out the boxes). So, the difference was 4, the next one was also 4, and so forth. (Awareness)*

Based on the number of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> picture, S1 organized the case by ordering a series of numbering respectively. Then, S1 searched for and predicted patterns by viewing the difference between 2<sup>nd</sup> and 1<sup>st</sup> picture, 3<sup>rd</sup> and 2<sup>nd</sup> picture; and then thought that the next picture should be added by 4, respectively. This was emphasized by a part of interview toward S104 and the students' problem-solving task as follows.



**Fig. 2.** The result of the task accomplished by S1

For formulating the conjecture, S1 viewed the addition between 1<sup>st</sup> and 2<sup>nd</sup> picture was 4, as well as between 2<sup>nd</sup> and 3<sup>rd</sup> picture. Viewing such addition, S1 formulated the conjecture to determine the number of boxes within the  $n$ -picture =  $n + 4$ . S1, then, validated the conjecture by viewing the conformity of the number of boxes within 4<sup>th</sup> and 3<sup>rd</sup> picture, and mentioned that formulation of its- $n$  was false. The following was a part of interview conducted toward S1.

*P 07 Ow, so what did you mean by this? (Pointing out the result)*

*S107 It was false. It was mistyped.*

*P 08 what did you mean?*

*S108 this should be added by 4, added by 4 again, added by 4 again, and so forth. But, when we took a look one more time, it seemed to be false (Awareness). Intended to see the- $n$  as 4, in respective manner, so it would be 8. It would be*

*different if we took the- $n$  as 3 then added by 4, which resulted in 7, thus it became false (Evaluation)*

After realizing that the conjecture formulated was false, S1 tried to apply a new strategy to formulate the conjecture, which was searching for the initial number before it was added by 4 (as the pattern was always added by 4). S1 searched for the initial number by reducing the number of boxes in 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture. It was 4 boxes reducing for each picture. The result was 3, 7, 11 respectively. S1 realized that the initial number sought had not been appropriate yet since it was still different. It could be shown by a part of interview conducted toward the students in accomplishing such problem-solving task related to patterns generalization as follows.

*P 09 ow... I see. If you knew that it was false, (while pointing out the result), then, what did you immediately think after that?*

*S109 I attempted to find out which initial number before it was added by 4 (Regulation)*

*P 10 What did you mean?*

*S110 for instance, this 2<sup>nd</sup> picture had 11 boxes, it was 7 before it was added by 4, thus it was fail (Evaluation)*

*P 11 What did you mean by fail?*

*S111 the initial number for each picture was 3, 7, 11. It indicated that it was false (by pointing out his result)*

**Fig. 3.** The result of the task accomplished by S1

S1, then, applied the new strategy, searching for the initial number before it was added by 4 times  $n$ . for 2<sup>nd</sup> picture,  $x + (4 \times 2) = 11$  so,  $x = 3$ , for 3<sup>rd</sup> picture,  $x + (4 \times 3) = 15$ , so  $x = 3$  became the initial number before it was added by 4 times  $n$  was 3. After finding out the initial number, S1 formulated the conjecture of general formulation:  $3 + (4 \times n)$  and validated the conjecture based on the number of boxes that had already recognized. This could be shown from a part of interview conducted by the students and their task accomplishment as follows.

*P 11 So, what was your next step?*

*S111 I searched the initial number before it was added by 4 times  $n$ . 2<sup>nd</sup> picture was equal to  $x + (4 \times 2) = 11$ , so  $x = 3$ . And 3<sup>rd</sup> picture was equal to  $x + (4 \times 3) = 15$ , so  $x = 3$ . Hence the initial number before it was added by 4 times  $n$  was 3. That is, the general formulation was  $4n + 3$  (evaluation)*

*P 12 4 times  $n$ , what did you mean by that?*

- S112 *let's see, the difference between the initial number and 7 was 4, the difference between 7 and 11 was 4, the difference between 7 and 15 was 8. That is, the range from 7 up to 15 was the two-ply of 4, the difference between the initial number and 15 was the triple of 4. Thus, it was the third of n.*

Fig. 4. The result of the task accomplished by S1

S1 justified the generalization with intention to ensure people that the conjecture revealed was true by particular examples. S1 counted the number of boxes within 4<sup>th</sup> picture:  $n = 3 + (4 \times 4) = 19$  and 3<sup>rd</sup> picture also had similar result after it was added by 4. Based on the example, S1 justified the generalization revealed. This could be shown by the following part of interview:

- P 15 *Ok. So, how could you explain to others that this formulation revealed was true?*
- S115 *I would show the conformity among 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture, and since it had been correct if it was used for counting the 4<sup>th</sup> picture:  $n = 3 + (4 \times 4) = 19$ . 3<sup>rd</sup> picture would have similar result when it was added by 4. It indicated that the formulation was true.*

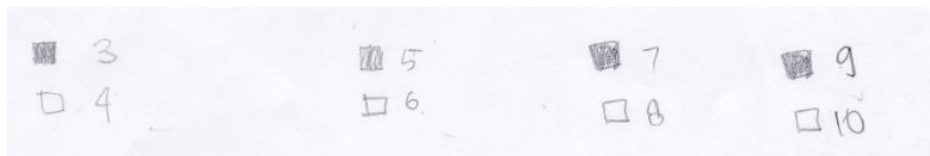
### 3.2 Subject S6

In generalizing patterns, S6 had realized that 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture formed a pattern. In order to reveal the general formulation of the total boxes in the  $n$ -picture, S6 firstly observed and counted the number of black boxes and white boxes separately. The following was the part of interview toward S6.

- S607 *I counted this one by one. So, how many the black ones were, how many the white ones were, how many both the black and the white were (by pointing out the pictured patterns) (Awareness)*
- P 08 *What did you mean?*
- S608 *Let's take a look; the 1<sup>st</sup> picture had 3 black boxes, and 4 white boxes. The 2<sup>nd</sup> picture had 5 black boxes and 6 white boxes. The 4<sup>th</sup> picture had 5 black*

*boxes and 8 white boxes, and so forth...*

Based on the total boxes within 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture, S6 organized the case by ordering the pattern of numbering series. S6, then, searched for and predicted patterns by viewing the difference between 2<sup>nd</sup> and 1<sup>st</sup> picture, 3<sup>rd</sup> and 2<sup>nd</sup> picture. The difference was 2 for each black and white box. S6 also considered the next object, 4<sup>th</sup> picture. This was emphasized by the interview conducted by S608 and the students result of the given task as follows.



**Fig. 5.** The result of the task accomplished by S6

In order to formulate the conjecture, S6 viewed the relation between 1<sup>st</sup> picture and the number of black boxes added by the white ones within the picture, 2<sup>nd</sup> picture and the number of black boxes added by the white ones within the picture, and so forth. by viewing such relation, S6 formulated the conjecture to determine the number of black boxes within the  $n$ -picture  $n = 2n + 1$ , for the white ones,  $n = 2n + 2$ . S6, then validated the conjecture by viewing the conformity of the number of boxes within 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> picture, and counted 4<sup>th</sup>, 5<sup>th</sup>, ... up to 100<sup>th</sup> picture. The following was a part of interview conducted toward S6 and the students' task accomplishment.

- S614 Hemppp..what I meant is...we needed to find out the-n pattern, don't we?.here, we needed to count the furthest pattern as well, such as tens, hundreds, thousands, don't we? (awareness). Thus, we needed to see the relation among each picture that's why, I concluded this  $3 \times 2 = 6$ ,  $6+1=7$ ,  $3 \times 2 = 6$ ,  $6+2=7$  so, here, if 2<sup>nd</sup> picture is  $2 \times 2 = 4$ ,  $4+1=5$ , this would be  $2 \times 2 = 4$ ,  $4+2=6$  (Regulation)
- P 15 *Then, how was the next?*
- S615 *Let's try to find out 4<sup>th</sup> picture.*
- P 18 *Why were you so sure with your answer?*
- S618 Because I had counted 4<sup>th</sup> and 5<sup>th</sup> picture. Then, I fitted to 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> pictures. I did also count the furthest as well, like 100<sup>th</sup> and the result was true (Evaluation).

$$\begin{aligned}
 ke-1 &= 3 + 4 \\
 ke-2 &= 5 + 6 \\
 ke-3 &= 7 + 8 \\
 ke-4 &= (2 \times 4 + 1) + (2 \times 4 + 2) \\
 ke-n &= (2n + 1) + (2n + 2) \\
 ke-5 &= (2 \times 5 + 1) + (2 \times 5 + 2) \\
 ke-5 &= 11 + 12
 \end{aligned}$$

**Fig. 6.** The result of the task accomplished by S6

S6 justified the generalization with an intention to ensure people that the conjecture revealed was true by explaining how to reveal the formulation and to count the number of boxes as what had been done while validating the conjecture. This could be shown by this following interview.

- P 19 *Ok. So, how did you explain to people that the formulation revealed was true?*
- S619 *I would explain how I got this and counted the number of boxes, both black and white, like this (by pointing out his result).*
- P 19 *Ok. Terus bagaimana cara nya adik menjelaskan pada orang lain bahwa rumus yang dihasilkan ini benar.*
- S619 *Saya akan menjelaskan bagaimana cara saya mendapatkan dan menghitung jumlah persegi hitam dan putih seperti ini (sambil menunjuk hasil pekerjaannya).*

At the phase of pattern generalization, S1 and S6 had realized that 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> pictures constructed a pattern which they got its materials of the pattern when they were 7<sup>th</sup> graders. This finding was in a line with the Wilson and Clarke's (2002) description of metacognitive awareness that awareness involved (1) What individual knew (knowledge for particular task, relevant mathematics insight, personal problem-solving strategy; (2) certain condition Where individual were in the process of problem-solving; (3) What to do in need, what have done, or what could do. Furthermore, in the phase of formulating the conjecture, both S1 and S6 conducted metacognitive regulation. S1 tried new strategy to formulate the conjecture: finding out the initial number before it was added by 4, thus, he/she reveal the general formulation:  $3 + (4 \times n)$ . S6 formulated the conjecture by viewing the relation between the number of black boxes and white boxes. By considering such relationship, S6 formulated the conjecture to determine the number of black boxes in the  $n$ -picture:  $n = 2n + 1$ , and for the white boxes:  $n = 2n + 2$ . The strategy employed by S1 and S6 were in accordance to Wilson and Clarke (2002) that metacognitive regulation referred to individual's insight of selecting and employing the strategy, including how and why they used particular strategy. Magiera and Zawojewski (2011) also suggested that indicator of metacognitive regulation included: (a) making a plan, (b) planning a strategy, (c) selecting particular problem-solving strategy, (d) altering the way which had already been conducted.

Going to the next stage, validating the conjecture, S1 and S6 conducted metacognitive activity that was evaluation. In this phase, S1 viewed the conformity of the total boxes at 3<sup>rd</sup> and 4<sup>th</sup> picture. After conducting such evaluation, S1 concluded that the formulation of the  $n$  was false. S6 validated the conjecture by viewing the conformity of the total boxes at 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> pictures, and then counted the total boxes at 4<sup>th</sup>, 5<sup>th</sup> ...up to 100<sup>th</sup> picture. Validating the conjecture conducted by S1 and S6 was intended to see the conformity of particular objects in order to determine the truth of the conjecture revealed. Magiera and zawojewski (2011) also suggested that the indicator of metacognitive evaluation included: (a) the problem-solver checked the answer. (b) Assessed the result, (c) assessing whether the result was true, (d) assessing whether it had been well-conducted. Validating the conjecture was conducted by viewing the conformity of particular objects in order to determine the truth of the conjecture revealed.

#### 4 Conclusions

Based on the results and discussion, it could be concluded that metacognitive activities such as awareness, regulation, and evaluation did exist within the conjecturing process and assist the problem-solver to solve the pattern generalization. Metacognitive awareness appeared on the stage of observing cases, searching for and predicting patterns, and formulate conjecture. Metacognitive regulation appeared on the stage of formulating the conjecture, and metacognitive evaluation appeared on the stage of formulating the conjecture and validating the conjecture.

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## MULTICULTURAL LEARNING MODEL

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### ABSTRACT

Multicultural learning model is a solution of cultural based problems. Through the model we hope there will form a new generation which now their culture. Generation that did not continue activities which are source of cultural conflicts such as illegal logging and others which harm environment. Cultural learning is designed by compiling productive activities in the community into a learning-materials that students could have basic experience to work which is fit with the culture of local community and has character. Implementation of this model at school was using local content learning session. Learning materials which is produced could enriched learning materials at School.

**Keyword:** Multicultural learning characters

### Background

Limited formal jobs available and limited experience has endorsed people to do high risk activities/work for fulfilling their needs. In this context there should be appreciation on their choices for doing the work. But such work has potency of cultural conflict. For example in illegal mining activities which are really dangerous work for miners but they do since they have to survive and do not depend on government.

Illegal mining is high risk work for miners and also destroying the nature and polluting the environments. There are multi-ethnic (different races, different culture, different believes as well) of workers living in small area. The social conflicts related to illegal mining are often reported. The local government has been trying to solve it but stopping the activities/ban illegal mining is often trigger unrest. The long term solution is needed to solve it.

Multicultural learning model offers solution by “discontinuing generation that has chosen risk work” and at the same time developing “new generation which has, knowledge, attitude, skills on various local and regional potencies. With this skill, the new generation will be agent of change in their own family, to enhance their social responsibility for keeping himself, the family and environment. With their strong commitment at least not to be part of risk job.



By understanding culture of people and their environment, some generations with different race, religion, nations will be together in local cultural homogeneity.

### **The Results And Benefits**

Outcome of this study shows that multicultural learning model; (1) implemented as one subject which is local content (mulok), (2) the core of the subject is to understand local values, to know cultural, and to learn how to grow plant for environment and science, and (3) learning format is presentation, practice/field work and reading.

The overview of multicultural learning are as follows; (1) implemented at each level (from 1 to 6), (2) implemented every Saturday, (3) cultural values that, (4) scope of cultural themes are: (a) mining area, (b) beach, (c) panoramic landscape in the border, and (d) historical places, (5) natural conservations which including, growing local vegetables and some productive plants that is well known in the area such as corn, cocoa, (6) attitudes that being internalised are (discipline, polite, cooperative, honest, clean, orderly, responsible, self confident, shy, competitive, loving, and care, and (7) incorporating parents and society in monitoring and giving empirical guidances. This study has bring effect to (a) students that can live and appreciate the difference in race, culture, religion then they can avoid the attitude that will cause cultural conflict, (b) parents feel comfortable to bring their children to school since the situation at school is conducive, (c) School has comfortable atmosphere that could attract stakeholders to build and use school as place of learning, and (d) Government is helped in bringing culture that respect, according to Indonesian motto *Bhinneka Tunggal Ika*.

### **Methods**

Methods and system of research are include ; (1) developing conceptual model, (2) advocating implementation of the model, (3) implementation of the model, (4) observation of model implementation, (5) focus group discussion, and (6) Dissemination.

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## **Teaching about Neuroplasticity at Elementary School: Preparing the 21<sup>st</sup> Century Generation**

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**Abstract :** The 21<sup>st</sup> century learner is basically different than those of the past. The instructional strategies and practices used by teachers should help students achieved the needs by making variation based upon how these students learn best. Neuroplasticity as the selective organization of connections between neurons in human brains is a relatively new concept. Knowing the way how brain works since early age will make students more engaged and do better in their learning. In this paper, the importance of bringing neuroscience research findings into education, especially raising students' neuroplasticity awareness is adressed. A series of activities were given to fifth graders of a private elementary school in Malang. From the students response, it was known that teaching about neuroplasticity build students awareness on the way their brain works, influence students' study habits, increase students' confidence on their intellegence and creativity as well as promote awareness to collaborate with others.

**Keywords:** Neuroplasticity, teaching, elementary school

### **1. Introduction**

Huge social changes, such as growing diversity and population mobility, present educators with new and constantly changing circumstances. As a result, the characteristics which defined the successful education systems of, say, 1975, are unlikely to be those which will define success in the future (OECD 2003a: 115). Moreover, the development of virtual worlds with abundant easily accessed information require students to master certain different skills. According to the Center for Educational Research (2008), students nowadays need to critically evaluate what they read, be able to express the information clearly both verbally and in writing, and understand scientific and mathematical thinking. They need to learn integrated and usable knowledge, rather than the sets of compartmentalised and de-contextualised facts. Thus, the development of virtual worlds require students not only access information but also evaluate information, apply

information, make multiple connections of the information, create new things, communicate with others as well as collaborate and work together.

Today's generation, which is called by Prensky (2001) as digital natives, is accustomed to the twitch-speed, multitasking, random-access, graphics-first, active, connected, fun, fantasy, quick-payoff world of their video games, MTV, and internet and are bored by most of today's education. Prensky (2001) suggests teachers not to ignore skills that new technologies have enhanced (e.g., parallel processing, graphics awareness, and random access)—which have profound implications for students learning.

Teachers are able to make better decisions about which teaching approaches or tools to be used if they understand how students learn. To understand how the students learn, teachers must understand how human brains process, and retrieve information as well as the numerous factors that affect these processes. Willis (2012) argues that teachers who are prepared with knowledge of brain workings will be able to help children build their brain potential, regardless of past performance, bridge the achievement gap, and reach the highest 21<sup>st</sup> century potential skills.

When people keep practicing new things, the brain will connect cells so that they form pathways. The way information is processed in the brain so that new learning can be incorporated into long-term and conceptual memory is necessary to be recognized. By knowing the way how brain works since early age will make students more engaged and do better in their learning. Therefore, this paper elaborates the importance of neuroplasticity awareness and teach about neuroplasticity as well as the implementation of the neuroplasticity concept in teaching young learners.

## **2. Bringing Neuroscience Research Findings into Education**

The valuable knowledge about brain is an asset of neuroimaging laboratory which can be applied in educational field in order to provide benefits for the students. Although, more than two decades ago, the effort of bringing neuroscience knowledge into education was still debatable, the influence seems clearer nowadays by the raising term of brain-based education. Knowledge on how the brain process, recognize, remember and transfer information as well as

sharing that knowledge with students is considered as an important factor to empower students. Teachers with the knowledge of how brain works are able to help students understand their ability to change their brains and experience success and renewed confidence. Willis (2012) suggests that sharing of the knowledge can create the joys of learning, even after several years learning experience. On the other hand, school activities are also believed to have countless effect to students' brain development.

### **2.1 Neuroplasticity**

Mckay (2015) defines neuroplasticity as an umbrella term, commonly used to mean that the brain and nervous system is plastic (or malleable), and can be remodelled or 're-wired' in response to experiences over a lifetime. The brain is made up of 100 billion neurons with each making up to 10,000 connections, or synapses, with other neurons. Neural impulses code thoughts, actions and experiences and continually reorganises the structure and function of pathways enabling brain to respond efficiently and effectively to the world. Similarly, Wesson (2010) states that neural or brain plasticity refers to the ability of the brain to modify its structures and neural mechanisms which underlies the brain's extraordinary capacity to learn, unlearn and relearn.

The belief that brain is reshaped into its own unique configuration displaces John Locke's notion of the tabula rasa, which suggests that the mind is a blank slate from which competencies are developed. The research findings on neuroplasticity which show that stimulation changes brain structures and affects the way people think, and that these transformations go on throughout life are no longer questioned.

Neuroplasticity is a process that can lead to positive or negative effect. As suggested by Arrowsmith-Young (2012), we need to understand important factors that evoke these neural changes so that we can effectively reduce the factors leading to negative neural changes and increase the factors leading to positive neural changes. She further elaborates that some of the factors leading to negative brain changes are chronic negative stress, prolonged anxiety, chronic pain and certain mental illnesses. While some of the factors leading to positive brain changes are active sustained engagement in the learning process, environmental enrichment, task demand or effortful processing or both, novelty

and complexity, exercise and reward and performance feedback systems. For the role of genetic factors and individual differences related to dopamine are still being investigated (Pieramico et al. in Arrowsmith-Young, 2012).

Furthermore, Hoiland (2015) elaborates four important facts about neuroplasticity include: (1) There are several different processes of neuroplasticity that take place throughout a lifetime. Neuroplasticity does not consist of a single type of morphological change, but rather includes several different processes that occur throughout an individual's lifetime. Many types of brain cells are involved in neuroplasticity, including neurons, glia, and vascular cells, (2) Neuroplasticity has a clear age-dependent determinant. Although plasticity occurs over an individual's lifetime, different types of plasticity dominate during certain periods of one's life and are less prevalent during other periods. (3) Neuroplasticity occurs in the brain under two primary conditions. First, during normal brain development when the immature brain first begins to process sensory information through adulthood (developmental plasticity and plasticity of learning and memory). Second, as an adaptive mechanism to compensate for lost function and/or to maximize remaining functions in the event of brain injury. (4) The environment plays a key role in influencing plasticity. In addition to genetic factors, the brain is shaped by the characteristics of a person's environment and by the actions of that same person.

## **2.2 The Importance of Neuroplasticity Awareness Since Early Age**

Having neuroplasticity awareness is claimed to have a beneficial impact in the classroom. Wilson (2014) shows that teaching about how the brain changes during learning, has a positive effect on students' expectation and on students' perceptions of their own abilities. Wilson & Conyers (2013) as quoted from Wilson (2014) argue that students' understanding on the changing of structure and function of brain as a result of learning combined with explicit instruction on the use of cognitive and metacognitive strategies can guide students to learn how to learn. They further elaborates that these strategies effectively produces learning gains, which motivate students to take charge of their learning, which leads to further academic success and may have the additional benefit of alleviating

classroom management issues. Nisbett (2009) also reports that seventh graders who were taught that learning changes the brain did better on math tests than the students who did not receive the information. As cited from Bernard (2010), a study conducted by Blackwell, Trzesniewski and Dweck found that both morale and grade points took a leap when students understood the idea that intelligence is malleable. The students who already believed that not only do better in school, but also perform significantly better than their peers in a control group. Thus, the students' awareness about neuroplasticity will guide and help students to do better in their learning.

If students aware of their own potential since early age, there will be a chance for them to learn more in the future. Russ (2015) states that the greatest neuroplasticity potential is present in the youngest children. She argues that although childhood in general is a period of heightened plasticity, two surges of rapid synaptic growth take place over a lifespan: in the first 2-3 years after birth, and in the year or so just before puberty. At these times, neural pathways are created very easily and rapidly. Thus, the activities and experiences at those particular stages are more easily embedded into strong neural pathways.

Basically, building young learners' awareness about neuroplasticity is similar with those who work with teenagers or adults. Jensen (2008) suggests schools to build the students awareness about neuroplasticity through skill building, reading, meditation, the arts, career and technical education, and thinking skills that will build student success. While Wilson (2014) proposes four important ways to teach students about neuroplasticity: (1) Remind students that they drive their own brains, and teach them useful learning strategies, (2) Make students think about their thinking, (3) Practice, (4) give challenge. In addition, Bernard (2010) suggests three ways of making classroom friendly to malleable brains: (1) Repeat an activity, retrieve a memory, and review material in a variety of ways to help students build thicker, stronger, more hard-wired connections in the brain. (2) Put information in context by integrating academic subjects or creating class projects relevant to their lives. (3) Let students know how the brain works. Based on her successful experience dealing with brain impairment, Young (2013) evokes some principles that leads to positive brain change: (1) design a

task that places demands on a specific cognitive function (targeted/differential stimulation), (2) start the level of task difficulty just above the level of current functioning and, as the individual attains mastery at that level, (3) remove the support, wherever possible, of any areas that could compensate for the targeted weaker area of functioning (targeted/differential stimulation; effortful processing; novelty), (4) build in performance mastery criteria that is rewarded (sustained attention; active engagement; reward effects on dopamine), (5) repeated and prolonged practice.

### **3. Teaching about Neuroplasticity at Elementary School**

This preliminary study was conducted to fifth graders of a private elementary school in Malang, East Java, Indonesia. Students' response was elicited through an interview after a series of activities were given to students. The activities given to the students are based on the material developed by Russ (2015) in *Neuro-knowledge for Teachers*. In general, the students are asked to demonstrate their own neuroplasticity to know their own mindset potential. Then, they are asked to repeat difficult and uncomfortable activities to demonstrate that their neural networks are improved significantly and quickly with repetition. The repeated demonstration of their own neuroplasticity in challenging tasks can be used to remind them of their potential when they face difficult new content in the classroom. The complete activities are elaborated below

#### *Preparation*

1. Teach about the brain by using some easy activities to introduce structure and function of brain (see Appendix 1).
2. Explain to students that they will do a challenging task. They need to be aware of their feeling when they are doing the task because they will be asked to write their feelings afterward.
3. Ensure that the students are motivated to complete the tasks.
4. Prepare a timer which shows hours, minutes, and seconds and visible to all of the students. In this case, a timer from



<http://www.timeanddate.com/stopwatch/> was shown in LCD to make students able to see the time.

### *Activity 1*

1. Demonstrate the task on how to make origami to the students (see appendix 2). Remind them that they will be timed, and that they have to record their time and count their errors as soon as they complete the task.
2. Explain that some students will take longer than others, and that it doesn't matter how long they take because it simply depends on what experiences shaped their brains as children.
3. Pass out the origami paper
4. Do the task. When all the students are prepared to begin, teacher gives instruction to start and allow the timer to run until all the students have completed the task.
5. Ask students to report the time they need to complete the task and the numbers of getting difficulties (such as looking at instruction paper, asking to teacher and friend). Draw graph on the time needed by the students in a certain interval and the number of errors they make.
6. Discuss how the students felt after trying the new activity. Some questions are asked such as , "Did you want to give up while doing the activity?" "Did you feel that the activity was so difficult?" "Did you feel tense?"

### *Activity 2*

1. Ask the students to repeat the task. Repeat also steps 4 and 5, draw graph from each trial. Ask the students to observe the improvement. Then, the teacher explain that this is an example of neuroplasticity in which the neurons in the brain were forming new connections when they learned new experiences.
2. Discuss the disequilibrium on this trial and ask the students "what do you need to do to make strong pathways of the neurons in your brain?". The teacher direct students to the importance of repeating the activity frequently to trace the new neural pathways. More dendrites grow when a

person learns something new. We can then strengthen these connections by remembering, practicing, visualizing, or using the new information.

3. Ask the students to connect the task with their real life experience by recalling the time when they learn something new and whether they are able to get over it or quit.

### Activity 3

This activity is intended to give opportunity for students to experience the effects of distraction on their concentration and performance.

1. Prepare 3 signs which contain small actions written instruction for the student to do. The students should complete the task quickly and the signs were written largely and darkly enough for all the students to see from their desks (See the signs in appendix 3). Prepare also a tone that can be played out loud such as a sound from phone,
2. Tell the students they are going to do the task again, but this time they will have to read an instruction and take the action whenever they hear a tone.
3. Say “start” when all the students are ready with their pencils, ring the tone, start the timer and allow the timer to run until all the students have completed the task. In this activity, a beep sound from the phone were played every few seconds.
4. Draw graph of the times and the number of errors as in the previous activities. In this activity, the students need longer times, as expected. Then, ask students “why do you need longer time?”. The students then realized that it took extra time because they had to stop their work while doing the tasks.
5. Explain to the students that whenever they are concentrating on a task, they have activated a particular neural pathway. When they stop a task to do something else, they have to walk back from that neural pathway and down another neural pathway. To complete the task, they have to travel

back down the previous neural pathway, which takes time and increases the likelihood of errors.

6. Ask the students to connect the activity with their real experience. This activity illustrates how distractions interfere learning. Students discuss how often they are interrupted in their work and what sort of things distract them. These might include cell phones, video games, siblings, TV, friend etc. If they know what distract them, they can avoid it while they do something important so that they can finish their work as soon as possible.

#### Activity 4

This activity is similar with the previous three activities but the students should practice mindfulness activity before completing the tasks to help them settle into the present moment more easily. Through mindfulness activity, students are freed from becoming entangled in thoughts of the past, and freed from worrying about what happen next.

1. Ask the students to stand beside their desks, be silent and still, and close their eyes. Instruct them to place their attention in the back of their arms, the back of their necks, the back of their legs. Ask them to reach their arms straight out and notice the back of the arms, the chest. Ask them to open their eyes, bend forward, and reach for their toes, placing their attention on the back of their legs, and on the sensation of the blood rushing to their heads. Have them stand straight up, be relaxed and still. While they stand, ask them to notice only their breath in and out, in and out. This should take 2-3 minutes. Then, ask them to sit down, keeping that calm brain that they just practiced.
2. Ask students to do new task(see appendix 4). When all the students are prepared to begin, teacher give instruction to start and allow the timer to run until all the students have completed the task.
3. Ask students to report the time they need to complete the task and the number of errors they make. Draw graph on the time needed by the students in a certain interval and the number of errors they make.

7. Discuss how the students felt after trying the activity. Ask questions like “What do you feel now?” “Is it easy for you to do the task?” “don’t you feel the tense such as in the first activity?”
8. Explain that the mindfulness exercises are designed to develop their ability to stay in the present moment and they are a great way to improve their ability to concentrate. The mindfulness is different from concentration. It helps them to take command of what goes on in the mind. Mindfulness is a state of awareness. While concentration is the tool to bring mind into focus and to close the door on mental chatter.

#### **4. Findings and Discussions**

From this small exercises, the results of teaching young learners about neuroplasticity can be seen. There are some points can be summerized from the students’ reactions and opinions.

First, this activity make the students aware how their brain work. From the awareness, they know what they can do with the brain. The students also aware that brain is important for them so that they have to take care of it.

Second, the students also aware that human is very weak. The brain ability is very limited. They need to do repetition to form the neural pathways stronger. As Willis (2010) experience in teaching about neuroplasticity, her students know that the more they practice a basketball shot or rehearse a ballet performance, the more their skills improve. She explained that when a learner goes over multiplication facts or rereads confusing parts of a book, the brain gets better at processing this information because, with such repetition, more neurons grow and connect to other neurons, and neurons get more efficient at sending one another signals. Furthermore, the students in this study also realize that they need to collaborate and work with others to fill in their limitation in life. It is, of course, a very important skill needed by the students for their success in the future.

Third, students realize that they need strategy to make their brain works better. Students hypothesize about what strategies (such as taking too-frequent

snack break, watching television, play with handphone) which will help or disturb their learning. Because this study only investigate the effect of sound, the students need to try themselves the effect of different conditions (with and without music, working in bed or at a desk, working in a certain room etc), and collect their own data about what works best for them.

Fourth, doing mindfulness activity or relaxation before challenging lesson is reported to make the students feel more relax, more alert, and more focused so that they can remember more. As stated by Willis (2010), the more the students practice the mindfulness, the stronger the neural network holding that memory becomes; eventually, the students can easily return to that memory whenever they feel stressed. Returning to that safe place enables learners to let new information that someone is presenting flow into their thinking brain rather than being filtered out.

## **5. Conclusion and Suggestion**

From the experience teaching about neuroplasticity, it is found that learning about brains and how the brain respond to the way people learn influence students' study habits as well as promote collaboration with other and make them believe that they can create a more intelligent, creative, and powerful brain. Confirming the concept of neuroplasticity, teacher will realize that when students get difficulties with lessons, it doesn't mean that they are unable to learn, but because they need more practice and instructional support.

The developments in neuroscience is proven to be very useful to be applied in the classroom. It means that teachers need to learn further about neuroscience findings and tried out in the classroom. Through this collaboration, teacher will give more benefit for students.

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## APPENDIX 1

### LESSON PLAN FOR TEACHING ABOUT BRAIN

#### Objectives:

In this lesson, students understand a few basic facts about the anatomy of the human brain.

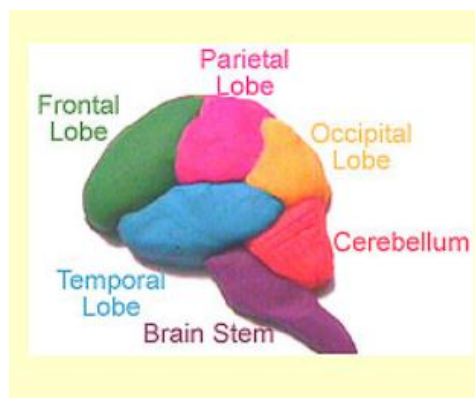
Material/Topic: brain structure and function, nervous system, shape and weight of brain

#### Media:

1. Copies of *The Neuroscience for Kids Coloring Book*
2. Colored pencils
3. Clay
4. Diagram of brain
5. Video

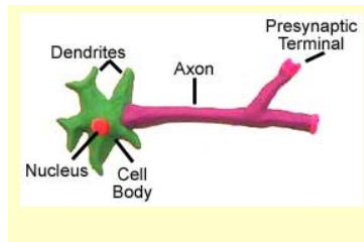
#### Activities:

1. Explain that the brain is a marvelously complex and important organ of the body
2. Pass out copies of the brain diagram and have students color and label these regions based on teacher explanation on the function of each part
3. Students create a model of brain by using different colour of clay. They can see the diagram of brain below as an example.





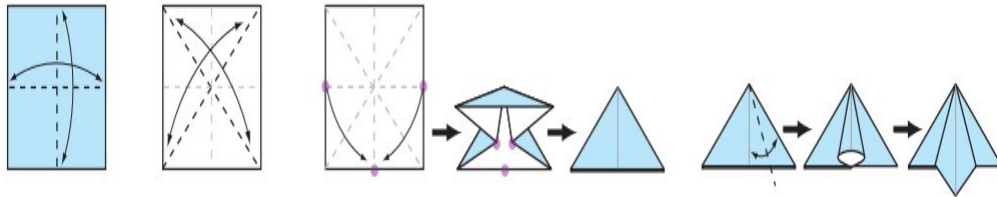
4. Students create a model neuron by using different colour of clay. They can see the diagram below as an example.



5. Students watch a video on the way the neural system works

APPENDIX 2

Steps of Making Origami Demonstrated to Students in Activity 1



1. Start with your paper coloured side up. Fold in half, then in half again, as shown. Crease well, then open out again.

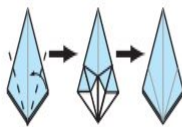
2. Turn the paper over and fold in half diagonally and in both directions. Crease well and open out once again.

3. Holding the points shown, bring them both down to the centre point on the bottom line and flatten.

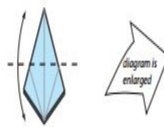
4. Fold the top triangle into the centre and unfold. Using this crease, open out the triangle and flatten.



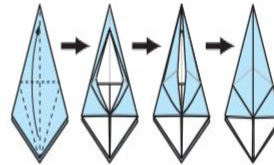
5. You'll need to repeat step 4 on all four of the flaps of the waterbomb base. The model will now look like this.



6. On the uppermost diamond, fold the outside corners into the centre line, crease well then open.



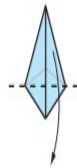
7. Fold the model in half and open.



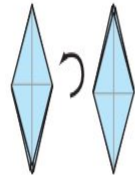
8. Using the creases made in step 6 and 7, lift the bottom point of the model (the uppermost layer only) up to the top point, bringing in the sides of the model at the same time, as shown.



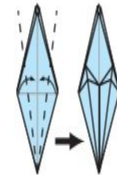
9. Repeat steps 6, 7 and 8 on each of the four sides. The model should now look like this.



10. Now fold down each of these triangles, on all four sides.



11. Rotate model upside down.



12. Fold the outer flaps toward the centre and flatten.



13. Repeat step 12 on all four sides of the model. The model should now look like this.



14. Fold down all petals. Completed Lily!



### APPENDIX 3

#### Signs for Activity 3

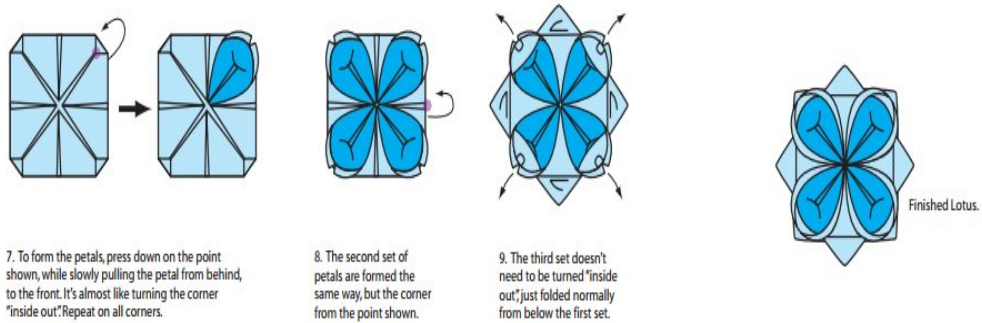
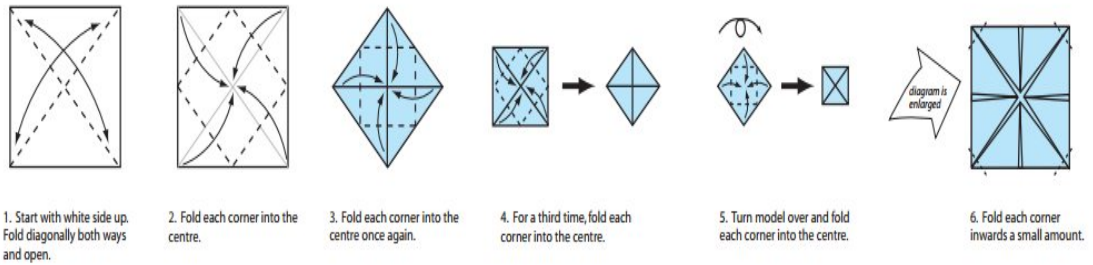
Write down the last three things you had to eat and drink

Write down the main colour of your bedroom walls, your livingroom walls, and your bathroom walls.

Touch the tip of your nose three times

## APPENDIX 4

### Steps of Making Origami Demonstrated to Students in Activity 4



## THE EFFECT OF PROBLEM BASED LEARNING MODEL FOR HIGH SCHOOL STUDENT GEOGRAPHY LEARNING OUTCOMES

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**Abstract:** The purpose research to examine the influence of the learning model Problem Based Learning on the results of high school students learning geography. The study was conducted in SMA PGRI 1 Lumajang academic year 2014/2015. Research subjects are students of class XI IPS 2 and 4. This study is a quasi experimental research (quasi experimental) to design non Equivalent Control Group Design. Based on the difference in value of the pretest and posttest, the average gain score results ability of high school students learning geography experimental class is higher with a score of 35,17 compared with the control class with a score of 24,83. The results of calculations using the independent t test analysis sample t test p-level data showed less than 0.05 ( $p < 0.05$ ) is 0.00. This calculation results prove that the learning model Problem Based Learning affect the results of high school students learning geography. This, it can be concluded that the learning model Problem Based Learning geography affects the learning outcomes SMA PGRI 1 Lumajang

**Key Words:** Problem Based Learning Model, Geography Learning, Result

**Abstrak:** Penelitian bertujuan menguji pengaruh model pembelajaran *Problem Based Learning* terhadap hasil belajar geografi siswa SMA. Penelitian dilakukan di SMA PGRI 1 Lumajang tahun ajaran 2014/2015. Subjek penelitian merupakan siswa kelas XI IPS 2 dan 4. Penelitian ini merupakan penelitian eksperimen semu (*quasi experiment*) dengan desain *Non Equivalent Control Group Design*. Berdasarkan selisih nilai pre test dan post test, rata-rata gain score kemampuan hasil belajar geografi siswa SMA kelas eksperimen lebih tinggi dengan skor 35,17 dibandingkan dengan kelas kontrol dengan skor 24,83. Hasil perhitungan analisis uji t menggunakan independen sample t test diperoleh data p-level lebih kecil dari 0,05 ( $p < 0,05$ ) yaitu 0,00. Hasil perhitungan ini membuktikan bahwa model pembelajaran *Problem Based Learning* berpengaruh terhadap hasil belajar geografi siswa SMA. Jadi, dapat disimpulkan bahwa model pembelajaran *Problem Based Learning* berpengaruh terhadap hasil belajar geografi SMAN PGRI 1 Lumajang.

**Kata Kunci:** Model *Problem Based Learning*, Belajar Geografi, Hasil

Model Pembelajaran *Problem Based Learning* pertama kali dikembangkan di bidang kedokteran oleh Howard Barrows tahun 1960 di McMaster University di Hamilton, Ontario, Kanada. Dr. Howard Barrows awalnya sebagai ahli saraf, tetapi segera mulai belajar medis keahlian dan menjadi tertarik dalam pendidikan (Hmelo, 2011). Model pembelajaran *Problem Based Learning* awal mulanya hanya digunakan di bidang kedokteran saja. Siswa kedokteran pada saat itu mengalami kesulitan dalam mengingat dan rendahnya hasil belajar. Dengan menggunakan model pembelajaran *Problem Based Learning* terbukti dapat meningkatkan hasil belajar. Kemudian, model pembelajaran *Problem Based Learning* dikembangkan di tiga fakultas kedokteran.

*University of Limburg* (Belanda), *University of Newcastle* (Australia), dan *University of Mexico* (Amerika).

Model pembelajaran *Problem Based Learning* memiliki beberapa fitur atau bagian khusus. Para pengembang model pembelajaran *Problem Based Learning* (Cognition and Technology Group at Vanderbilt, 1990, 1996a, 1996b; Gordon, 2001; Krajcik, 2003; Slavin, Maden, Dolan, & Wasik, 1994; Torp and Sage, 1998, dalam Arends, 2008) menjelaskan bahwa "model pembelajaran *Problem Based Learning* memiliki fitur-fitur antara lain: pertanyaan atau masalah perangsang, fokus *interdisipliner*, investigasi autentik, produksi artefak dan *exhibit*, serta kolaborasi". *Problem Based Learning* tidak dirancang untuk membantu guru menyampaikan informasi dalam jumlah besar kepada siswa, hal ini sesuai dengan paradigma konstruktivistik yang mengharuskan siswa aktif dan guru sebagai fasilitator.

*Problem Based Learning* adalah model pembelajaran inovatif berorientasi konstruktivistik yang dapat membuat siswa aktif dalam pembelajaran (Jogianto, 2006). Pembelajaran model *Problem Based Learning* adalah suatu proses pembelajaran terkonstruksi bukan proses menerima (*receptive process*), yang dipengaruhi oleh faktor interaksi sosial dan sifat kontekstual dari pelajaran (Arends, 2008). Fokus dari *Problem Based Learning* terletak pada konsep-konsep dan prinsip-prinsip inti dari suatu disiplin studi, melibatkan siswa dalam investigasi pemecahan masalah dan memberi kesempatan siswa bekerja secara otonom untuk mengkonstruksi pengetahuan mereka sendiri, dan siswa dapat menyelesaikan masalah. *Problem Based Learning* merupakan sebuah pembelajaran inovatif yang menekankan belajar kontekstual melalui kegiatan-kegiatan yang kompleks.

Model pembelajaran *problem based learning* didukung teori belajar konstruktivistik. Menurut pendapat Piaget (dalam Arends, 2008) mengatakan pelajar dengan umur berapapun terlibat secara aktif dalam proses mendapatkan informasi dan mengkonstruksikan pengetahuannya sendiri. Pengetahuan tidak statis, tetapi berevolusi dan berubah secara konstan selama pelajar mengkonstruksikan pengalaman-pengalaman baru yang memaksa mereka untuk mendasarkan diri dan memodifikasi pengetahuan sebelumnya. Konstruktivisme adalah teori belajar yang mendapat dukungan luas yang bersandar pada ide bahwa siswa membangun pengetahuannya sendiri di dalam konteks pengalamannya sendiri. Adanya peluang untuk menyampaikan ide, mendengarkan ide-ide orang lain, dan merefleksikan ide sendiri pada ide-ide orang lain, adalah suatu bentuk pengalaman pemberdayaan individu. Proses interaktif dengan kawan sejawat itu membantu proses konstruksi pengetahuan (*meaning-making process*).

Pembelajaran Model *Problem Based learning* memiliki langkah-langkah, menurut Sumarmi (2012) adalah sebagai berikut: 1). siswa diberi topik permasalahan; 2) dalam kelompok-kelompok kecil, siswa mendiskusikan masalah dengan menggunakan pengetahuan yang dimiliki serta mengerjakan yang perlu diketahui. Pada bagian ini, juga mencakup membuat pernyataan-pernyataan masalah dan merumuskan hipotesis-hipotesis; 3) siswa mencari data tentang hal-hal yang diperlukan atau informasi yang belum ada; 4) siswa berkumpul kembali dengan kelompoknya untuk melaporkan apa saja yang telah dipelajari; 5) langkah-langkah ini akan berulang beberapa kali, berdiskusi mencari informasi, melaporkan ke kelompok, diskusi lagi sampai kelompok mendapatkan solusi; 6) kegiatan akhir

merupakan kegiatan diskusi penutup, yaitu bila informasi dipelajari dan diproses telah sampai pada suatu solusi.

Langkah-langkah pembelajaran model *Problem based learning* memiliki tahapan menurut (Jonson, 2007; Arends, 2008; Rusmono, 2012) yaitu: 1) orientasi siswa pada masalah; 2) mengorganisasikan siswa untuk belajar; 3) membantu investigasi mandiri dan kelompok; 4) mengembangkan dan menyajikan hasil karya; 5) menganalisis dan mengevaluasi proses pemecahan masalah. Langkah-langkah tersebut dilakukan secara urut untuk mendapatkan hasil yang maksimal.

Melalui model *Problem Based Learning* siswa dalam melakukan investigasi terbagi dalam kelompok. Menurut pandangan ini transaksi sosial memainkan peranan sangat penting dalam pembentukan kognisi (Richmond & Striley, 1996), hal ini akan mampu meningkatkan dan menambah nilai sosial antar siswa. Melalui pengalaman langsung, yakni melakukan penelitian dan melihat kondisi lingkungan yang nyata diharapkan akan mampu menambah wawasan siswa. Proses negosiasi kognitif interpersonal sebagai bentuk dari pengajuan gagasan, debat, dan menerima atau menolak selama proses interaksi dengan kawan sejawat memungkinkan perluasan dan penghalusan pengetahuan dan keterampilan.

Hasil yang diperoleh dari *Problem Based Learning* menurut Arends (2008) adalah: 1) untuk membantu siswa mengembangkan keterampilan berfikir, keterampilan penyelidikan dan keterampilan mengatasi masalah; 2) mempelajari peran-peran orang dewasa dengan mengalaminya melalui berbagai situasi riil atau situasi yang disimulasikan; 3) keterampilan untuk belajar mandiri. Sehingga dengan model pembelajaran *Problem Based learning* diharapkan siswa dapat mengaktualisasikan pembelajaran dalam kehidupan nyata.

Selain pendapat diatas, alasan peneliti memilih model *Problem Based Learning* karena mempunyai manfaat menurut Sumarmi (2012) adalah untuk: (1) mengembangkan kemampuan berfikir para siswa sehingga tidak hanya tambahan berfikir ketika pengetahuan bertambah, namun di sini proses berfikir merupakan serentetan keterampilan seperti mengumpulkan informasi atau data, membaca data dan lain-lain yang penerapannya membutuhkan latihan dan pembiasaan; (2) membina pengembangan sikap penasaran atau ingin tahu lebih jauh, dan cara berfikir objektif, mandiri, kritis, dan analitis baik secara individu maupun secara kelompok; (3) siswa mampu menghadapi permasalahan di lingkungan sekitarnya sehingga berusaha mengerahkan segala kemampuan untuk memperoleh pemecahan masalah.

Selain memiliki kelebihan, model *Problem Based Learning* juga mempunyai kelemahan. Mahanal dan Zubaidah (2007) menyatakan bahwa "kelemahan model *Problem Based Learning* adalah waktu yang diperlukan untuk implementasi, perubahan peran siswa dalam proses, perubahan peran guru dalam proses, dan perlunya siswa dalam perumusan masalah dengan baik". Model ini membutuhkan banyak pengalaman guru, terutama dalam membimbing siswa, mengelola waktu, dan menstimulus kemampuan berfikir siswa untuk merumuskan masalah.

Nelya (2014) telah melakukan penelitian yang berjudul "Pengaruh Model Pembelajaran *Problem Based Learning* terhadap Hasil Belajar Geografi Siswa SMA di Kabupaten Malang" menyatakan bahwa penerapan model pembelajaran tipe ini, menempatkan posisi guru sebagai fasilitator dimana kegiatan

pembelajaran akan dititik-beratkan kepada keaktifan siswa sebagai peserta didik. Pembelajaran ini mengasah kemampuan siswa dalam memahami konsep selama pembelajaran berlangsung, menggunakan penalaran, memecahkan masalah, mengemukakan gagasan atau ide dan mampu bekerjasama. Selain menimbulkan suasana belajar yang aktif secara berkelompok, pembelajaran ini dapat menciptakan keaktifan secara individu dan merangsang siswa untuk tertarik pada pelaksanaan pembelajaran.

Arif (2014) dengan penelitiannya yang berjudul "Pengaruh *Problem Based Learning* terhadap Kemampuan Pemecahan Masalah" menyatakan dalam model *Problem Based Learning* terdapat unsur menemukan masalah dan sekaligus memecahkannya (unsur yang terdapat didalamnya ada *Problem Solving* atau memecahkan masalah). Keunggulan *Problem Based Learning* yaitu menantang siswa mengajukan permasalahan dan juga menyelesaikan masalah yang lebih rumit dari sebelumnya, dapat meningkatkan keaktifan mahasiswa dalam memecahkan masalah, mengemukakan pendapat, menggalang kerja sama dan kekompakan mahasiswa dalam kelompok, mengembangkan kepemimpinan mahasiswa serta mengasah kemampuan pola analisis dan dapat membantu mahasiswa dalam poses nalarnya.

Rosmalinda (2014) dengan penelitiannya yang berjudul "Pengaruh Model Pembelajaran *Problem Based Learning* terhadap Kemampuan Berfikir Kritis Siswa SMA Negeri 7 Bandar Lampung" menyatakan bahwa guru geografi dapat menerapkan model *Problem Based Learning* untuk meningkatkan kemampuan berpikir kritis siswa. Harapannya guru yang akan menggunakan model pembelajaran *Problem Based Learning* dapat mengelola waktu dan kelas dengan baik, sehingga pembelajaran dapat terlaksana dengan baik.

Berdasarkan jbaran yang telah diuraikan di SMA PGRI 1 Lumajang, dapat diidentifikasi yaitu siswa kurang dilatih untuk berfikir dalam memecahkan masalah. Salah satu usaha yang dapat dilakukan untuk meningkatkan keterampilan berfikir untuk memecahkan masalah adalah memilih model pembelajaran yang tepat sesuai dengan materi yang diajarkan.

Berdasarkan hal-hal yang sudah diuraikan, peneliti melakukan penelitian dengan model pembelajaran *Problem Based Learning* dengan materi pelestarian lingkungan hidup dan pembangunan berkelanjutan "Pengaruh Model pembelajaran *Problem Based Learning* Terhadap Hasil Belajar Siswa SMA PGRI 1 Lumajang.

## **METODE**

Penelitian ini menggunakan rancangan penelitian *Quasi Experiment*. Desain penelitian ini menggunakan "control group" dengan dua kelompok yang memiliki kemampuan hampir sama (homogen) dijadikan sebagai kelompok eksperimen dan kontrol. *Quasi Experiment* digunakan karena peneliti tidak dapat mengendalikan kedua kelompok yang diteliti.

Desain ini menggunakan *pretest* yang diberikan sebelum perlakuan dan *post-test* diberikan setelah perlakuan. Pemberian *posttest* berfungsi untuk mengetahui pengaruh perlakuan yang diberikan menyebabkan perubahan yang lebih baik. Pengaruh dari eksperimen dapat diketahui dengan cara membandingkan dengan kelompok kontrol.



Penelitian ini membandingkan kemampuan hasil belajar geografi sebelum dan sesudah diberi perlakuan pada kelompok eksperimen dan kontrol. Desain yang digunakan dalam penelitian ini digambarkan dalam bentuk Tabel 3.1 berikut ini:

**Tabel 3.1 Desain Penelitian**

Kelompok	Pretest	Perlakuan	Posttest
Eksperimen	O <sub>1</sub>	X	O <sub>2</sub>
Kontrol	O <sub>1</sub>	-	O <sub>2</sub>

(Sugiyono, 2010)

Keterangan:

- O<sub>1</sub> : Pre test sebelum pembelajaran
- O<sub>2</sub> : Post test sesudah pembelajaran
- X : Perlakuan dengan model *Problem Based Learning*
- : Tidak ada perlakuan atau pembelajaran dengan model ceramah dan diskusi kelompok

Berdasarkan rancangan penelitian ini menggunakan dua variabel, yaitu 1) variabel bebas yaitu model pembelajaran *Problem Based Learning*, dan 2) variabel terikat berupa hasil belajar geografi. Subjek penelitian ini dipilih dua kelompok berdasarkan nilai Ujian Tengah Semester (UTS) geografi semester genap. Kelompok eksperimen diberi perlakuan dengan menggunakan model pembelajaran *Problem Based Learning*, sedangkan kelompok kontrol menggunakan model ceramah dan penugasan.

Bahan analisis penelitian ini adalah data *gainscore* yang diperoleh dari pengurangan terhadap kemampuan hasil belajar geografi SMA setelah dan sebelum perlakuan kegiatan pembelajaran diberikan. Teknik analisis hasil belajar yang digunakan adalah uji t sampel bebas (*independent sampel t test*), yang dilakukan melalui bantuan *SPSS 16.0 for Windows* pada nilai/ taraf signifikansi  $\alpha = 0,05$ . Pedoman dalam pengambilan keputusan untuk *independent sampel t test* yaitu:

- Jika nilai sig. atau signifikansi  $< 0,05$  dan rata-rata hasil belajar kelas eksperimen lebih tinggi daripada kelas kontrol maka H<sub>0</sub> ditolak.
- Jika nilai sig. atau signifikansi  $> 0,05$  dan rata-rata hasil belajar kelas eksperimen lebih rendah daripada kelas kontrol maka H<sub>0</sub> diterima.

## HASIL

Hasil belajar geografi SMA yang digunakan dalam penelitian ini ditentukan berdasarkan selisih antara skor *posttest* dan *pretest* yang disebut *gainscore*. *Gainscore* diperoleh dengan cara mengurangi skor *posttest* dari masing-masing subjek dengan skor *pretest*. *Gainscore* tersebut menggambarkan hasil belajar geografi siswa SMA dari keseluruhan subjek, baik kelas kontrol maupun eksperimen. Gambaran nilai *gainscore* yang diperoleh berdasarkan selisih antara rata-rata *posttest* dan *pretest* dalam penelitian ini dapat dilihat pada tabel berikut.

**Tabel 1 Rata-rata Nilai Gain Score Kelas Kontrol dan Eksperimen**

Kelas	Rata-rata		
	Pretest	Posttest	Gainscore
Kontrol	43,00	67,83	24,83

Eksperimen	44,00	79,17	35,17
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Tabel 1 menunjukkan bahwa rata-rata nilai kelas kontrol dan kelas eksperimen mengalami peningkatan setelah melaksanakan pembelajaran. Kelas kontrol mengalami peningkatan rata-rata nilai sebesar 24,83 poin yaitu dari 43,00 menjadi 67,83. Sedangkan nilai rata-rata pada kelas eksperimen mengalami peningkatan sebesar 35,17 poin, yaitu dari 44,00 menjadi 79,17. Hasil ini menunjukkan bahwa antara kelas kontrol dan eksperimen terdapat selisih rata-rata nilai *gain score* sebesar 11. Selisih nilai rata-rata tersebut dapat dilihat pada diagram berikut.

Hasil analisis data melalui uji beda *independent sample t test* menunjukkan angka signifikansi (*sig.*) 0,000. Apabila dilihat pada taraf kepercayaan 95%, maka angka tersebut kurang dari 0,05 ( $0,000 < 0,05$ ). Ini berarti  $H_0$  (model ceramah dan penugasan tidak berpengaruh signifikan terhadap hasil belajar geografi) ditolak dan  $H_1$  (model *PBL* berpengaruh signifikan terhadap hasil belajar geografi SMA) diterima.  $H_0$  tersebut ditolak dengan taraf kepercayaan 100%.

## HASIL

### A. Pengaruh Model Pembelajaran Problem Based Learning terhadap Hasil Belajar Geografi SMA

Hasil penelitian ini menunjukkan bahwa model pembelajaran *Problem Based Learning* berpengaruh signifikan terhadap hasil belajar siswa SMA PGRI 1 Lumajang. Hal ini dibuktikan dengan menggunakan uji t, dimana *P Value* lebih kecil dari 0,05 ( $p < 0,05$ ) yaitu 0,00. Hasil uji t menunjukkan adanya pengaruh signifikan model pembelajaran *Problem Based Learning* terhadap hasil belajar siswa. Hasil ini juga ditunjukkan dengan peningkatan nilai rata-rata yang diperoleh oleh kelas eksperimen dari 44,00 menjadi 79,17 dengan peningkatan mencapai 35,17. Pada kelas kontrol juga mengalami peningkatan hasil belajar dari 43,00 menjadi 67,83 dengan peningkatan mencapai 24,83. Meskipun kelas kontrol yang diajar dengan menggunakan metode ceramah dan penugasan mengalami peningkatan hasil belajar, tetapi tidak setinggi dengan kelas eksperimen. Berdasarkan data tersebut maka dapat disimpulkan bahwa model pembelajaran *Problem Based Learning* lebih baik dari pada metode ceramah dan penugasan terutama pada materi pelestarian lingkungan hidup.

Temuan ini sejalan dengan penelitian sebelumnya bahwa model pembelajaran *Problem Based Learning* memberikan pengaruh yang signifikan terhadap hasil belajar dibandingkan dengan pembelajaran secara konvensional yaitu ceramah dan penugasan, metode ceramah tidaklah salah, tetapi proses pembelajaran yang baik adalah memposisikan guru sebagai pengelola pembelajaran bukan satu-satunya sumber informasi (Walker & Leary, 2009; Karmana, 2010; Koestiningih, 2011; Ratmanto, 2011; Lestari, 2012; Malikha, 2012; Hasanah, 2012; Nursamsu, 2013; Nelya, 2014; Arif, 2014; Rosmalinda, 2014).

### B. Kelebihan Model Pembelajaran Problem Based Learning Hasil Penelitian

Dengan menggunakan pembelajaran model pembelajaran *Problem Based Learning* hasil belajar meningkat di duga: pertama, model pembelajaran *Problem Based Learning* menantang siswa untuk belajar karena dalam proses

pembelajarannya terdapat permasalahan kontekstual dan mendorong siswa untuk mencari solusi pemecahan masalah. Pernyataan tersebut selaras dengan pendapat Slavin & Baden (2003) yang menyatakan bahwa pembelajaran yang baik apabila siswa diberikan masalah autentik sehingga siswa lebih tertarik untuk belajar dalam mencari solusi permasalahan. Dan ditegaskan oleh Sumarmi (2012), Supratikya & Kristiyani (2013) menyatakan *Problem Based Learning* adalah pembelajaran yang menantang siswa untuk belajar, bekerja secara kooperatif didalam kelompok untuk memecahkan permasalahan-permasalahan di dunia nyata dan membina pengembangan sikap penasaran atau ingin tahu lebih jauh. Berbeda dengan pembelajaran ceramah dan penugasan, siswa malas dalam proses pembelajaran karena siswa hanya menerima materi dari mengajar, mencatat dan menghafalkannya. Siswa tidak menemukan pengetahuan baru tanpa proses berfikir. Hal ini sesuai pendapat Made (2008) dengan metode ceramah pembelajaran lebih ditekankan pada pengumpulan pengetahuan tanpa mempertimbangkan ketrampilan proses dan pembentukan sikap dalam pembelajaran, kurangnya kesempatan bagi mahasiswa untuk mengembangkan kemampuan bernalarnya melalui diskusi kelompok, sasaran belajar ditentukan oleh dosen sehingga pembelajaran menjadi kurang bermakna bagi mahasiswa.

Materi pembelajaran harus sesuai dengan model pembelajaran *Problem Based Learning*. Penelitian model pembelajaran *Problem Based Learning* ini materi yang diajarkan mengandung isu dan permasalahan yang digunakan kontekstual yaitu kerusakan lingkungan di Kabupaten Lumajang. Hal senada seirama dengan pendapat Sanjaya (dalam Rosmalinda, 2014) yang menyatakan kriteria dalam memilih materi dalam penerapan model *Problem Based Learning* permasalahan yang digunakan telah *familiar* dengan siswa, sehingga siswa dapat mengikuti pembelajaran dengan baik, permasalahan yang dipilih sesuai dengan tujuan yang harus dimiliki oleh siswa setelah mengikuti pembelajaran.

Kedua, Pembelajaran melibatkan siswa dalam penyelidikan autentik dan kontekstual. Hal ini sejalan dengan pendapat Demirel & Arslan (2010) yang mengatakan penelitian *Problem Based Learning* belajar memecahkan masalah kehidupan nyata sehingga siswa lebih tertarik untuk mengikuti proses pembelajaran. Ditegaskan oleh Sumarmi (2012) yang menguraikan pembelajaran geografi erat kaitannya dengan pengalaman di kehidupan nyata dan siswa mampu menghadapi permasalahan di lingkungan sekitarnya sehingga berusaha mengerahkan segala kemampuan untuk memperoleh pemecahan masalah dan pembelajaran berdasarkan masalah mengharuskan siswa melakukan penyelidikan autentik guna mencari penyelesaian nyata terhadap masalah yang ada. Siswa harus menganalisis dan mendefinisikan masalah, mengembangkan hipotesis, mengumpulkan dan menganalisis informasi, membuat referensi, dan akhirnya merumuskan simpulan.

Ketiga, pembelajaran menjadi bermakna karena *interaction* yaitu pembelajaran dua arah antara guru dan siswa. Demirel & Arslan (2010) menyatakan *Problem Based Learning* yang merubah dari pembelajaran satu arah ke dua arah dan menyajikan masalah nyata dan solusi yang tersedia.

Keempat, pembelajaran berpusat pada siswa (*student centered*). Pembelajaran yang mendominasi cenderung siswa dan guru sebagai fasilitator. Siswa menemukan pengetahuan secara aktif sehingga terjadi peningkatan pemahaman. Hal ini senada juga diungkapkan oleh (Adams :2009; Dasna, 2013)

yang menyatakan pembelajaran yang ideal pembelajaran yang berpusat pada siswa (*student centered*), kondisi dimana siswa yang hanya menerima materi dari mengajar, mencatat dan menghafalkannya harus diubah menjadi *sharing* pengetahuan. Hal ini mempertegas bahwa model pembelajaran *Problem Based Learning* berpengaruh signifikan terhadap hasil belajar.

Kelima, siswa bekerjasama dalam kelompok-kelompok kecil untuk saling berbagi pengetahuan dan gagasan. Berbagi pengetahuan dan gagasan akan dapat meningkatkan pemahaman siswa terhadap permasalahan yang disajikan, memacu terbentuknya ide baru, dan memperkaya perkembangan intelektual mahasiswa. Menurut Sudarman (2007) "Model pembelajaran *Problem Based Learning* mendorong siswa untuk bekerjasama dalam kelompok guna menyelesaikan tugas". Model pembelajaran *Problem Based Learning* menuntut siswa untuk bekerjasama dalam kelompok, sehingga menghasilkan keputusan solusi yang digunakan untuk mengatasi masalah.

*Problem Based Learning* memiliki langkah-langkah sebagai berikut:

Pertama, orientasi siswa pada masalah yaitu siswa diberi suatu masalah yang autentik dan aktual. Dalam kegiatannya siswa mempersiapkan alat yang diperlukan dalam proses pembelajaran dan guru menjelaskan tujuan pembelajaran, logistik yang dibutuhkan dan memotivasi siswa untuk terlibat pada aktivitas pemecahan masalah yang dipilihnya.

Kedua, mengorganisasikan siswa untuk belajar yaitu kelas dibagi menjadi kelompok-kelompok kecil, siswa mendiskusikan masalah dengan menggunakan pengetahuan-pengetahuan yang dimiliki serta mengerjakan yang perlu diketahui. Pada bagian ini, juga mencakup membuat pertanyaan-pertanyaan masalah dan membuat hipotesis-hipotesis atau prediksi dari masalah yang dipilih. Dalam kegiatan ini guru berperan dalam membimbing siswa mendefinisikan dan mengorganisasikan tugas belajar yang berhubungan dengan masalah yang dipilih

Ketiga, membimbing penyelidikan individu (mandiri) maupun kelompok yaitu siswa mencari data tentang hal-hal yang diperlukan atau informasi yang belum ada. Dalam kegiatannya guru berperan mendorong siswa untuk mengumpulkan informasi yang sesuai, melaksanakan eksperimen untuk mendapatkan penjelasan dan pemecahan masalah.

Keempat, Mengembangkan dan mempresentasikan hasil karya yaitu siswa berkumpul kembali dengan kelompoknya untuk melaporkan apa saja yang telah dipelajari untuk menyusun laporan dalam kelompok dan mempresentasikannya serta berdiskusi dengan kelompok lainnya. Kegunaan langkah ini selain siswa dapat menyelesaikan masalah dengan benar juga siswa belajar dalam mengungkapkan pendapat apa yang telah dimiliki kepada teman kelas. Hal ini lebih memudahkan siswa apabila mengungkapkan pendapat ke teman daripada langsung ke guru kelas. Pernyataan tersebut selaras dengan pendapat Huda dalam Nelya (2011) yang menyatakan bahwa pembelajaran kooperatif dapat meningkatkan relasi antarsiswa meliputi keterampilan bekerja sama yang semakin baik, kepedulian pada orang yang semakin meningkat, dukungan sosial dan akademik yang semakin besar, kohesivitas yang lebih stabil, dan sikap toleran akan perbedaan. Guru membimbing siswa dalam merencanakan dan menyiapkan hasil karya yang sesuai seperti laporan hasil diskusi dari LKK model pembelajaran *Problem Based Learning*, mengarahkan siswa memberi tanggapan, serta memberikan masukan atas apa yang dikemukakan oleh siswa terhadap presentasi kelompok lain.

Kelima, menganalisis dan mengevaluasi proses pemecahan masalah yaitu guru membimbing siswa melakukan refleksi dan mengevaluasi terhadap penyelidikan dan proses-proses yang mereka gunakan. bila informasi yang dipelajari dan diproses telah sampai pada suatu solusi. Siswa melakukan refleksi dan evaluasi terhadap penyelidikan dan proses pencarian data yang mereka gunakan.

Pada saat kegiatan pembelajaran berlangsung, dengan menggunakan model *Problem Based Learning*. Diperoleh beberapa hasil temuan tambahan pada saat pembelajaran berlangsung diantaranya: a) model *Problem Based Learning* memberikan antusias siswa untuk belajar aktif; b) siswa mampu mempresentasikan problem-problem autentik; c) siswa dapat memahami masalah kehidupan nyata. Hasil temuan di atas sesuai dengan keunggulan model *Problem Based Learning* yang dikemukakan oleh Sanjaya, (2011):

- a. Merupakan teknik yang bagus untuk lebih memahami isi pelajaran
- b. Menantang kemampuan siswa serta memberi kepuasan untuk menemukan pengetahuan baru bagi siswa
- c. Meningkatkan aktivitas siswa
- d. Membantu siswa dalam memahami masalah di kehidupan nyata
- e. Mengembangkan kemampuan siswa untuk berfikir kritis
- f. Memberikan kesempatan siswa untuk mengaplikasikan materi terhadap dunia nyata
- g. Membantu siswa mengembangkan pengetahuan baru dan bertanggung jawab terhadap pelajaran yang dilaksanakan
- h. Memperlihatkan pada siswa bahwa setiap materi pelajaran bukan hanya sekedar didapatkan dari guru dan buku
- i. Lebih menyenangkan dan disukai oleh siswa
- j. Mengembangkan minat siswa untuk selalu belajar walaupun sudah tidak berada dipendidikan formal.

### C. Kekurangan Model Pembelajaran *Problem Based Learning* Hasil Penelitian

Meskipun terdapat beberapa kelebihan yang ditemukan pada proses pembelajaran berlangsung dengan menggunakan model *Problem Based Learning* Namun terlepas dari adanya beberapa kekurangan model *Problem Based Learning* yang ditemukan pada saat kegiatan pembelajaran berlangsung, diantaranya: a) siswa terkesan kaku pada saat melakukan eksperimentasi, sehingga membuat pencapaian tujuan tidak berjalan secara optimal, b) guru geografi yang bertindak sebagai guru model dalam penelitian ini tidak terlalu memahami langkah dari model *Problem Based Learning*. Hal ini menyebabkan sesekali peneliti ikut membimbing guru dan siswa pada saat kegiatan pembelajaran berlangsung; c) jumlah siswa yang cukup banyak yaitu 30 siswa, hal ini menyebabkan seringnya terjadi kegaduhan pada saat kegiatan pembelajaran.

Hal ini sesuai dengan yang dikemukakan oleh Sanjaya, (2011) bahwa model *Problem Based Learning* memiliki kekurangan, diataranya:

1. Manakala siswa tidak memiliki minat atau mempunyai kepercayaan bahwa masalah yang dipelajari sulit untuk dipecahkan, maka mereka akan merasa enggan untuk mencoba
2. Keberhasilan pembelajaran berbasis masalah membutuhkan cukup waktu untuk persiapan

3. Tanpa pemahaman mereka berusaha untuk memecahkan masalah yang sedang dipelajari, maka mereka tidak akan belajar apa yang mereka pelajari.

Meskipun masih terdapat beberapa kelemahan model *Problem Based Learning* yang ditemukan pada saat kegiatan pembelajaran berlangsung. Akan tetapi telah tercapai dari tujuan penelitian ini berdasarkan dari hasil pengujian

## **PENUTUP**

### **Kesimpulan**

Berdasarkan hasil uji hipotesis dan pembahasan hasil penelitian, maka diambil kesimpulan bahwa model pembelajaran *Problem Based Learning* berpengaruh signifikan terhadap hasil belajar geografi siswa SMA 1 PGRI Lumajang. Hal-hal yang diduga berpengaruh terhadap hasil belajar yaitu: (1) siswa dihadapkan permasalahan nyata yang mendorong siswa untuk dipecahkan; (2) pembelajaran melibatkan siswa dalam penyelidikan nyata dan kontesktual sehingga siswa lebih tertarik untuk mengikuti proses pembelajaran; (3) siswa aktif selama pembelajaran; (4) pembelajaran menjadi bermakna karena *interaction*; (5) adanya kerja sama dalam kelompok-kelompok kecil untuk saling berbagi pengetahuan dan gagasan.

### **Saran**

Berdasarkan kesimpulan dari hasil penelitian ini, maka dapat disampaikan saran-saran sebagai berikut:

1. Bagi para guru, guru harus bisa menguasai seluruh rangkaian tahapan dari model *Problem Based Learning*. Guru terus memberikan bimbingan kepada siswa supaya siswa tidak down ketika mereka belum menemukan solusi pada permasalahan-permasalahan yang diterimanya. Guru harus bisa memberikan permasalahan yang dekat dengan siswa.
2. Bagi peneliti selanjutnya disarankan untuk: a) menguji pengaruh model pembelajaran *Problem Based learning* terhadap variabel lain serta pada lokasi, jenjang pendidikan, atau materi lain; b) mengintegrasikan atau membandingkan dengan model pembelajaran yang lain.

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## The Influence of Problem Based Learning Model to Geography Learning Output of Senior High School Students

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**Abstract:** The aim of this study to clarify the effect of Problem Based Learning model on learning outcomes geography high school students on the matter of pollution and environmental damage. Determination of the subjects in the study carried out based on the results of the 1st semester studying geography UAS similar or equal to the average value. Determination of the experimental class to class XI IPS 1 by the number of students 47 had an average of learning outcomes 76. Class 43 controls the number of students had an average of 76 learning outcomes for grade XI IPS 2. experimental research design with pretest-posttest control group design. Data were analyzed using SPSS 16 for Windows. The test results statistik known value of t-test for Equality of Means obtained  $t_{hitung}$  at 5.224 and  $t_{tabel}$  with (df) 78 and alpha 5% is approximately 2.000. That is Problem Based Learning model a significant effect on the results of high school students learning geography in matter of pollution and environmental damage.

**Keywords:** Problem Based Learning Model, the Output of Geography Learning, Senior High School Students

Learning strategies needed to achieve the learning objectives effectively and efficiently. Various learning strategies have always aimed to achieve the learning outcomes appropriate learning objectives. Geography learning problems in school subjects include: contextual material, teaching methods used by teachers and students' lack of interest in geography lesson.

Matter pollution and environmental damage on the subjects of geography need lesson to students contextually. Given the material includes two phenomena: physical and social. Both phenomena have to lesson to students simultaneously and not on any of the physical or social aspects.

Geography learning failure because it does not link the physical and social phenomena. According to Gunawan (2005) that a failure in the learning of pollution and environmental damage in schools are (1) the material is less focused on the earth's surface real phenomena associated with the region and the needs of children living in the community; and (2) learning approach as well as the material has not been fully understood by teachers, resulting in more material in the form of facts and found no case of problems.

Constraints in learning geography for upper secondary school level (SMA) is different. According Kirana (2005) that the constraints in general implementation of learning the science of geography in the curriculum of secondary schools in Indonesia include two things, namely: (1) a geography lesson yet attractively packaged, limited insight and creativity of teachers (especially material pollution and environmental damage that requires skill technical); and (2) the material pollution and environmental damage only served merely to uncover the facts that are rote.

Innovation in learning geography teacher is needed to develop the creativity of students. Given the geography subjects have differences with other disciplines object of study is based on social and physical phenomena. Learning strategies are needed in linking object of study of geography in accordance with the material of pollution and environmental damage in this study. Sumarmi (2012) explained that the difficult learning geography covered only theoretical in the classroom but need to connect with environmental conditions.

One of the learning strategies that need to be applied to the matter of pollution and environmental damage that Problem Based Learning model. This learning model is the result of the work of Dewey (1916) who advocated the role of teachers to engage students with the tasks of the intellectual and social problems that come from the environment. The goal is that students are involved in solving the desired projects from the real problems.

## Method

### Research Design

This research is a quasi-experimental (Quasi Experiment). This study aims to explain the influence of Problem Based Learning model to the results of high school students learning geography. In the first step of research students from the experimental and control classes were given a pretest to determine the initial capability. Class experiments, researchers used a Problem Based Learning model, while the control class according to the method used by teachers of geography in senior high school Hang Tuah 2 Sidoarjo is teaching lectures and discussions. The form of experiment design was pretest and posttest control group design.

**Table 3.1 Treatment Design pretest and posttest**

Group	Pretest	Treatment	Posttest
Experiment	O <sub>1</sub>	X	O <sub>2</sub>
Control	O <sub>1</sub>	-	O <sub>2</sub>

(Sumber: Campbell&Stanley, 1963; Caporaso&Roos, 1973; dan Tuckman, 1999)

Description:

X: Treatment with Problem Based Learning model

-: There is no treatment or method with lectures and discussion

O1: Value Pretest

O2: Value posttest

### **Treatment**

The treatment in this study using Problem Based Learning in the experimental class with the following steps:

1. Students are given a problem. This phase students listened to the problems presented by the teacher in the classroom through the film appearance environmental damage. Problems presented by the teacher in the form of environmental problems of the Lapindo mudflow in Sidoarjo.
2. In small groups, students discuss the problem with the use of information and work that needs to be known. Students are given some time to discuss with the group to find solutions to the problems presented by the teacher in the classroom.
3. Students seeking data about information that has not been there. Students have to collect information either individually or groups to seek solutions the problems faced. Information gathered students obtained from the library, the Internet, or the resources of the communities affected by pollution and environmental damage.
4. Students are reunited with the group to report on what is learned. The investigation of students in the form of the report is the development of information from multiple sources is presented in the form of a written report.
5. Students are repeated several times to discuss, look for information, reported to the group, and further discussions with the group to find a solution. Form discussion results are reported in writing and presented to the class.
6. The final event is the closing discussion to evaluate the information learned and processed has arrived at a solution. At this final stage the students with the help of guidance teachers to analyze and evaluate the process of solving the problems presented by each group.

In the control group there was no special treatment. Grade control using the learning lectures and discussions are commonly used in high school geography teacher Hang Tuah 2 Sidoarjo. Each group was given the task of making an example of material related articles pollution and environmental damage in relation to sustainable development is based on a reference book. The next meeting the students presented the articles that have been made at the previous meeting.

### **Subject and Location Research**

Determination of the subjects in this study with consideration to students' academic abilities are almost the same or equivalent based on the results of final exams (UAS). Determination of the subject is done as an indicator determining the experimental class and control based on the average

results of learning UAS 1st half of each class. Subjects in this study are high school students Hang Tuah 2 Sidoarjo for class XI IPS 2 with the number of 43 students had an average of learning outcomes 76 as classroom control and class XI IPS 1 total 47 students with an average value of learning outcomes 76 as a class experiment.

### **Research Instruments**

The research instrument is said to be good if it can be measured. Test instrument used to determine the validity of test instruments, level of difficulty, different power, the validity of the item, and the item reliability. Before the instrument is used to retrieve the data, this instrument needs to be tested prior to high school students Hang Tuah 2 Sidoarjo who have obtained the material contamination and environmental damage that can be minimized error rates matter and to determine whether the problem is made feasible to be used. Form test in the form of essays made researchers with the amount of 5 items.

### **Validator**

The validity of these experts are used to test the matter prior to the experiment on a trial class. Testing the validity of a matter by experts carried out to show that the criteria about who made good. Further trials conducted in class testing instruments, then calculated the validity of the item, level of difficulty, different power, and reliability.

### **Item level of difficulty Problem**

Difficulty level of items is used to determine the level of difficulty about the item. To determine the feasibility of the technique used is to involve all students (study population). According Purwanto (2005), to determine the level of difficulty of the analysis item can be used the following formula:

$$TK = \frac{\sum Ska + \sum Skb}{Sm (nka + nkb)} \times 100\%$$

Description:

$\sum Ska$ : the number of errors over the group

$\sum Skb$ : the number of errors bottom group

$Sm$ : maximum score given for correct answers

$NKA$ : the number of students over the group

$NKB$ : the number of students under the group

### Different power

Distinguishing test is used to distinguish the ability of groups of students who are good (top group) and a group of students are less intelligent (bottom group). How to analyze the required data from the different power groups of the upper and lower groups, each 27% of the entire population. To determine the upper classes and lower classes is to rank based on total score.

According Purwanto (2005), an essay test different power can be calculated with the following formula:

$$DB = \frac{\Sigma Skb - \Sigma Ska}{\frac{1}{2} Sm (nka + nkb)}$$

Description:

DB: different power

$\Sigma Ska$ : the number of errors over the group

$\Sigma Skb$ : the number of errors bottom group

$Sm$ : maximum score for correct answers

$NKA$ : the number of students over the group

$NKB$ : the number of students under the group

The calculation results compared with the classification criteria of different questions in Table 3.2 below:

**Table 3.2 Criteria for Different Power Problem**

Criteria	Clasification
0,7 – 1,00	Very Well
0,40 – 0,69	Well
0,20 – 0,39	Enough
0,00 – 0,19	Ugly
Negatif	Ugly

(Sumber: Purwanto, 2005)

### Validity

Validity is a measure that indicates the level of validity or authenticity of an item instrument Arikunto (2006). To test the validity of items, be tested empirically. The test result should be sought validity of each item item by item scores correlate with the total score. Analysis of the validity of each item in this study using product moment correlation with SPSS 16.0 for Windows. The results of calculations performed by comparing the degree of validity of the result with R table for every problem can be seen in the corrected item-total correlation, while r table can be seen in Table 3.3 below:

**Table 3.3 Criterion validity tests on Taraf Significant Items 95%**

<b>Coefisien Corelation</b>	<b>Clasification</b>
0,800-1,000	Very t valid
0,600-0,7999	Valid
0,400-0,599	Enough valid
0,200-0,399	Less valid
0,000-0,199	Invalid

(Sumber: Purwanto, 2005)

### **Reliability**

Reliability items express the degree of confidence a problem. Arikunto (2006) explained reliability refers to the terms of an instrument sufficiently reliable to be used as a means of collecting data because the instrument is good. Reliability analysis items in this study using Cronbach's alpha statistic test with SPSS 16.0 for Windows.

Criteria for determining each item that is reliable or not is to compare the results with the count  $r_{table}$ . If  $r_{hitung} > r_{table}$  with a significant level of 5%, then the matter is deemed reliable item. Or in other ways that the determination of the reliability of items by comparing the value of  $r$  count with reliability. Item-level reliability criteria can be seen in table 3.4 as follows:

**Table 3.4 Value Reliability Problem**

<b>Value Reliability</b>	<b>Criteria</b>
0,80 – 1,00	Very High
0,60 – 0,79	High
0,40 – 0,59	Enough
0,20 – 0,39	Low
0,00 – 0,19	Very Low

(Sumber: Purwanto, 2005)

### **Data Collection**

Collecting data in this study is used to obtain the desired data with the hypothesis. The research data obtained from the test are the same shape. Tests were conducted in this study is a pre-test and post-test. Pre-test was used to determine the ability of students before the beginning of untreated and post-test after the treatment was given either the experimental and control class. The calculation results obtained from the difference data from the pre-test and post-test (gain score) is used for hypothesis testing. About the pre-test and post-test were used in the experimental class and control class has the same shape and number of corresponding competence problem-solving skills.

### **Data Analysis**

Analysis of data collected in this study using statistical methods. The analysis includes: descriptive and inferential statistics. Descriptive statistics were used to analyze the description of the form of tables, graphs, and a histogram of the average value, frequency, and standard deviation in order to know the characteristics of the data obtained by researchers. Inferential statistical analysis was used to test the hypothesis of a difference between the post-test and pre-test studies. T-

test was used as an analysis to examine the effect of Problem Based Learning model to the learning outcomes of high school students. Analysis of this data can be completed with SPSS 16.0 for Windows.

## RESULTS

### Data pretest Class Experiment and Control

Pretest is defined as a set of questions, which is given before the learning, which is directly related to the knowledge, skills, or attitudes to be learned (in Degeng Hartley and Davies, 2013). Furthermore Degeng (2013) explained that the pretest sensitizing students towards learning situations that will follow.

Pretest purpose of this research is to measure the initial ability of students related to learning to be provided, so that the new teaching can improve students' abilities before beginning. Student pretest results presented in the form of images average values as follows:

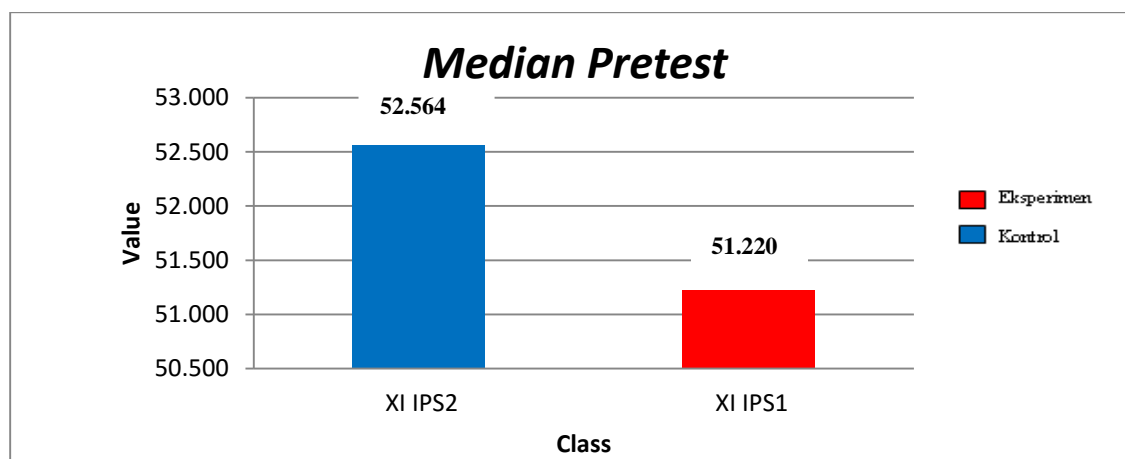
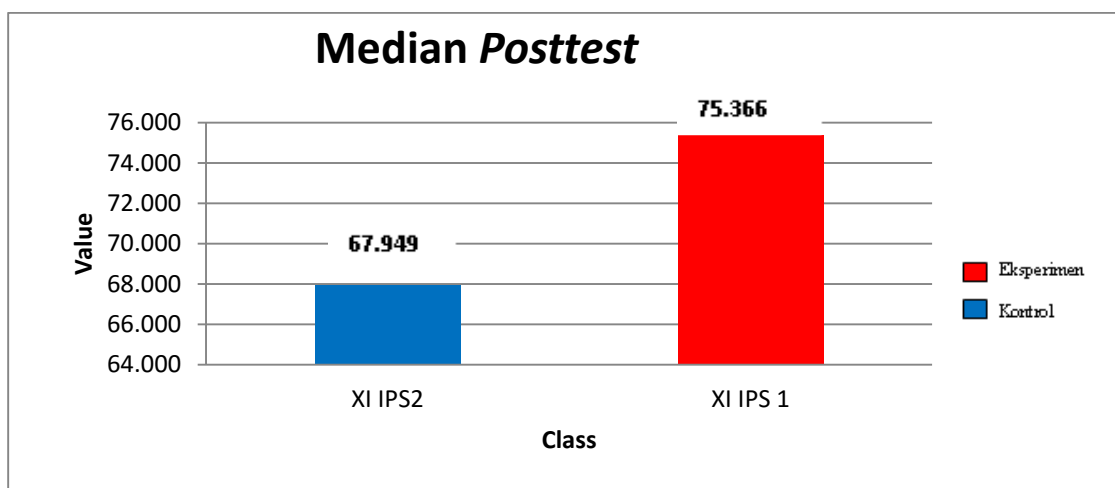


Figure 4.1. Median Value Pretest

From the figure 4.1 (bar chart) above tells us that the average value of a class XI student pretest IPS1 lower than the average value of a class XI student pretest IPS2,  $51.220 < 52.564$ .

### Data posttest Class Experiment and Control

Posttest here is a set of questions given to students of class XI IPS1 after being given treatment using Problem Based Learning model and IPS2 XI classes are taught using instructional lectures and discussions. Posttest in this study serves to measure the extent of the effect of a provision of treatment (study). Posttest measurement results that have been done are represented by images (bar chart) the following:



**Figure 4.2. Median Value Posttest**

Figure 4.2 (bar chart) The above shows that the average value posttest students were given treatment using Problem Based Learning model (XI IPS1) higher than students taught using instructional lectures and discussions (XI IPS2), namely  $75.366 > 67.949$ .

**Gain Score Data**

Data gain score is used to test hypotheses for the experimental and control classes. The data used is the difference of the data value of students' pretest and posttest. Gain score calculation results can be seen in table 4.8 below:

**Tabel 4.8. Group Statistics**

Group Statistics							
	Clasa	N	Pretest	Posttest	Mean	Std. Deviation	Std. Error Mean
Gain score	Class Experiment	41	51,220	75,366	24.1463	7.97672	1.24575
	Class control	39	52,564	67,949	15.3846	7.01358	1.12307

Data table 4.8 above shows that the gain score of students taught using problem-based learning model (experimental grade) was higher than students taught gain score teaching methods lectures and discussions (control group), namely:  $24.1463 > 15.3846$ .

Data Analysis The data used to test the hypothesis that gain score. Before testing the hypothesis, the normality of the data needs to be tested first. The results of the normality test data have been calculated with SPSS 16.0 as follows:

**Tble 4.7. Test of Homogeneity of Variance Data Gainscore**

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
gainscore	Based on Mean	.594	1	78	.443
	Based on Median	.464	1	78	.498
	Based on Median and with adjusted df	.464	1	76.223	.498
	Based on trimmed mean	.613	1	78	.436



Test of homogeneity of variance table 4.7 Levene Statistic values obtained 0.594 with significance ( $p = 0.443$ ). That is homogeneous data, or in other words there is no difference in variance value gainscore class XI student of class XI IPS1 with IPS2, since  $0.443 > 0.05$ .

The next hypothesis test with parametric statistical tests, namely t-test. The calculation results of t-test with SPSS 16.0 as follows:

**Tble 4.9 Independent Samples Test**

		Independent Samples Test								
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
gainscore	Equal variances assumed	.594	.443	5.207	78	.000	8.76173	1.68270	5.41173	12.11173
	Equal variances not assumed			<u>5.224</u>	<u>77.532</u>	.000	8.76173	1.67726	5.42225	12.10121

Value t-test for Equality of Means obtained t count equal to 5.224 and  $t_{table}$  with (df) 78 and alpha 5% is approximately 2.000. It means "There is a difference in the results of learning geography students taught using the model of Problem Based Learning with students who are taught by the teaching methods of lecture and discussion", that is indicated by the value  $5.224 > 2.000$ .

### Hypothesis Testing

Table 4.9 shows that the value of t-test for Equality of Means obtained  $t_{hitung}$  at 5.224 and  $t_{table}$  with (df) 78 and alpha 5% is approximately 2.000. So based on the results of statistical calculations can be concluded that the Problem Based Learning model affect the results of high school students learning geography in matter of pollution and environmental damage.

### Findings

The findings in this study is the Problem Based Learning model a significant effect on the results of high school students learning geography in matter of pollution and environmental damage.

## DISCUSSION

Results of the data analysis scores geography student learning outcomes, indicating that an increase in average achieved experimental class from becoming 75.366 51.220 24.146 with the increase. Although the control class also increased score of 15.385 or 52.564 into 67.949, but when compared with the experimental class, increase in the average scores higher learning outcomes. Difference scores increase learning outcomes experimental class and control is equal to 8.761. Thus, it can be concluded that the model of Problem Based Learning significant effect on the results

of high school students learning geography. This is evidenced by the results of the calculation of the value of the t-test for Equality of Means obtained  $t_{hitung}$  5.224 and  $t_{tabel}$  with (df) 78 and alpha 5% is approximately 2.000.

Results of this research is also supported by the results of previous studies to the discipline of geography ever undertaken by Pawson et al. (2006) that the Problem Based Learning model is very suitable to be applied in the study of geography. Geography is a multidisciplinary study (involving various aspects of the physical and social). This multidisciplinary learning strategies is the main character of the Problem Based Learning, as it is necessary to solve the problem of diverse sources of information and data, a variety of ideas and scientific background. Pawson research difference with this study is to determine learning outcomes with matter pollution and environmental damage.

Tonts research results (2011) explained that the implementation of Problem Based Learning gradually-anggsur give a good reaction for the students than lecture. Research results more students enjoy learning with Problem Based Learning Model. The problems that must be solved in the research students Tonts ie land degradation in field studies, whereas in this study is a quasi experiment with matter pollution and environmental damage.

Findings Vilhena and Maria (2010) showed that the Problem Based Learning in learning geography will provide flexibility to the process of scientific thinking independently for students. Scientific thought processes as new knowledge for students. Differences Vilhena and Maria conducted research with a case study in urban geography teacher with the material problems of the population and the environment, whereas this study used a quasi-experimental with matter pollution and environmental damage.

Findings Morgano and Leite (2013) showed that the Problem Based Learning can develop pedagogical abilities of students, especially in science geography. Problems presented by the teacher in the learning process as the initial idea to learn for students. Research results show that teachers who have been teaching more than 16 years have low motivation in giving the concept of the problem to the students. Research Morgano and Leite with the case study method to geography teachers based on gender in the implementation of Problem Based Learning the lessons ipa and geography, while the difference with this study is to use a quasi-experimental.

Larasati research results (2014) explained that the Problem Based Learning model affect the problem-solving ability High School Geography. T-test results indicate that the effect on the Problem-Based Learning problem-solving skills with significant value  $0.010 < 0.05$ . Larasati research to determine the critical thinking skills to solve problems of the population, while the difference with this study is to determine learning outcomes in the matter of pollution and environmental damage.

Student learning outcomes that follow Problem Based Learning is better than the model of lecture and discussion. This is presumably because: firstly Problem Based Learning model using the problem of pollution and environmental damage that occurred in the district of Sidoarjo in learning. The problems of environmental pollution and damage to real make students integrate the material obtained in the form of classroom theory with real problems occur in Sidoarjo.

Contextual or real problems for students can use to explore the knowledge as a learning process. The troubleshooting process in the form of a case of pollution and environmental degradation require more specific information from sources in the field. Sources of information that can be obtained in the form of direct observation of cases of pollution and environmental damage, conduct interviews with people who are more expert as the head of the environment, the community around the factory, and the factory workers.

The application of problem-based learning by observation in the field also requires a variety of resources such as the Internet, newspapers, and reference books to strengthen problem-solving solutions already in the investigation. This is in line with the opinion of Jacobsen (2009) that the understanding and implementation of Problem Based Learning requires that students use information from various types of problem solving. Thus, students can construct knowledge as a whole, because it has been linked to one another between the material that learned in class to real life. While students in the control class only learn based on reference books and tend to be monotonous. Knowledge of students during the learning process is limited to the material of the reference and the teacher's explanation.

Problem Based Learning model which is based on the problem of pollution and environmental damage in Sidoarjo motivate students to think scientifically. Curiosity causes of pollution and environmental damage triggers the motivation of students to develop creativity either individually or in groups in the search for solutions. Development of student thinking caused by contextual issues that were encountered in the environment. Problems authentic trigger students to conduct an investigation, so the effect on the ability of problem solving.

The troubleshooting process triggered by the curiosity of the student which is then written to report the results of scientific investigations in the field. The report has been written will provide insight to the student in constructing metacognitive knowledge, so that learning becomes meaningful. This is in line with the opinion of Duch (2001) that the advantages of Problem Based Learning among students knowledge gained from the analysis of the intellectual capabilities based on real problems, making learning more meaningful and can provide benefits and new experience for the students, because the problems are solved have relevance to everyday life -day.

Second, in addition to contextual issues that must be solved in the learning process. Students will be the focus and deepen to master the material contamination and damage to the environment

as a whole. Giving real problem in Problem Based Learning will provide the opportunity for students to be more active in the learning process. This is in line with the opinion of Dimiyati and Mudjiono (2009) that students will become active in learning to optimize the intellectual and emotional abilities to acquire knowledge, skills, attitudes, and values.

Students will have a greater role in the process of learning of knowledge that has not been understood by optimizing capabilities. The active role of students during the learning process in the form of work, critical thinking, creative, and communicate it will provide new experiences for students. While the control class students study general problems from the use of reference books the school library. It is difficult for students to construct thinking skills to deepen the knowledge of information learned.

Implementation of Problem Based Learning in the experimental class is different from learning in the classroom lecture and discussion of the control, where the learning lectures and discussions tend to be less challenging students to develop thinking ability. By contrast, in the experimental class, students are encouraged to understand directly the problems of pollution and environmental damage that occurred in the neighborhood as a form of knowledge. This is to motivate the students to develop thinking skills possessed either individually or in groups.

Problem Based Learning Differences with lectures and discussions lies in the given problem. Issues for discussion are not the same as the problems in Problem Based Learning. Learning lecture and discussion refers to the material covered by the teacher. While the problems in Problem Based Learning requires appropriate explanations phenomena of pollution and environmental damage in the field. Problem-solving process will provide new knowledge for students to link classroom theory with real cases. This is in line with the opinion of Sumarmi (2012) that the difficult learning geography covered only theoretical in the classroom but need to connect with environmental conditions.

Problem Based Learning puts students proficient and not proficient in the same classroom. These conditions will create an atmosphere of mutual learning among students add information. Differences in the ability of a diverse student can be resolved by classifying based on academic ability. This is consistent with reports Morgano and Leite (2013) which states that the Problem Based Learning can develop pedagogical abilities of students, especially in science geography. These results will improve motivation, memory, critical thinking, and curiosity in students.

The attitude of the students analysis that includes direct observation and interviews on the field the better to communicate than to ask the teacher of geography. Analytical thinking skills students will develop a sense of sympathy and care for the environment both social and academic. This is in accordance with the opinion of Duch (2001) that the Problem Based Learning as one of

the educational strategies that help students build skills and communication inferences to be successful at this point.

The problems of pollution and environmental damage is presented the teachers in the learning process sebagai initial idea to learn for students. The problems to be solved will give students the opportunity to conduct direct investigations. Investigations were carried out either individually students in groups to seek solutions to the problems of pollution and environmental damage.

Students in groups, amounting to 5 people investigate cases of pollution and environmental damage in Sidoarjo, especially for industrial estates. As a group of students preparing scientific reports to discuss as a result of the investigation. Scientific report which has been prepared from each group then presented the results to the other groups in the class. It is expected that students can convey scientific information and do not deviate from the material being studied. For more details steps Problem Based Learning which have been implemented in the experimental class is class XI IPS 1 SMA Hang Tuah 2 Sidoarjo can be found in Annex 2.

Problem Based Learning in addition there is excess was found also contained errors during the learning process. Flaws found in the study during the learning process are: (a) Teachers of subjects did not understand the steps in Problem Based Learning, having never implement it to students; (b) It takes a long time, especially when conducting investigations on the ground; (c) The number of students who pretty much amounted to 47 students made learning activities are often not conducive; and (d) Students need a teacher facilitator in conducting investigations in the field.

Application of Problem Based Learning in this study is already prepared well in advance. Nevertheless still found weaknesses in the current implementation. Weaknesses Problem Based Learning results of this study supported the opinion Dasna (2005) and Sanjaya (2008) which includes: (1) When students do not have the interest or the belief that the problems are studied hard to solve, then students will be reluctant to try; (2) The success of the learning strategy with Problem Based Learning requires a lot of cost and time for preparation; (3) Demand that teachers make lesson planning more mature; (4) The number of students in a class is not too much, ideally (25-35 students); (5) Changing habits of students learn by listening to and receiving information from teacher to learn a lot of thinking to solve the problem is its own difficulties for students; (6) For students who are lazy purpose of such methods can not be achieved; (7) Not all subjects can be applied with this method.

## **Conclusion**

Based on the results of data analysis and discussion of the results, it can be concluded that the model of Problem Based Learning significant effect on the results of high school students

learning geography in matter of pollution and environmental damage. Things are supposed to influence the learning output, namely: (a) Problem Based Learning can motivate students to think scientifically demonstrated through the work of the report form; and (b) the student is able to control during the learning process with contextual material.

### **Suggestion**

Based on the research findings, suggestions that need to be delivered to teachers in the implementation of Problem Based Learning model as learning innovations include: (a) Using the problems in the form of a film or video as a source of student learning in the classroom; and (b) Provide more time and guidance to students in finding solutions of the problems being faced outside school hours.

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## ANALYSIS ON THE ABILITY OF ELEMENTARY SCHOOL STUDENT WHO HAD HIGH MATHEMATICS ABILITY IN MAKING THE EQUATION OF FRACTIONS

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### ABSTRACT

The purpose of this study was to analyze the ability of fifth grade elementary school student who had high mathematic ability in making the equation of fractions. This kind of research was qualitative by a student subject. Data collection was conducted by giving a test to the subject, continued by interviews. The next stage was data analysis, include reduce the data, presentate the data, conclusion and verificate the data. Subject was given a test containing an equation  $\frac{4}{5} - a = \frac{1}{4}$  as initial equation. Then, subject was asked to make an another equation as equivalent as initial one as much as possible. The result test indicated that subject able to make the eleven equations correctly. The following steps were (1) subject changed the initial equation element position; (2) subject refered on  $\frac{4}{5} - \frac{1}{4} = a$ , then changed both elements known to the another equivalent fraction; (3) subject changed the operan known at initial equation to the another equivalent fraction without changed the position of elements at initial equation ; (4) subject refered on  $a + \frac{1}{4} = \frac{4}{5}$ , then changed both elements known to the another equivalent fraction; (5) subject changed the element position from initial equation, then added both elements with an element or an  $a$ .

**Keywords:** analysis, ability to make equation, fraction

### I. INTRODUCTION

The research is inspired by Piaget's theory of reversibility. Reversibility means the person mental ability to change the mind purpose to the original point (Piaget via Slavin, 2008: 48). While (Krutetskii, 1976: 287) explains that reversibility is the person thinking to build up the reversible sides. Furthermore, Krutetskii identifies one of the categorized mathematics ability related to success in solving the problem, it is reversibility. On the other hand, student mathematics ability has the role in solving mathematical problem. It means that reversibility affects the student ability to solve the problem. Whereas problem solving is the learning mathematics focused. This is constructed by NCTM (2000: 52) that expands problem solving is the integral part of learning matematics. It is relevant with Soedjadi (1992: 33) states mathematics should be directed to develop the student future live transferable ability.



Reversibility is the person thinking ability to build up the reversible sides. It means that reversibility has two reversible ways, they are beginning side to the final one as the reached goal, and the final side returns to the beginning one. However, research focussed is how the student thinking ability from the beginning side to the final. The beginning side is the first equation test given. Then, subject asked to make many equations as equivalent as the beginning one. So the equation student made means the reached goal.

The defined equation related to fractions and arithmetic operations. Fractions is one of the pre-requisites for understanding the subsequent and the intertwined materials of fractions concept. If student do not understand the basic, student will difficulty in studying further. Research subject is the fifth grade of elementary school student by considering the fractions is the first time material given at elementary school. In addition, Piaget states the ability of building the two-way relation develop in concrete operational stage, it is about 7 to 11 years old. It means reversibility begins on elementary school student. But focus of research subject is student who had high mathematics by considering the result of research is used as basic by the teacher to teach fractions and arithmetic operations. In expectation is the ability the other student can be same or equal with ability of student who had high mathematics especially fraction and arithmetic operation materials. Based on the descriptions, researcher interested analyzing the elementary student ability in making fractions.

## **II. RESEARCH METHOD**

### **Research Design**

This study purposed analyzing the elementary school student ability in making fractions. Therefore, this is a descriptive qualitative research. Researcher gave a test to the subject, then researcher conducted interview to the subject for comprehending about the things of uncovered test yet. Furthermore, the result data analyzed based on the framework established in theoretical study.

### **Research Subject**

Research subject was the fifth grade of elementary school student who is capable in high mathematic. High mathematic information was obtained by mathematic test and consultation with the teacher

### **Research Instrument**

The main instrument is the researcher herself. While supporting instrument are as follows:

1. Test used to obtain the data about subject's ability delineation in making equation. A test contains an equation then subject was asked to make as many as another equivalent equation.
2. Interview guideline in this study is semi-structured or opened. Subject was interviewed based on the work result

## Research Procedure

Research procedure consists of three stages described by following:

### 1. Preparation Stage

The research preparation stage examines theory in making equation's ability refers to part of reversibility characteristic.

### 2. Implementation Stage

The research implementation stage selectes the subject. Furthermore, researcher give a test to the subject, then followed by interviewed based on the work resultt.

### 3. Analysis Stage

The research analysis stage analyzes the data and report writing.

## Data Analysis Technique

Result data was analyzed with references to (i) the equation subject made number (ii) subject's way in making each the beginning equivalent equation. Analysis conducted after finishing the interview. Then data analysis conducted by following step: (1) data reduction; (2) data exploring; (3) drawing conclusion.

## III. RESULT AND DISCUSSION

Before research was conducted, researcher choose the subject previously, it is fifth grade of elementary student of MIN Kauman Jombang. Furthermore, researcher conduted the research and analyzed the result data

## Data Analysis Finding and Discussion

### 1. Test result

A test was given by the researcher such as the following:

<p>TEST (30 minutes)</p> <p>Given the following form:</p> <p>Form: "<math>\frac{4}{5} - a = \frac{1}{4}</math>"</p> <p>Rewrite the above from to the "another similar form" as much as possible</p>
---

Fig. 1. Test Instrument

The followings are the the result subject in making the equation

**Table 1 : Subject Equation Made**

Equation Code	Subject Equation Made
P1	$\frac{4}{5} - \frac{1}{4} = a$
P2	$a + \frac{1}{4} = \frac{4}{5}$
P3	$\frac{8}{10} - \frac{2}{8} = a$
P4	$\frac{8}{10} - a = \frac{1}{4}$
P5	$\frac{4}{5} - \frac{2}{8} = a$
P6	$a + \frac{3}{12} = \frac{8}{10}$
P7	$\frac{1}{4} + \frac{1}{4} + a - \frac{4}{5} = \frac{1}{4}$
P8	$\frac{4}{5} - a - \frac{1}{4} + a = a$
P9	$\frac{1}{4} + \frac{4}{5} = \frac{4}{5} - a + \frac{4}{5}$
P10	$\frac{4}{5} + a = a + a + \frac{1}{4}$
P11	$\frac{1}{4} + a = \frac{4}{5}$

Based on the test result, known the subject has made 10 the beginning equivalent equation.

While subject way in making the beginning equivalent equation was obtained from interview. The followings are the subject way in making each equation

**Table 2: Subject Way in Making Each Equation**

Equation Code	Equation Subject Made	Equation Making Way
P1	$\frac{4}{5} - \frac{1}{4} = a$	The beginning equation was $\frac{4}{5} - a = \frac{1}{4}$ subject made P1 by moving $\frac{1}{4}$ elements to the right side and moving a to left side, obtained $\frac{4}{5} - \frac{1}{4} = a$ as P1
P2	$a + \frac{1}{4} = \frac{4}{5}$	The beginning equation was $\frac{4}{5} - a = \frac{1}{4}$ . Subject made P2 by moving a side. It should be obtained $\frac{4}{5} = \frac{1}{4} + a$ , but subject wrote in $a + \frac{1}{4} = \frac{4}{5}$ form by reasoning there were an equal sign "=", so $\frac{4}{5} = \frac{1}{4} + a = a + \frac{1}{4} = \frac{4}{5}$ . Thus, obtained $a + \frac{1}{4} = \frac{4}{5}$ as P2.
P3	$\frac{8}{10} - \frac{2}{8} = a$	The beginning equation was $\frac{4}{5} - a = \frac{1}{4}$ . Subject made P3 in reference to P1, it was $\frac{4}{5} - \frac{1}{4} = a$ because of the beginning equation made. Then subject changed both of known elements on $\frac{4}{5} - \frac{1}{4} = a$ to an another equivalent fraction. It changed $\frac{4}{5}$ into $\frac{8}{10}$ and $\frac{1}{4}$ into $\frac{2}{8}$ obtained $\frac{8}{10} - \frac{2}{8} = a$ as P3

P4	$\frac{8}{10} - a = \frac{1}{4}$	<p>The beginning equation was <math>\frac{4}{5} - a = \frac{1}{4}</math>. Subject made P4 by changing the side knowed on beginning equation to an another equivalent fraction. It changed <math>\frac{4}{5}</math> as <math>\frac{8}{10}</math> obtained <math>\frac{8}{10} - a = \frac{1}{4}</math> as P4</p>
P5	$\frac{4}{5} - \frac{2}{8} = a$	<p>The beginning equation was <math>\frac{4}{5} - a = \frac{1}{4}</math>. Subject made P5 in reference on P1, it was <math>\frac{4}{5} - \frac{1}{4} = a</math> by reasoning P1 the beginning equation made. Then subject changed one of the element known by <math>\frac{4}{5} - \frac{1}{4} = a</math> into an another equivalent fraction. It changed <math>\frac{1}{4}</math> into <math>\frac{2}{8}</math> obtained <math>\frac{4}{5} - \frac{2}{8} = a</math> as P5.</p>
P6	$a + \frac{3}{12} = \frac{8}{10}$	<p>The beginning equation was <math>\frac{4}{5} - a = \frac{1}{4}</math>. Subject made P6 in reference on P2, it was <math>a + \frac{1}{4} = \frac{4}{5}</math>. Then it changed both of elements known by P2 into anan another equivalent fraction. It changed <math>\frac{4}{5}</math> into <math>\frac{8}{10}</math> and changed <math>\frac{1}{4}</math> into <math>\frac{3}{12}</math> obtained <math>a + \frac{3}{12} = \frac{8}{10}</math> as P6.</p>
P7	$\frac{1}{4} + \frac{1}{4} + a - \frac{4}{5} = \frac{1}{4}$	<p>The beginning equation was <math>\frac{4}{5} - a = \frac{1}{4}</math>. Subject made P7 by moving the a and <math>\frac{4}{5}</math> side, obtained <math>0 = \frac{1}{4} + a - \frac{4}{5}</math>. Then added the</p>

		<p>sides of <math>0 = \frac{1}{4} + a - \frac{4}{5}</math> with <math>\frac{1}{4}</math>.</p> <p>Obtained <math>\frac{1}{4} = \frac{1}{4} + a - \frac{4}{5} + \frac{1}{4}</math>, but</p> <p>subject wrote <math>\frac{1}{4} + a - \frac{4}{5} + \frac{1}{4} = \frac{1}{4}</math></p> <p>as P7</p>
P8	$\frac{4}{5} - a - \frac{1}{4} + a = a$	<p>The beginning equation was <math>\frac{4}{5} - a = \frac{1}{4}</math>. Subject made by moving the <math>\frac{1}{4}</math> side, obtained <math>\frac{4}{5} - a - \frac{1}{4} = 0</math>.</p> <p>Then added the sides of <math>\frac{4}{5} - a - \frac{1}{4} = 0</math> with a, obtained <math>\frac{4}{5} - a - \frac{1}{4} + a = a</math> as P8.</p>
P9	$\frac{1}{4} + \frac{4}{5} = \frac{4}{5} - a + \frac{4}{5}$	<p>The beginning equation was <math>\frac{4}{5} - a = \frac{1}{4}</math>. Subject made P9 by changing <math>\frac{4}{5} - a = \frac{1}{4}</math> form into <math>\frac{1}{4} = \frac{4}{5} - a</math> by reasoning there was an equal sign "=", so <math>\frac{4}{5} - a = \frac{1}{4}</math> same as <math>\frac{1}{4} = \frac{4}{5} - a</math>. Then added the sides of <math>\frac{1}{4} = \frac{4}{5} - a</math> with <math>\frac{4}{5}</math>, obtained <math>\frac{1}{4} + \frac{4}{5} = \frac{4}{5} - a + \frac{4}{5}</math> as P9</p>
P10	$\frac{4}{5} + a = a + a + \frac{1}{4}$	<p>The beginning equation was <math>\frac{4}{5} - a = \frac{1}{4}</math>. Subject made P10 by moving the a side, obtained <math>\frac{4}{5} = a + \frac{1}{4}</math>. Then operated the sides of <math>\frac{4}{5} = a + \frac{1}{4}</math> with a, obtained <math>\frac{4}{5} + a = a + a + \frac{1}{4}</math> as P10</p>
P11	$\frac{1}{4} + a = \frac{4}{5}$	<p>The beginning equation was <math>\frac{4}{5} - a = \frac{1}{4}</math>. Subject made P10 by moving the a side. It sholud be</p>

		<p>obtained <math>\frac{4}{5} = \frac{1}{4} + a</math>, but subject wrote <math>\frac{1}{4} + a = \frac{4}{5}</math> form as P11</p>
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Based on the table 2 above, obtained the descriptions of subject way in making the equation of fractions

1. Subject made a new equation by the changing the side on beginning equation without changing these element to an another equivalent equation. At this category divided by two, they were as follows

a. Moving the  $\frac{1}{4}$  and elements side

The test beginning equation given was  $\frac{4}{5} - a = \frac{1}{4}$ . Subject made a new equation by moving the  $\frac{1}{4}$  of right side and moving the a of left side. The subject equation made included P1 category was  $\frac{4}{5} - \frac{1}{4} = a$ .

b. Moving the element side

A test beginning equation given was  $\frac{4}{5} - a = \frac{1}{4}$ . Subject made a new equation by moving the a element. The subject equation made included P2 category was  $\frac{1}{4} + a = \frac{4}{5}$ , and P11 category was  $a + \frac{1}{4} = \frac{4}{5}$ . But P11, subject also used the commutative to arithmetic, it was  $\frac{1}{4} + a = a + \frac{1}{4}$ .

2. Subject made a new equation in reference on P1, it was  $\frac{4}{5} - \frac{1}{4} = a$  by reasoning P1 made from the beginning equation. Then, subject changed the known sides of  $\frac{4}{5} - \frac{1}{4} = a$  to an another equivalent equation. The subject equation made included P3 category was  $\frac{8}{10} - \frac{2}{8} = a$  and P5 category was  $\frac{4}{5} - \frac{2}{8} = a$ .

3. Subject made a new equation by changing the known side on beginning equation to an another equivalent equation. The subject equation made included P4 category was  $\frac{8}{10} - a = \frac{1}{4}$ .

4. Subject made a new equation in reference on P2, it was  $a + \frac{1}{4} = \frac{4}{5}$ . Then, changed the known sides on P2 to an another equivalent equation. The subject equation made included P6 category  $a + \frac{3}{12} = \frac{8}{10}$ .

5. Subject made a new equation by moving the side of beginning equation, then added the sides with the fractions. These category divided by two parts, they are as follows
  - a. Moving the one of beginning equation element then added those sides by fractions, the included category of equation was P8  $\frac{4}{5} - a - \frac{1}{4} + a = a$  and P10  $\frac{4}{5} + a = a + a + \frac{1}{4}$ .
  - b. Moving the beginning equation side elements then added those sides by fractions, the included category of equation was P7  $\frac{1}{4} + a - \frac{4}{5} + \frac{1}{4} = \frac{1}{4}$ .
6. Subject made a new equation by moving one of these then added the sides by the fractions. The included category of equation was  $\frac{1}{4} + \frac{4}{5} = \frac{4}{5} - a + \frac{4}{5}$ .

#### IV. CONCLUSION

Based on the result analysis obtained the conclusion about subject ability in making of equation. It was a subject making the eleven equivalent equations  $\frac{4}{5} - a = \frac{1}{4}$ . The subject way in making the beginning equivalent equation as follows

1. Subject only moved the beginning equation of element side.
2. Subject referenced at  $\frac{4}{5} - \frac{1}{4} = a$ , then changed the known elements at  $\frac{4}{5} - \frac{1}{4} = a$  to an another equivalent fractions
3. Subject changed the known position on beginning equation to an another equivalent fractions
4. Subject referenced at  $a + \frac{1}{4} = \frac{4}{5}$ , then changed the known sides on  $a + \frac{1}{4} = \frac{4}{5}$  to an another equivalent fractions
5. Subject moved the sides of beginning equation, then added the sides by fractions
6. Subject moved one of the beginning equation sides then added those equation sides by the fractions

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## DEVELOPING LANGUAGE GAMES FOR TEACHING ENGLISH TO THE EIGHTH STUDENTS OF SMP NEGERI 1 TULUNGAGUNG

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Many experts (Hadfield, 1990; Byrne, 1995; Ersoz, 2000; Kim, 1995; Uberman, 1998) of language teaching methodology agree that playing a game is a good way to learn English. Hadfield (1990) defined games as an activity with rules, a goal and an element of fun. It is a well-planned activity with objectives, rules and fun. This kind of activity will give students a break and at the same time allow students to practice language skills (Ersoz, 2000). Unfortunately, the textbook of the 2013 curriculum supplied by the government does not provide enough language games for learning activities in the English class. To accommodate the students' needs, it surely needs suitable games which can supplement to reinforce the existing materials for them. Providing appropriate games which are attractive will increase the students' motivation in learning English. In addition, the availability of language games that are suitable with the content of the 2013 curriculum cannot be found in the market in Tulungagung even in big cities like Surabaya and Malang. Therefore, developing language games for teaching English to the eighth grade students of SMP Negeri 1 Tulungagung needs to be conducted to bridge the gap.

The Research and Development (R&D) design adapted from Borg and Gall (1983) is employed in this study to develop language games. The model used for designing and developing the games was adapted from Heinich's model (1983). The product was in the form of resource book that consists of two parts: the first one is the teacher's guide and the second part is the photocopiable material. The first part contains the guidelines of how to apply the language games in the class and the second one provides photocopiable materials or forms if it is necessary. The developed games then were validated by the expert and tried-out. The final product of this study is language games. The games have been empirically tested in try-out stage. Therefore, it will be easy for the teachers to apply in their classes.

*Keywords: Developing, Language games, and Supplementary materials*

According to Crystal (2003), "English is a global language". Lauder (2008) stated that English is being used for following technological and scientific improvements and also for better job opportunities. The mastery of English both oral and written will be one of the most crucial competences that should be possessed in order to be able to compete in the global world. Unfortunately, the result of the teaching learning of English is not considered satisfying yet (Lengkanawati, 2004). Madya stated the teaching of English in Indonesia has been unable to achieve the declared goals despite the many efforts made to improve its quality. The government admits that fact as stated in the guideline book of the 2013 curriculum for English subject that the graduates of junior and senior high schools do not have good ability to communicate in English.

There are some problems stated by many experts why it happens and some of them are the teaching material and teaching strategy. According to Yulia (2014), many teachers are still using outdated methods and having very little training in English teaching, many teachers are not trained in English teaching methodology, there is a lack of quality

materials and classes are too large. It means that the students have less chance to have an interactive class that involves integrated skills to enhance their mastery in English.

The government has already issued the newest curriculum, the 2013 Curriculum. It focuses not only on the conceptual perspective but also on the process that tends to student centered learning. All the activities should give the students opportunities to express themselves and show their ability. The teacher should provide some activities that can motivate them to be active and to have a will to participate in the classroom activities.

The teacher who was teaching in the eighth and ninth grades at SMP Negeri 1 Tulungagung has been informally observed that there were some problems faced by the students of the eighth grade concerning the teaching and learning process in the class. The result showed that the students need to have learning activities that will minimize their reluctance to be active in the class as well as their boredom and they wanted to learn English through games and suggested having fun activities in class. Whereas the English teacher avoided using games because of the limited time and lack of sources. The most important was to focus on finishing the target material suggested by the curriculum. Besides, most of activities in English classrooms relied too much on the use of textbook without considering the boredom of the students. Moreover, they found some difficulties to find a resource book that is suitable with the content of the 2013 curriculum. So, the next reason was that there should be a fast track to avoid the boring situation caused by conventional way of teaching learning process. The students need to experience joyful learning activities.

Unfortunately, the textbook of the 2013 curriculum supplied by the government does not provide enough language games for learning activities in the English class. The most suitable one to solve the problem is developing games as reinforcement activities since it has a role as supplementary material for the teaching learning materials and it is developed based on the content of the 2013 curriculum. It can support and complete the material that has already existed. In addition, the availability of language games that are suitable with the content of the 2013 curriculum cannot be found in the market in Tulungagung even in big cities like Surabaya and Malang. Therefore, this supplementary material is to fulfill the need of English teachers for supporting them to teach English to the eighth grade students.

Here, it was explored the language games that aimed as a supplementary material for the eighth grade students. Reviewing the above issue, the problem and the proposed strategy, research entitled 'Developing Language Games for Teaching English to the Eighth Grade Students of SMP Negeri 1 Tulungagung needs to be conducted to bridge the gap.

### **Method**

The Research and Development (R & D) design employed, since the study was intended to develop and validate educational products (Borg and Gall, 1983). It produced language games as supplementary material for the eighth grade students of SMP Negeri 1 Tulungagung. Due to the limited time in conducting this study and the internal use of the product, the procedures of developing the product based on the adapted steps from Borg and Gall model. In this study, the product was designed in seven stages; needs assessment, games development, expert validation, revision I, try out, revision II and finalization. Needs assessment was intended to obtain as much information as possible about the people that are involved in the program including their interest, opinion, experience, and their activities concerning the product being developed. Besides, it was also conducted to acquire the students' and teachers' need in order to be able to design appropriate, practical, and effective product. The main instrument employed to collect data was questionnaire and

interview guide was used as supporting instrument. The data was calculated in percentage, whereas interview guide is presented descriptively.

Developing language games was the next step in which the selected games were organized to be presented in the learning experience. It covered the principles and the model of games development. The principles in developing the games were based on the result of the needs assessment and the review of literature concerning games development. The games should be appropriate with the basic competence stated in the 2013 curriculum, make all students get involved and motivate them in learning of English, be relevant to the language level and characteristics of the students, be meaningful and have fun activities, be easily applied to the classroom environment, accommodate group work and can be applied outside of the class, no time consuming, and provide pictures/cards/board if possible.

These focused on how the preliminary game was developed. There were some steps in developing games adapted from Heinich (1982) including selecting the content, developing the game model, developing the rules, developing the prototype of the game. The following stage to establish after developing the products was expert validation. This step aimed at knowing whether or not the products could be tried out to the subjects. The validation was done by a qualified expert and an experience teacher to make sure that the product can be tried out in the class. Checklists were used to ask the expert's and teacher's feedback. The expert validated the games in terms of language, content, and description of procedure. The expert was given a validation form as the instrument. There was a checklist on each aspect to be validated with open free space. The analysis of the validation was presented in a descriptive way.

The try out was conducted after the experts validate the product. It was carried out in order to identify some weaknesses of the games and to get input and feedback from the students as well as the teacher; hence the weaknesses diagnosed were used to improve the quality of the games. A checklist was distributed to the students and teacher to find out their opinions on the games. It was carried out to determine whether the games were applicable, appropriate, useful, effective, efficient, and attractive to the user. The data obtained from the checklist given to the students was analyzed quantitatively using percentage. After that, the result was converted into quality level of good, fair, and low. The result from observation checklist comes into consideration for revision. The revision gives great impact on determining the quality of the product at the finalization. If the revisions accomplish, the final product was ready to release.

The subjects of this study were the eighth grade students of SMP Negeri 1 Tulungagung of the academic year of 2014/2015. It was VIII-I class that consisted of 32 students. Beside the students, it also involved the English teacher of SMP Negeri 1 Tulungagung due to the fact that a teacher played a very important role in the teaching and learning process.

### **Results**

From the need assessment stage, the result from the questionnaire distributed to the students indicated that 46.9 % of students were very interested and 43.8 % of them were interested in learning English through games. Half of the class said that it was enjoyable to learn English through games and 37.5% of students declared that games were very enjoyable. There were 40.6 % students declared that games were really needed and 50 % of them said that games were needed. The data showed that games were really needed as learning activities in class as proven by the fact that there were 53.1 % of the students who admitted it. Games with pictures, cards, and board were chosen by 65.6 % students whereas word games were voted by 59.4 % of students. There were 37.5 % of students that preferred guessing games and 31.3 % of them chose the games that involved physical movement. The result showed that teacher's explanation was the most common one to be

applied, then doing activities and exercise on textbook. The third ones were presentation and group work. It was different from what the students wanted. Most of them favored outdoor activity. There were 56.3 % of them who preferred. Group work as one of the most favorite activities in class was shown by the result of the questionnaire that there were 75 % students who enjoyed group work and 9.4 % who enjoyed it very much.

The result of the needs assessment indicated that the teacher was less interested as well as did not prefer too much in using games as learning activity in class although she admitted that games were useful when it is applied in the class since the students preferred games than other learning activities. The limited time provided for English was the reason why she seldom used games in teaching learning process. She only chose word games because these kinds of games like puzzle did not consume a lot of time. Most activities she did in the class were doing activities and exercise based on the textbook and student worksheet. In conclusion, the games should have some features in accordance with the result of the needs assessment. They should be various games such that mostly involved group work activities and give them a chance to speak English and to be able to do the learning activity outside the class. It means the games should stimulate students' activeness and interaction. Besides, games with pictures, cards, and board should be available too.

According to the teacher, developing language games which are appropriate with the basic competence of the 2013 Curriculum was good and very useful for both the students and the teacher. The teacher suggested that the games should be able to be applied in class effectively due to the class size. Besides, they should be in line with the material of the 2013 curriculum as well as the students' needs and characteristics.

The first step in games development was selecting the content of the 2013 curriculum basic competence for second semester of the eighth grade. The result of previous step was used as a guideline to determine the topics in developing the games. Due to the limitation of time and resources, not all topics could be covered in the product. The topics selected were elaborated to develop into eleven games. The next step was developing the game model. There were four activities to do: deciding the type of activity, setting the type of the games, determining the skills, and identifying the resources.

Developing the rules was the next step. It was the activity to set the rules and procedure how to play the game. The last step was developing the prototype of the games. The activity was constructing the draft of the game and the resources/material needed. The developed games consisted of 11 units. The process of developing was by modifying, adapting and reordering the games. The games were in the form of resources book for teachers with two main parts, the teacher's guide and the photocopiable material. Each unit of game states topic, type of activity, skill, preparation, language focus, steps and additional notes for teachers.

The next step to accomplish was the validation. This stage involved two validators, the expert and the teacher. The expert validated the developed product in term of language, content, and description of procedure. There were some aspects of the game that needed to be revised. The revision is mostly done with the language and the instruction, but it was only partial revision based on the notes and suggestions written by the expert in the free open space provided in the checklist except for game 1. It was suggested to find another game that is more suitable to the content of the 2013 curriculum. There were several parts in each game that should be simplified. In term of language, there are some games that should be revised because several sentences were not written grammatically. Most of the descriptions and procedures did not have a lot of problems with the language.

The teacher validated in term of effectiveness, content, and suitability. For game one, *Let's be healthy*, the teacher suggested to find another topic because the topic about health was too difficult for eighth grade. So, it was better to find easier material. Besides, the topic was not too relevant with the basic competence since it should be about describing people, animal or object by comparing their characteristics. *The Details* finally replaced *Let's be healthy* because the new one was more suitable with the criteria. As general suggestion, if the games need worksheet or handout, it was better that each group gets more than one worksheet or handout. It would promote the effectiveness since the students could work more easily. The revisions were mostly done with the instructions of the games and there were some suggestions that were added to improve before trying out them in the class. Moreover, there were some aspects suggested to revise by expert, such as the structure of the sentences, the rules of the game, the topic selected, and the tips to maximize the game in the class.

After the stage of validation, the next step conducted was testing the game at the field. This was aimed to gather the data concerning the attractiveness, the practicality and the usefulness of the games. Based on the result of checklist distributed to the teacher, it was concluded that the students were interested and enthusiastic in learning language through games. The data showed that all the games were interesting and there were some games that were categorized as very interesting by the teacher. The data showed that most of the games can be implemented well in the class. It meant that the teacher did not find any difficulties to understand the steps of the games. All the games stimulated interaction among students and make the class become alive.

The second try out checklist was distributed to the students to obtain the some data concerning the attractiveness, the practicality and the usefulness. It turned out that all aspects of criteria met the intended purpose. From the result of the checklist above, it was concluded that the product of the study had met the purpose and the criteria of good games. Some games needed to be revised based on the result of the try out. The revisions were mostly done to the steps of the games since there was not any significant problem when applying the games in the try out stage. The result was used to improve the game for the finalization. The final product consists of eleventh games. The product is in the form of resource book that consists of two parts: the first one is the teacher's guide and the second part is the photocopiable material. The first part contains the guidelines of how to apply the language games in the class and the second one provides photocopiable materials or forms if it is necessary.

### Discussion

Games are effective tools and have many positive aspects (Cervantes, 2009). According to (2004), games can give teachers to create various contexts in which students have to use the language to communicate, exchange information and express their own opinion. Another advantage is that the games help to create a context in which the students do not realize that language items are being practiced (Toth, 1995). Cross (1992) stated that games reduce tension by adding fun and humor to lessons, and they add an element of competitiveness that motivates students to participate. The most important thing is that they provide a great opportunity for teachers to take a backseat and let the students to the activities (Cervantes, 2009).

Some studies related to the use of games in learning English showed the result that confirmed the theories above. Yolageldili (2011) investigated the effectiveness of using games in teaching grammar to young learners. The result found that games were effective in grammar teaching especially for young learners. Based on the study conducted by Zhu (2012), it was found that teaching and learning English by means of language games was effective and efficient in improving students' communicative ability. The results of this

study confirmed with Tang (1992:178) who pointed out that dual coding function of graphic organizers provide learners with both visual and verbal information. The visual information contains the knowledge of the content while the verbal information promoted language acquisition.

### Conclusions

The final version of the product is in a form of printed material that consists of two parts: teacher's guide and photocopiable material. The first part consists of eleven units of games which focus on certain topic, type of activity, skill and language focus as well steps to apply the game in class. Most of the games can be applied well in the class after some revisions suggested by the expert and the teacher. In conclusion the product of this study surely will give advantages for teachers since it provides the language games which are relevant to the basic competence of the 2013 curriculum. The product accommodates various skills of English. It is different from the previous product developed by other researchers. All the games developed were focused only on one skill.

Aside from its benefits, there are still several weaknesses in this media that can decrease its value. This weakness is due to the lack of ability in creating the photocopiable material which cannot provide the better one. The other weakness is that not all the topics in the basic competence can be covered because of the limited time in conducting the study.

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# Modiste: A Novel Method for Enhancing Video Streaming in E-learning

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## ABSTRACT

With the rapidly increasing popularity of mobile devices and emerging video service applications, video streaming in e-learning plays an important role in enhancing learning performance of e-learners. However, enabling the delivery of ubiquitous video streaming to e-learners is a challenging issue due to the heterogeneity of e-learners' mobile characteristics. Some methods have been proposed to address this issue. Nevertheless, the existing methods have not well exploited e-learners' mobile characteristics. Therefore, this work proposes a novel method for video streaming in e-learning by exploiting mobile network and video characteristics. The objective of this work is to maximize e-learners' perceived video quality. The problem of video streaming in e-learning is first mathematically formulated. A novel rate assignment method, namely Modiste, is then presented to solve this problem. Finally, some extensive simulations are performed and show that the proposed method outperforms several state-of-the-art video streaming techniques for e-learning.

**Key Words:** *E-learning, mobile networks, rate assignment, video streaming.*

## 1. Introduction

Recently, the World Wide Web and the popularity of mobile devices make a huge effect to the society where everything and everyone are getting on line and connected. A web thus services as an information hub to share data and knowledge. E-learning which is internet based captured a major role in higher education. E-learning is a form of distance learning and has successfully delivered learning and instructions. Through e-learning, learners are allowed to access the online resources, to discuss with instructors and other learners anytime and anywhere. One of the main characteristics of e-learning is its capability to integrate different media such as text, picture, audio, and video to create more interactive and attractive learning process. Video is a powerful medium being utilized in e-learning. Some studies have deeply investigated the effect of instructional video on learning outcome enhancement [1-2]. However, in previous works, the instructional video which is sent via wireless networks is assumed to be tolerant delay instead of considering time playback deadline. In fact, learners' satisfaction is a key point to obtain maximum effect of e-learning implementation. Therefore, delivering instructional video to learners through wireless networks is a challenging issue.

In wireless networks, learners are generally distributed. Some learners are in good channel quality while others are in poor channel quality. The quality of learners' channel conditions effects their perceived video quality. Learners with good channel quality are able to receive data transmitted in high data rate. Otherwise, learners with poor channel quality are able to receive data sent in low data rate. Hence, the transmission process of instructional video should consider users' channel quality. It is a trade-off between the transmission data rate and the number of learners being served. If higher data rate is employed to transmit video, learners at closer distance with access

point or base station are able to receive video in shorter transmission time while learners with poor channel quality would not be able to receive this video. On the other hand, if lower data rate is employed, more users (including both close and distant users) are able to receive the video but it takes longer transmission time which may exceed playback time.

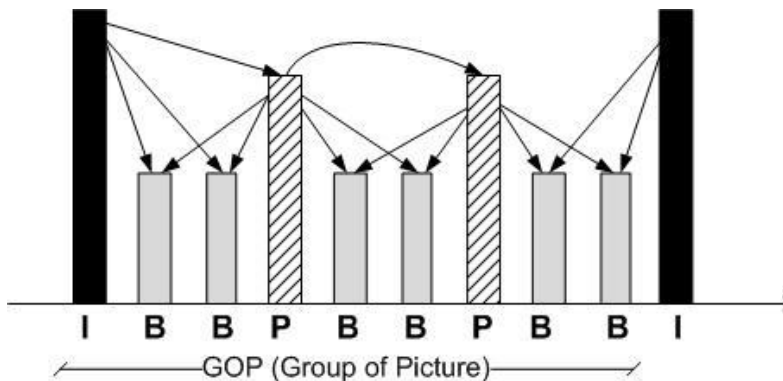
Furthermore, video comprises several frames. In general, according to dependence, video frames are divided into intra-prediction (I), inter-prediction (P), and bi-directional predictions (B) [3]. I-frames are independently to other video frames. P-frames are independent to precedent I-frame or P-frames while B-frames use both previous and forward I-frame and P-frames for reference. To simply illustrate the dependency of video frames, we refer to Fig. 1. Video frame dependency has advantage in data compression.

Some prior works have studied video transmission [4]-[5] and video content delivering in e-learning [1]-[2]. However, the previous works have not exploited video dependency and learner’s mobile characteristic. This work therefore proposes a novel method for instructional video streaming. The goal of this work is to maximize learners’ perceived video quality while they are doing video streaming in e-learning. The proposed method is then referred to Modiste which stands for a novel MethOD for enhancing vIdeo STreaming in E-learning.

The rest of this paper is organized as follows. Problem formulation is presented in Section 2. In Section 3, the detail of Modiste is described. Section 4 describes performance evaluation. Finally, conclusions and future works are provided in Section 5.

## 2. Problem Formulation

In this work, wireless networks are considered to be the environment of the transmission where access point or base station is located in the center of the network and learners are uniformly distributed around it. We assume that there is one instructional video for each transmission. The proposed method is basically could be extended for many instructional videos for each transmission. A video comprises several Group of Pictures (GOPs). Let denote  $G$  as a number of GOPs in a video. One GOP consists of several frames. A number of video frames are symbolized as  $F$ . The instructional video is transmitted frame by frame. The perceived video quality increases as the number of received frames increase. Obviously, each frame has an incremental value. The incremental value is calculated by the difference value of Peak Signal to Noise Ratio (PSNR) between two frames. Let  $q_f$  expresses the incremental video quality of frame  $f$ .  $q_f$  is then formulated as  $PSNR_f - PSNR_{f-1}$ . The data rate transmission is denoted by  $R$  while playback time deadline is denoted by  $T_{max}$ . Each video frame transmission requires time  $t_{f,r}$ . The perceived video quality is expressed as  $Q$ . For the ensuing discussion, symbols that are used are summarized in Table 1.



**Figure 1** Frame sequence of one GOP. The frame at the head of the arrow depends on that at the tail of the arrow

**TABLE 1** List of Symbols

Symbols	Semantics
$G$	A maximum number of GOPs in one video
$F$	A maximum number of video frames
$q_f$	Incremental video quality of frame $f$
$R$	Data rate transmission
$T_{max}$	Playback time deadline
$t_{f,r}$	Video frame transmission requires time
$Q$	Perceived video quality
$I_{f,r}$	Binary function where $I_{f,r}$ is 1 if frame $f$ is transmitted using rate $r$ , otherwise
$N_{f,r}$	Number of learners who can receive video frame $r$ when transmitted in rate $r$
$size(f)$	Video frame size in bits

The objective of this work is to maximize learners' perceived video quality  $Q$  which is formally described as follows.

$$Q = \sum_{f=1}^F \sum_{r=1}^R I_{f,r} N_{f,r} q_f \quad (1)$$

subject to

$$I_{f,r} = \begin{cases} 1, & \text{if frame } f \text{ is transmitted using rate } r \\ 0, & \text{otherwise} \end{cases} \quad (2)$$

$$\sum_{f=1}^F \sum_{r=1}^R I_{f,r} t_{f,r} \leq T_{max} \quad (3)$$

$$\sum_{r=1}^R I_{f,r} \leq 1 \quad (4)$$

$$I_{f,r} \leq I_{f-1,m} \quad , \quad m = \{1, 2, \dots, r\} \quad (5)$$

The objective function of overall visual quality  $Q$  is constrained by (2) – (5).  $I_{f,r}$  indicates binary function where  $I_{f,r}$  is 1 if frame  $f$  is transmitted using rate  $r$ . Otherwise,  $I_{f,r}$  is 0 if frame  $f$  is not assigned to any rate.  $I_{f,r}$  is formally expressed in (2).  $N_{f,r}$  refers to number of learners who can receive video frame  $r$  when transmitted in rate  $r$ . The video playback deadline is constrained in (3) where total transmission of a video is not allowed to exceed playback deadline. If the transmission time exceeds playback deadline, instructional video is dropped. Eq. (4) describes each video frame is sent using at most one data rate. Eq. (5) ensures more important video frame is sent before less important frame. In other words, video frame is transmitted sequentially according to its importance. A brief instance for sequential transmission is as follows. I-frame is transmitted before P-frame and B-frame while P-frame is transmitted before B-frame. The reason is when either P-frame or B-frame is transmitted before I-frame; neither is decodable since both frames are dependent to I-frame.

### 3. Modiste

Modiste is a two-step procedure to transmit instructional video to learners. The first step is to order video frames in queue where I-frames are given the priority to be firstly transmitted then P-frames and B-frames. The second step is to assign a rate for each priority video frames. The procedure for rate assignment is based on well-known round-robin method.

Let denote identities of dependence frame as  $f^i$  where  $i = \{1, 2, 3\}$  for I-frame, P-frame, and B-frame, respectively. The initialization ordering of the corresponding frames is denoted by  $j \in J, k \in K, l \in L$ . I-frame, P-frame, and B-frame are then denoted by  $f_j^1, f_k^2, f_l^3$ , respectively. Fig. 2 provides briefly illustration for frame's naming. Video frames are grouped according to importance value where I-frames are more important than P-frames and P-frames are more important than B-frames. This condition is formally expressed as  $f_j^1 < f_k^2 < f_l^3$ . Furthermore, it is assumed that the less number of ordering is the most important video frame. Lets take an example,  $f_1^1 > f_2^1 > f_3^1$ . The details of video frames ordering are shown in Algorithm 1.

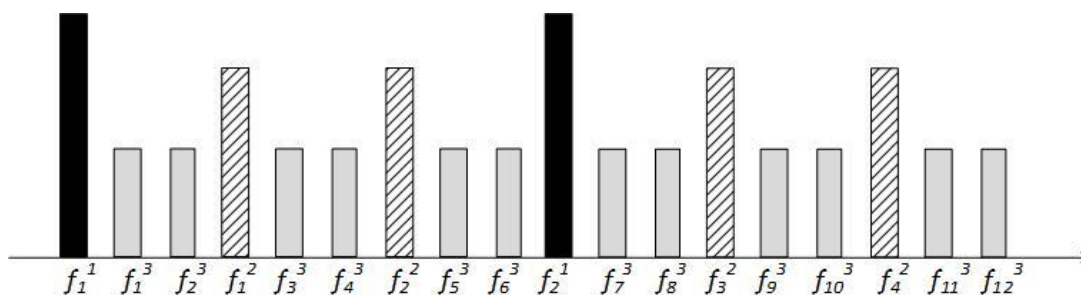
**Algorithm 1** Video frames ordering

```

1: Initialize  $j = 1, k = 1, l = 1$ 
2: for  $i = 1 : 3$ 
   do
3:   sort  $f^i$  in ascending order
4:   while  $j \leq J$ 
     do
5:     sort  $f_j^i$  in ascending order
     end while
6:   while  $k \leq K$ 
     do
7:     sort  $f_k^i$  in ascending order
8:     end while
9:   while  $l \leq L$ 
     do
10:    sort  $f_l^i$  in ascending order
11:    end while
12: end for

```

The ordered video frames which are resulted from Algorithm 1 are then denoted by  $f$ . Rate assignment method is employed to assign a rate for each video frame  $f$ . The details of rate assignment method are described in Algorithm 2. Gain for each frame when it is assigned a rate is estimated and is denoted by  $Q_{f,r}$ . The highest gain  $Q_{f,r}^*$  is then determined and is selected as the best solution for rate assignment.  $T_{av}$  and  $size(f)$  refer to available time transmission and frame size in bit, respectively.



**Figure 2** The example of video frames naming

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**Algorithm 2** Rate assignment
 

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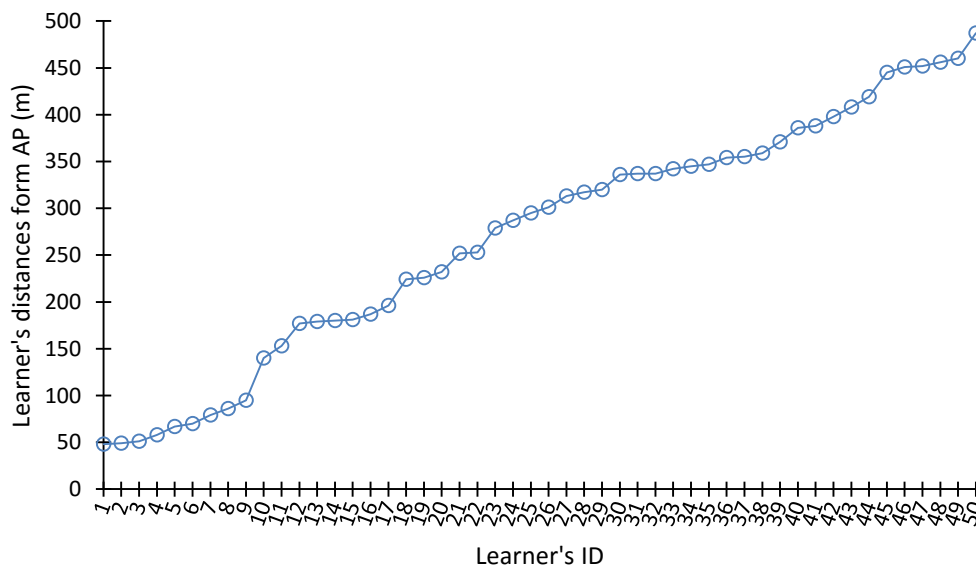
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1: Initialize  $T_{av} = T_{max}$ ,  $q_f = 0$ ,  $Q_{f,r} = 0$ 
2: for  $f = 1 : F$ 
3:   do
4:     while  $T_{av} \geq T_{max}$ 
5:       do
6:         for  $r = 1 : R$ 
7:           do
8:             assign rate  $r$  to frame  $f$ 
9:              $q_f = PSNR_f - PSNR_{f-1}$ 
10:             $t_{f,r} = size(f) / r$ 
11:             $Q_{f,r} = N_{f,r} q_f$ 
12:          end for
13:           $Q_{f,r}^* = \max \frac{Q}{t_{f,r}}, \forall r$ 
14:           $T_{av} = T_{max} - t_{f,r}$ 
15:        end while
16:      end do
17:    end for
    
```

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#### 4. Performance Evaluation

To evaluate the performance of Modiste, an extensive simulation has been conducted. Instructional video is assumed to be transmitted in WiFi (IEEE 802.11b) networks. This environment network is selected since IEEE 802.11b is commonly used in higher education networks. 50 learners are uniformly distributed with maximum distance to access point is 300m. The distribution of learners are illustrated in Fig. 3. The corresponding data rates in Mbps are 1, 2, 5.5, and 11. *Akiyo.yuv* is taken as a transmitted instructional video which is captured in Fig. 4. In this work, The performance of Modiste is compared with Modiste without block dependency, and H-ARSM [6].



**Figure 3** Learners distribution location



Figure 4 Akiyo.yuv

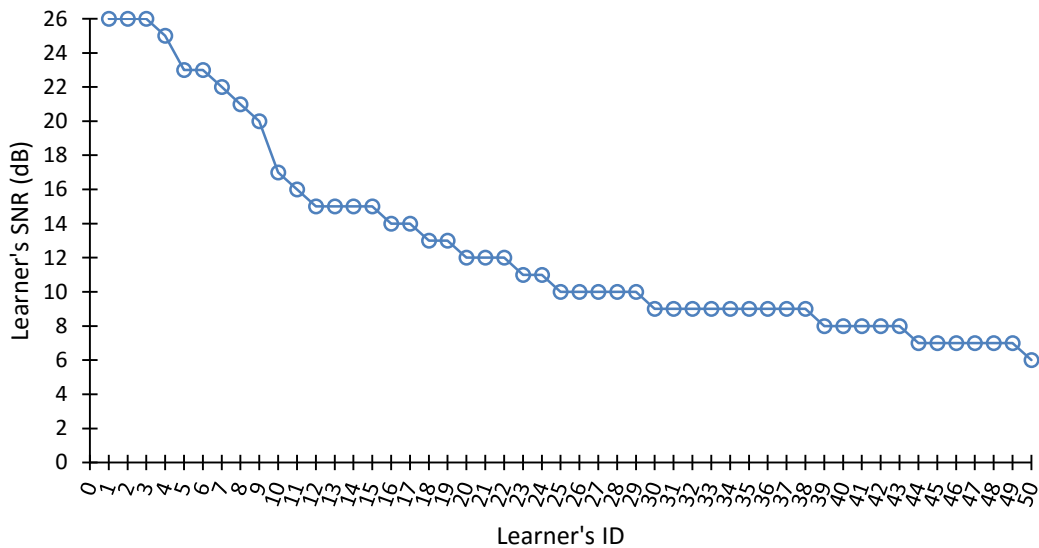


Figure 4 Learners received SNR

Signal quality, which is defined by Signal to Noise Ratio (SNR), for each learner is then derived based on learner's distance from access point and path loss model. Path loss is defined as  $PL(d)$  where  $d$  is learner's distance from access point in meter.  $PL(d)$  is formulated as  $PL(d) = 20 \log 4\pi d/\lambda$ .  $\lambda$  denotes wavelength of the propagating signal in meters. IEEE802.11b specification is employed in simulation. Learners' received SNR is shown in Fig. 4. Theoretically, the higher SNR of learner the greater perceived video quality.

The perceived video quality is measured by Peak Signal to Noise Ratio (PSNR) [ref]. PSNR for each learners is shown in Fig. 5. Learner with high SNR are able to receive better video quality than learner with low SNR. Fig. 5 implies Modiste outperforms other methods. When learners are in good signal quality, all three methods show good performance in delivering instructional video. Otherwise, Modiste shows better performance than others when received SNR decreases. The increasing PSNR is about 13%. The reason is Modiste has a procedure to provide a priority during video transmission. Video frame with higher priority is sent before video frames with low priority. Obviously, when transmission time exceeds playback time deadline high priority video frames have

been successfully transmitted and low priority video frames are dropped which has less effect in enhancing perceived video quality.

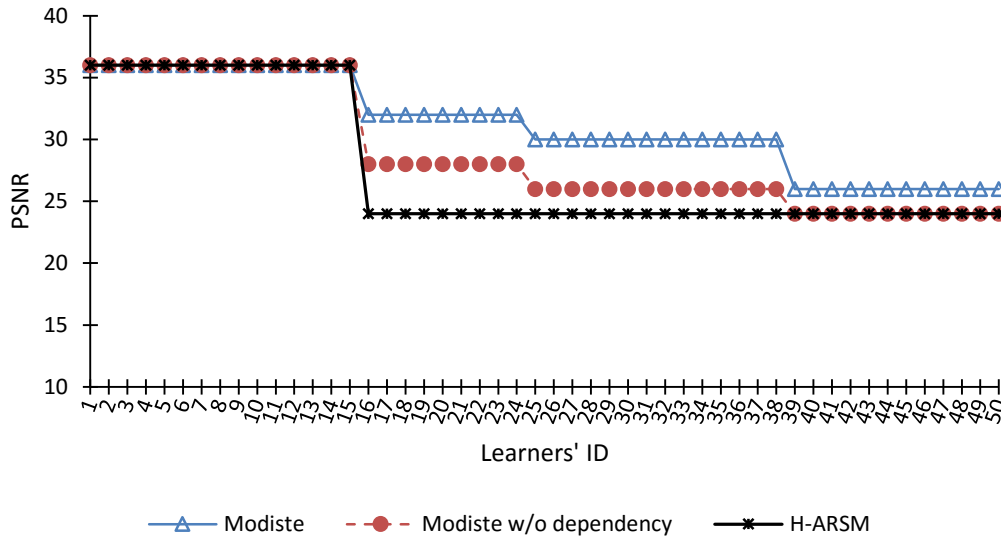


Figure 5 Learners perceived video quality

### 5. Conclusion

This paper addressed the problem of video transmission for mobile learner in e-learning. The rate scheduling problem is first formulated based on video and wireless network characteristics. A novel method is then proposed to solve this problem, namely Modiste. Video frame is transmitted sequentially according to video frame’s priority. I-frame is transmitted first, then P-frame, and finally B-frame. Some experiments have been conducted to evaluate Modiste performance. Results confirmed Modiste outperforms other methods.

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## MODELLING STUDENT MATHEMATICAL ARGUMENTATION WITH STRUCTURAL-INTUITIVE AND DEDUCTIVE WARRANT TO SOLVE MATHEMATICS PROBLEM

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### ABSTRACTS

Much research has been devoted to the argument in dialo rather than argument not in dialogue. Argument not in dialogue is important because the student tries to demonstrate and ensure the correct view by means of argument addressed to himself, the student tried to convince of himself. When student already have the ability to argument not in dialogue then that individual will have a stock when confronted with the argument in dialogue. Therefore, this study will specifically address the argument not in dialogue. This study aims to modelling students mathematical argumentations use a combination type of warrant that is structural-intuitive and deductive. Modeling argumentation use Toulmin scheme consists of the data, claims, warrants, backing, rebuttals and qualifier. The types of warrant use Inglis theory that structural-intuitive, deductive and inductive. This study used a qualitative approach to gathering data from the results of the written and think aloud subject. The results showed that subjects using the data to support the claim based on structural intuitive thinking that is using the internal representation of the structure and use of his belief that the subject produces conjecture. Subject to checked these conjecture through formal cognition is deductive. The existence of different conclusion from the structural-intuitive and the deductive thought.

**Keywords:** *Mathematical Argumentation, Warrant, Structural Intuitive, Deductive, Mathematics Problems*

### I. Introduction

Kinds of mathematical problem if has three term : (1) challenge to be solved and can be understood by students, (2) could not solved with structural procedure that has dominated by the students, and (3) involved some mathematic ideas (Hudoyo, 2001). According the Hudoyo's opinion can be interpreted that the mathematical problem is a question would be a problem for students when the questions that faced to a student must be understood by the student, but the question must challenge for them to answered and the question can not be answered with structural procedures that dominated by students that involved mathematical ideas.

Problem is a situation or the question facing a person or group when they had not rules, algorithms/ specific procedures or laws that may soon be used to determined the answer (Siswono, 2008). Based on the above, could make summary that the mathematic problem is a situation or questions that need an answer or solution, but the answer or the solution can not be known directly, or a situation or question facing someone who does not have rules, algorithms / specific procedures or laws soon be be used to determine the answer.

Cerbin (1988); Cho and Jonassen (2002); Krumm Heuer (1999); Kuhn & Udell (2003) states that solve a problem existence a argumentation that is used to justify solutions and actions.



According to Verheij (1996) states that central to the argumentation is the argument used to justify the conclusion. Furthermore, Rosita (2013) states the ability argumentation is one important component to improve the performance problem solving. Based on some of these opinions can be said that when solving the problem, problem solver needs to support the argument to define, generate and support a reasonable solution. Based on some of these opinions can be said that when solving a problem, problem solver need support of arguments to define, generate and support a reasonable solution. Develop the ability of this argument diperlu by students, for students to give a description of the reasons for strengthening or reject an opinion, conviction, or ideas. When the student has the ability argumentation, students can leave the hesitations and indecision in solving a problem, students are also more freedom in choosing, even students can propose reasonable solution.

Science education must provide students with the opportunity to develop various abilities and skills, including the skill to thinking and especially the ability to argument (Jimenez, Pereiro and Aznar, 2010). In other words, the focus and attention teachers is not only the thinking proses of students, but also the ability to argument. Bisides to learning the meaning of a concept, students must learn to choose among some different options or explain and gave reasons cause of criteria chosen by the student. Argument is the ability to connect data to made a claim (Jimenez, Pereiro and Aznar, 2010). Argumentation is an important kind of informal reasoning that is central to the intellectual ability involved in solving the problem, make judgments and decisions, and formulate ideas and beliefs (Kuhn & Udell, 2003).

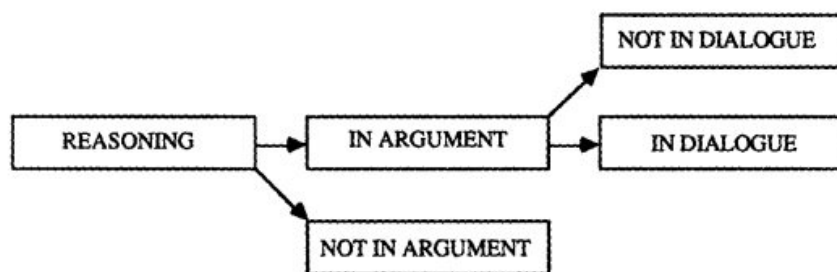
Toulmin (2003) proposed layout for analyzing arguments was called Toulmin scheme. Toulmin scheme consists of the data, claim, warrant, backing, rebuttal and qualifier. The data is a series of specific facts that support the claim (premise). The claim is a statement that will show to be true (conclusion). Warrant is a foundation for data in support of the claim by way of attractive rules, definitions or by making an analogy. Backing is the legal basis used to support a warrant. Rebuttal is an exception to the argument condition. Qualifier is the power level of data provided to the claims by the warrant.

Verheij (2005) stated that there was good work points of the scheme Toulmin that is: the argument can imposed rebuttal and argument can have a quality conclusion. Meaning from it was exception conditions of the argument and the argument based on quanlifier can be determined so that degree of strength from the data that gave in the conclusion. The argument is based on a standard logic quantifiers and related (for all x, for some x, not, and, or, etc.) and determines whether or not a good argument involves the evaluation of substantive and not only formal. This is similar to the Bizup's (2009) statement that is a person can capture the best meaning or the words strength and propositions to see how other people truly use it in a several of contexts.

Use Toulmin scheme in a study to analyze the argumentation in mathematics education conducted in research Vincent & Barry (2005) to formulate profiles arguments of students in solving mathematical problems, which the formulat profiles student argument can gave valuable understanding to teachers on how about students approach in solving problems. Conner (2007) described the preservice concept proof to support his argument in the classroom.

Seen that existing research has been devoted to individual argumentation in class discussion than argument which construction of individual cognitive. Therefore, this study will explain individual arguments. Individual arguments is important because person try to show and ascertain agood point of view with way the arguments which showed to themselves, person trying make sure themselves. When person have been the ability to argument not in dialogue then that person will have a provision when confronted in the argument in dialogue.

Arguments can happen in a dialogue or not in dialogue (Walton, 1990). Examples of the arguments happens in a dialogue is currently a group critical discussion, where each participant trying to show agood point of view with way the arguments which showed to other participants. Examples of argument not in dialogue is planning or solving problems. That activities like planning or solving problem happen of an interactive reasoning with themselves, in which the same person alternately play the role of proponent and responder. There is something approach but not arguing with yourself.



Source: Walton (1990)

Figure 1 Relation of Reasoning and Argument

The importance of research to know and understand the mathematical argumentation models that seen in the warrant component is expressed by Toulmin (2003: 96) that is the opportunity to arrange research with how a someone builds warrant in mathematics with trying to show variability or field-dependence. Warrant an argument could be dependent to certain restrictions, where such restrictions must be attention that the argument is not contradiction its truth value. Weber and Alcock (2005) stated argumentation consist from at least three important parts are called the core of the argument: data, conclusion, and warrants. When someone present the argument, someone is trying to convince the audience from the particular statement is called conclusion. To support the conclusion, presenter usually continue to exert evidence or data.

Presenter's explanation why the data support the conclusion is called a warrants. In this stage, the audience can receive data but rejects the explanation that the data decided as conclusion, in other words the authority of the warrant may be challenged. If this happens, the presenter must present additional support to justify a warrant, and therefore the core from valid argument.

Inglis (2006), Inglis, Ramos and Simpson (2007) classifies three types of warrants that is: inductive, structural-intuitive and deductive. Inductive Warrant is a a foundation from a process involving the evaluation of one or more specific cases. Warrant structural-intuitive is a foundation from the intuition (intuitive thinking) about the personal structure of internal representation. Deductive warrant is foundation from formal mathematic justification process used to ensure the general conclusions. Inglis, Ramos and Simpson (2007) also stated there was kinds of other types of warrants, for example, a combination from inductive and structural-intuitive. From it the researcher estimate that any other type of warrant that is a combination of three types of warrants that is 3 types of warrants that are structural-intuitive and inductive; structural-intuitive and deductive; inductive and deductive; structural-intuitive, inductive and deductive. In this study, researcher saw the mathematical argumentation in structural intuituif-deductive warrant. That is based on thinking with used intuitive structural generate a conjecture. When someone believes conjecture not necessary to prove so he/she thinks structural intuitive. But someone thinks that his conjecture is believed to be true and he/she also thinks that his conjecture should prove deductively to be more confident. One of the way validation conjecture with the logic of deduction (Harel & Sowder, 1998). NCTM (2000) stated students should be able to make an argument to decide legalise the conjecture. Students should be understand that these conjecture are right or wrong, but does not prove it. Students should saw the power of the conjecture from through deductive proof. So that, student must able to produce logical arguments and formal proofs to explain their reasoning, either in the paragraph or other forms of proof. Arbib also stated one of the statements in mathematics proof is not only from formal logic but through formal techniques and intuition (Inglis, 2006). From the three opinions, it appears that the existence of a combination of structural-intuitive and deductive when someone wants to prove. Structural intuitive-deductive warrant in this study was the merger between structural intuitive and deductive thinking that thought immediately to generate a conjecture, which is believed to the conjecture is true and he/she thinks that needs a justification from formal mathematical used to ensure the conclusion of the argument.

Researcher choose student candidate teachers of Mathematics Education Study as a research subject, because the subject of the study will be a teacher of mathematics, who will influence in the developed process of thinking students in the mathematical arguments. Boero (1999) stated the arguments used by the students dependent on the formed of cultural the theorem in the class, the characteristics of the task, and kind of reasoning which emphasized by the teacher.

Whitenack & Yackel (2002) disclose the teachers actions can encourage students to explain, write and justify their reasons during the class discussion to develop the students' arguments. According Conner (2007) the concept of proof and prove had teacher mathematics in senior high school influence of teaching learning process in facilitating students to the argument.

Based on this theory explained and research results related to mathematical argumentation. Purpose of researcher to describing modeling of student mathematical argumentation in solve the problems with the sreuctural-intuitive and deductive warrant. The process argumentation will be analyzed using the framework of Toulmin scheme.

## II. Research Methods

Researcher used a qualitative approach because it is relevant and possible to achieve the purpose of this research. The purpose of this study was to determine and describe modelling the student mathematical argumentation in solving problems. The subject is mathematic student grade 6. The reason for choosen this subject is students had learn concepts of mathematics relation. The process of selected the subject of research conducted as follows:

1. students gave a problem related to Product Cartesian, relations, partial ordered sets, chain and antichain. Students asked maximally to all of thinking along process solve problem, students who answered truly all the problem will be gave the next problem;
2. students gave a problem, students were asked maximally to solve problem with think aloud during the process solve problem, students who use combination the intuitive-deductive strategy set as a research subject;
3. after researcher choose the subject of the study, next activity is researcher interviewed the subject.

The research instrument is a test and a tape recorder. The test is used to describe a type of warrant in mathematical argumentation through something thought out, written and drawn by the subject when he dealt with a problems. Tape recorder is used to record sound when the subject think aloud about what thought and said when the subjek dealing with problems given. Data from written answers and think aloud of subject are combined to obtain completed data. Then the data is reduced for focused the data of subject mathematical argumentation and the data that has value development of the focus of this issue. Final stage is Researchers analyzed the data obtained in accordance with the scheme Toulmin.

### III. Results and Discussion

The study involved students mathematics education STKIP PGRI Jombang and done it on March, 28<sup>nd</sup> to April, 10<sup>nd</sup> 2015. Researchers conducted this study with purpose to know and describe modelling the student mathematical argumentation in solve problems. Student's argumentation analyzed using Toulmin scheme. Several parts of the Toulmin scheme (often backing and rebuttal) is not explicitly verbalized by the speaker (Inglis, 2006; Inglis, Ramos and Simpson, 2007). Accordance with previous researchers who have used the scheme Toulmin, this research is also faced the same problem that is parts of Toulmin scheme is not only explicitly verbalized by the subject. So that, data which reported besides from the written answer, also explained the behavior and the words spoken by the subject, although the subject is not directly said it.

The process of subject mathematical argumentation while investigating the truth of the proposition "if  $P$  is not chain than  $P$  is antichain" is as follows:

#### a. Data

Subject mentioned some data that used  $P$  is not chain and  $P$  is chain. There was hesitate in the determination of the data to be that used. The fragment think aloud subject:

"it started from chain or not chain? Yes firstly chain than not chain, but the chain's definition already is here (*pointing to chain definitions*), so yes started not chain... "

#### b. Claim

Subject mentioned the claim is "if  $P$  is not chain then  $P$  is antichain". The fragment of think aloud and writing answer data of the subject:

"that will be showed that if  $P$  is not chain then  $P$  antichain ..."

Jika  $P$  bukan chain maka  $P$  merupakan antichain

Figure 2 Subject's Written Answer

#### c. Warrant

Subject convinced that when  $P$  does not fulfill the chain definition, then  $P$  fulfill the definition antichain because negation of chain is antichain. Therefore, the subject also stated the proposition "If  $P$  is not chain, then  $P$  is antichain" is true. Subjects used the the structure internal representation and use of his belief in the warrant of proposition is true, So subject used the structural-intuitive warrant-type. It is based on data from the written answer and think aloud.

"If  $P$  is not chain then  $P$  is antichain. That is true because of only consist two possibility such as  $P$  does not comply the chain definition so  $p$  comply the antichain definition, right. , , if not chain then antichain ... (*subject silent and put pencil than leaned back in seat*), it's the definition of the chain is every two

difference elements comply the relation R, the definition of the antichain is every two different elements does not comply the relation R”

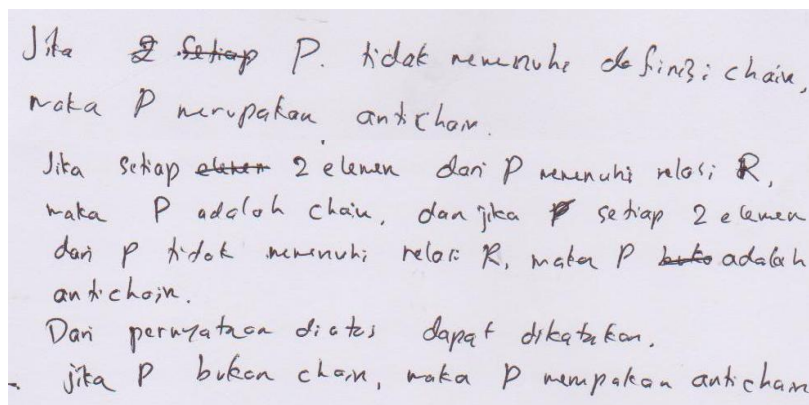


Figure 3 Subject's Written Answer

But, after a few minutes of silent the subject states that "if P is not chain, then P is antichain" is false. It is a subject got when make a negation of the chain definition, then conclude same meaning with the antichain definition. Therefore the subject guaranteed proposition of valuable correctness by used this type of deductive warrant. It is based on think aloud data and written answer data of subjects:

“This ... (silent while musing) every, how ... wrong yes because this is every ... also every ... emmm wrong because how ... yes wrong because this is every, also every, worry there is a did not comply it. Yes ... yes ... false because there will definitely does not comply the antichain definition”

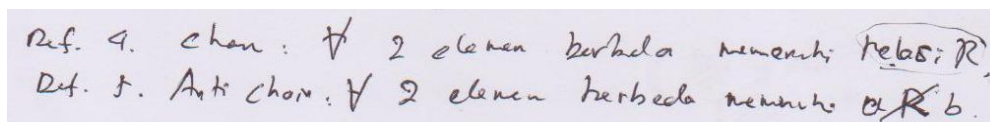


Figure 4 Subject's Written Answer

Seen that the subject used fragments chain and of antichain definition so the subject used deductions from axioms (Inglis, 2007) to solve the case that is deduction of chain definition. Subject to make the negation of deduction chain definition, then compared with the deduction of antichain definition.

d. Backing

In stated the truth of the proposition "if P is not chain, then P antichain" is true, the subject used the chain and antichain definition as a legal basis warrants. Even or stated correctness of the proposition "If P is not chain, then P is antichain" is false, subject used a chain definition, antichain definition and the rules of logic that negation of chain definition is there are two different elements does not comply  $a R b$  and  $b R a$  as a legal basis warrants.

e. Rebuttals

When the subject stated "if P is not chain, then P is antichain" is true, subject not gave a rebuttal. But when the subject stated "if P is not chain, then P is antichain" is false, subject gave an counterexample. Rebuttal "if P is not chain, then P is antichain" is false in condition P is not chain which each element does not fulfill  $a R b$  or  $b R a$ . It is based on think aloud data and written answer data of subjects:

"... Let S is 1, 2, 3, 4, 5 with divide relation, let A is subsets S with 1, 2, 4 this is chain because every elements of A comply  $a R b$ . Then B is 3, 4, 5 is is not chain because there are elements of B comply  $a R b$ , and every elements of B does not comply  $a R b$  or  $b R a$ . For example C is 1, 2, 3, 4, 5 for  $1 R 2$ ,  $1 R 4$ ,  $1 R 5$ ,  $2 R 4$ , but 2 is not R 5, so C is not chain because there is that does not comply  $a R b$ , and C is not antichain because every element of C does not comply  $a$  not R  $b$  "

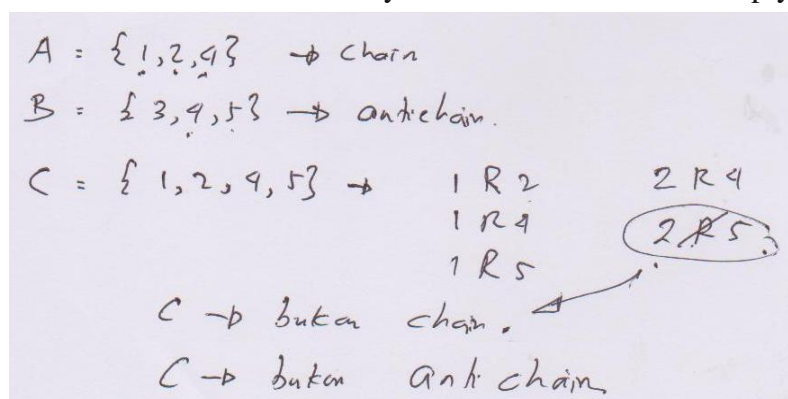


Figure 5 Subject's Written Answer

f. Qualifier

At first the subject stated "if P is not chain, then P is antichain" is true with modal qualifier is probable. It is based on data of subjects think aloud:

"This possibility (if P is not chain, then P is antichain) is true because the not chain same with the antichain"

Then, with explanations by using chain definition, antichain definition and rule of logic, subject stated "if P is not chain, then P is antichain" is false with modal qualifier is certain. It is based on data of subjects think aloud:

"yes certainly this is false. , , because there it is does not comply "every", this negation (subjects showed chain definition) "there are two elements" while this (the subject showed the definition antichain) "every two elements", so certainly false "

Modelling Subject mathematical argumentation to investigate the trutly of the proposition in Figure 6. subject used Data (D) is "P is not chain" and Claim (C) is "P is antichain". Subject to probability that the claim was true, but there was not law foundation in supported of the guarantee from those truth, so that qualifier ( $Q_1$ ) to true valuble the claim is probable. Guarantees that supported data to claim was true used strutural-intuitive warrant ( $W_{si}$ ) because the subject used representation internal tructure and used a beliefs. In the process of this mathematical

argumentation, the subject does not expressed backing and rebuttal. Subject expounded law foundation (backing “B<sub>1</sub>”) as warrant foundation that chain definition, definition antichain and negation.

After that, by used the data (D) and claims (C), subject stated claims was false with refusal from a theory, principles or conclusions that true regard or general character. So the subject used a type of deductive warrant. Subject expounded law foundation (backing “B<sub>2</sub>”) as warrant foundation that chain definition, definition antichain, negation and rules of logic. Thus subject to change his claims was false and qualifier (Q<sub>2</sub>) is Certain. Subjects also mentioned rebuttal (R) as an counterexample for proposition "If P is not chain then P is not antichain".

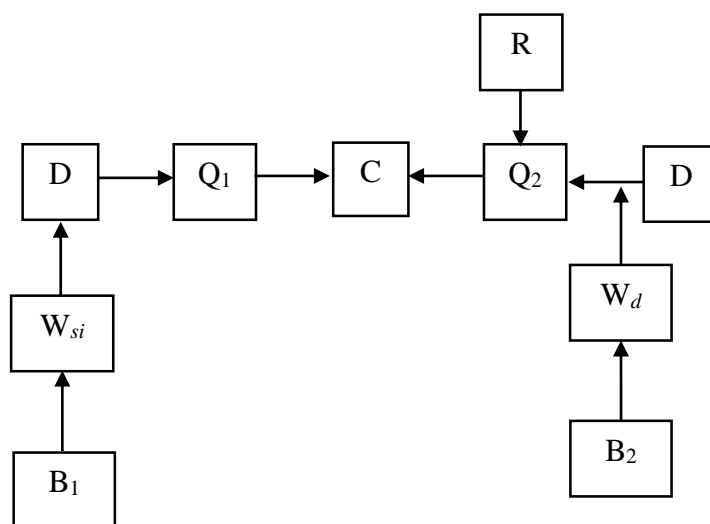


Figure 6 Modelling Subject Mathematical Argumentation

#### IV. Conclusion

The results showed that the types of structural-intuitive and deductive warrant. Subjects thinking that contained in the structural-intuitive warrant generated a conjecture of answer to solve problem. Although the subject's answer with an intuitive strutral warrant is wrong. But subject can used his intuitive in solve problem.

In supported the conjecture of that answer, subjects used a deductive warrant. Although the answers from structural-intuitive warrant different with answers from warrant deductive. This is showed that there was interaction or conflict because both of them gave different decisions. Roh (2005) strated intuitive cognition (intuition) generate creative ideas, while formal cognitive functions tend to verify and formulate more precise of ideas as the last step of the creative process. That is showed that there was interaction or conflict between formal cognition and intuitive cognition. When someone faced a problem, may both provide the same decision or otherwise. So to further research are expected to describing the thinking process in mathematical argumentation with combination of this structural-intuitive and deductive warrant.



In this study structural intuitive warrant generated conjecture of answer is wrong, but the subject thinking was correctly. While the deductive warrant produce correct answers and thinking. So for further research are expected to describing the mathematical argumentation with structural-intuitive and deductive warrant in correctly of thinking and answer.

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# Implementing ICT Based on Metacognition in Vocational Education

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**Abstract:** This article presents the results of studies conducted by a number of graduate students of technical and vocational education study program who applied innovative learning models and ICT to improve the quality of teaching and learning outcomes in the areas of technical vocational learning. They are one student of Electronics Engineering Education, one of Mechanical Engineering Education, and one of Culinary Art of Home Economics Education. These three studies were under the umbrella of the graduate research grant entitled "Implementation of Metacognition-Based Information and Communication Technology in the Field of Vocational Education Sector". The researchers were a faculty team of the graduate program. One of the objectives of the research grants is to help accelerate the completion of the students' theses. The use of ICT media is very important in the field of vocational learning. ICT Media that has been developed based-on metacognition helped to improve the quality of teaching and learning outcomes. There are three research questions: 1) Does the development of blended learning-based on instructional plan enhance the students' skills in cooking the continental cuisine? 2) Does the development of interactive books improve the learning outcomes of the microprocessor subject at vocational schools in Surabaya? and 3) Is there any significant effect of CAI-based CNC Basics learning on the students' interactive thinking skills on the subject of operating CNC machine basics in the vocational high schools. The studies were experimental research using tests, observation, and questionnaires as the data collection techniques. The data analysis techniques used were percentages and inferential statistics using t-test. The results showed that ICT media based-on metacognition developed was able to improve students' learning outcomes and metacognition skills. The metacognitive skills include: critical thinking skills, self-directed skills, and repeat themselves and learn in more depth. The implication of this study was that the use of ICT media based on metacognition was essential in improving the process and learning outcomes.

**Keywords:** *ICT Media, Metacognition, Vocational Learning*

## 1. Introduction

These last few years, the Government of Indonesia gave more attention to vocational education. It can be seen that the Government of Indonesia has been programming the ratio between vocational high school and senior high school at 70:30. The number of vocational high schools increased greater than the number of high school in order to prepare the need for middle-level manpower.

Meanwhile, the learning composition of the vocational high school is more emphasis on practice rather than theory with the ratio 60:40. Therefore, the suitable learning for vocational high school is active learning, in which students demanded an active role (student-centered). With active learning, students will increase their understanding about the material better, both theory and practice, through learning by doing. Active learning can help students to develop knowledge in a flexible, ability of problem solving in effectively, self-directed learning, collaboration capabilities and an effective intrinsic motivation [1]. Active learning also emphasizes learning through solving the problem through activity [2, 3].

It is important to provide teachers to have the competence to manage teaching and learning more meaningful. Learning skills and innovation are more recognized as skills that distinguish students who are ready for environments of life and work that become increasingly complex in the 21st century with students who are not ready. Focus on creativity, critical thinking, problem solving, learning strategies, communication and collaboration are essential in preparing students for the future.

The problems of this research include: 1) Does the instructional plan development based on blended learning can improve learning outcomes? 2) Does the development of interactive books improve the learning outcomes? and 3) Is there any effect of the implementation of learning based on CAI towards increasing the level of interactive thinking of students?

There are several forms of learning with ICT, such as: teachers and students use local television programs and video to strengthen the understanding of a material being studied; teachers and students use digital cameras to prepare the content and learning materials; administrators use computer-based learning management systems to deliver e-learning and set learning with students. Teachers can also use the internet on a project-based learning and to web-quests. In addition, the use of online communication tools such as skype, blogs and forum network can be used by students, teachers, schools, experts and community.

Some researchers have been utilizing of ICT in learning. Nurlaela [4, 5] developed ICT in the form of multimedia by using CAI for the socialization of knowledge of foodstuffs in elementary school students, and research findings indicate an important result. Buditjahjanto and Hajime Miyauchi [6] have used ICT in the form of a computer game to learn the decision on the amount of emissions that must be produced by a power plant. Ekohariadi [7] has conducted research on computer-based learning by measuring the ability of students to learn computer programming.

Some studies have used and developed ICT in education media learning. Yvonne Rogers and Mike Scaife [8] in their research used interactive multimedia for learning. Their multimedia learning and edutainment shaped in CD-ROM with various learning topics that have a level of difficulty. Their research was to develop how to support learning activities through interactive design effectively. The use of ICT for learning in the form of Computer Assisted Instruction (CAI) has also been developed in the form of computer-assisted learning. As it is known that the nature of the use of ICT is mobile. Therefore, this CAI package also has the advantage that the learning can be used anywhere. Sultan, et.al [9] also used the advantages of CAI in packages so that it can be used in learning via PDA.

The use of ICT in education can be used widely. Several private and public schools in large cities have developed school websites. This website is a media campaign and communication between the school with the students, teachers, parents and the wider community. However, the use of ICT for teaching and learning is still inadequate, although some schools have been commonly used it, especially international schools or franchise branch of a foreign school system [10].

The use of ICT media based on metacognitive is more influencing the quality of teaching and learning outcomes. The use of metacognition in the field of ICT has been carried out by Quamrul [11] by using a web-based to measure the capacity of students to self-assess their understanding, the regulation of student learning (level of trust), the class dynamics (reaction), and method of instructor. The purpose of the study was to evaluate how students regulate their own learning and improve their ability to self-assess their understanding for more critical. The results show the students become better learners with the self-assessment and can evaluate their own knowledge.

Lawanto [12] evaluated the change in metacognition in students majoring in engineering who were divided into three groups. By using two features, such as metacognitive, cognitive, self-appraisal and self-management was to indicate the level of students' metacognition. The results showed a significant change of metacognition students in studying the project design.

Metacognition has two components: knowledge of cognition and mechanisms of self-control such as control and cognitive monitoring. Knowledge of cognition consists of information and understanding that possessed a learner about the process of thinking itself, in addition to knowledge of various learning strategies to be used in specific learning situations. The second component of metacognition is monitoring the cognitive, namely the ability of learners to choose, use, and monitor the study strategies that suitable. Based on this, then some of the main indicators of metacognition are: 1) learners understand their learning styles; 2) learners being able to select specific learning strategies for specific situations; 3) learners use specific learning strategies to certain situations; 4) learners monitor learning strategies used; 5) learners are able to measure the achievement of learning; and 6) learners are able to apply self-directed learning.

This research is to develop learning media based on ICT that consists of three sub-research, namely: 1) Development of instructional plan based on blended learning in standard of competence processing continental cuisine to improve learning outcomes; 2) Development of interactive e-book media with the subjects of microprocessor technique at SMK Negeri Surabaya; and 3) The effect of implementation CNC learning based on CAI toward to the Enhanced of the level of interactive thinking of students on Material Basic Operating of CNC machines in SMK.

## **2. Research methods**

This research consists of three sub-researches, and each sub-research will be presented the method briefly. The first sub-research is Development of Instructional Plan Based on Blended Learning using method 4D Models that adopted from [13]. The method consists of four stages, namely Define, Design, Develop, and Disseminate. This research did not do in the disseminate stage. Because the development results only applied limited to school where the research was do, namely SMKN 1 Dlanggu. The subjects were students of vocational high school with expertise Program Culinary, XI class in academic year 2013/2014 at SMK Dlanggu. The Standard of Competence was continental cuisine. Ten students were involved in this pilot test. Tests were carried out 3 times. Collecting data used the technique of questionnaires, observation and tests. The research design at this stage used the one-group pretest-posttest design [14]. Data analyze technique used descriptive qualitative.

In the second sub-research was the Development of Interactive E-Book Media, the development model also used 4D models. The subjects were students of X-TAV1 and X-TAV2 class at SMK Negeri Surabaya. This research was conducted in SMK Negeri Surabaya and held on even semester 2013/2014. Collecting data used the technique of questionnaires, observation and tests. The design of trials used an intact group comparison, such as by comparing the control group with the experimental class. In the experimental class, students were given an ebook teaching media, while in the control class did not use e-book media but using power point media. To measure the differences of learning outcomes between control class and experimental class was based on the posttest. Data analyze technique used descriptive qualitative analysis to analyze the feasibility of the media and post-test items, as well as to analyze the students' response to the use of interactive e-book media. To determine differences of learning outcomes of students between control class and experiments class was analyzed using t-test.

In the third sub-research was The Effect of Implementation CNC Learning Based on CAI toward the Improvement of Level Interactive Thinking of Students. This research used analysis descriptive method with quantitative approach. The population was all students of class XII SMK Antarctica 1 Sidoarjo with TPM expertise program. The sample was determined by random cluster sampling consisted of 59 students. Collecting data used observation and test technique. Data analyze technique used simple regression.

## **3. Results and Discussion**

Results of research and discussion respectively described as follows:

### **3.1 Development of Instructional Plan based on Blended Learning**

Online learning model used in this study was a weblog. A weblog is a website that will contain an individual's personal record on the internet and web-based application that allows anyone to create and develop a dynamic website without having to understand programming languages and provides a free weblog without costs. The use of weblogs in education facilities is to improve information sharing. It makes easy to publish information and allows teachers to monitor. Teachers can upload learning materials, assignments and evaluations in the media weblogs. Meanwhile, students can download it as a reference lesson while providing convenience to students to deepen students' knowledge through link a variety of websites that supporting material.

Weblog that developed by the researcher was at the address: <http://belajarkontinental.com/jb>. The learning was held three meetings with two different basic competencies. The first basic

competence was "Basic Principles of Continental" and the second basic competence was "Processing Hot and Cold Appetizer".

Results validation of instructional plan included lesson plans, worksheets, Weblog and Assessment Sheet. Those were categorized as very feasible to implement. Feasibility percentage of lesson plan based on blended learning while on the trial test showed improvement from the first meeting to the third meeting, respectively reached 82.23%; 90% and 93.33%. For student activities, at the first meeting, the role of teacher in teaching was still dominant in learning. In the second and third meetings, the role of students were more dominating and teacher simply reminded and guided the students' presentations and students' practice. In the pilot testing, the highest grade of student activity was doing an assignment (LKS) (37.8%). Student responses indicated a positive response (96.3%). Mastery of student learning outcomes included mastery of cognitive, psychomotor and affective showed completion both individually and classically.

Based on the results of data analysis, it can be concluded that the development of instructional plan based on blended learning in the competency standard of processing the continental culinary is feasible to be applied and can help to complete the student learning outcomes. Relevant to the opinion of Shinde [15], that the implementation of blended learning in school education in India can improve student learning outcomes. The positive response of students to the blended learning indicated that students were happy with the learning. In line with the opinion of Harriman [16] that blended learning has the advantage, such as: the students not only learned more during an online session. Students not only learned one direction sequentially, but also this learning can improve interaction and satisfaction of students. With blended learning students have the opportunity to learn the material desired.

In the blended learning methods, students of vocational high school in Culinary Program were challenged to implement collaborative learning between class teaching and online learning using a weblog, so that students' skills in using media of information and communication and the internet can be improved. In addition, it also can improve their learning outcomes. In this way the advantages of collaborative between class teaching and weblog can be maximized. It enriches the findings of Sawmiller [17] that stated classroom blogging can improve the process of critical thinking, collaboration, and can be applied to the study of science with various learning models. This research in blended learning showed that learning weblog can stimulate the activity of students in the assignment (LKS). It is in line with the opinion of Quinn et.al [18] that stated the implementation of blended learning, students showed behavioral changes more effective learning. Based on that, blended learning also improves students' metacognition, because there is an opportunity for the students to set up their own learning strategies and deliver them to learn the material they want.

### 3.2 Development of Interactive e-Book Media

In this research, validation learning media carried out by five experts consisting of 4 Lecturer State University of Surabaya and 1 teacher SMK Negeri Surabaya. Media validators were composed of content experts, instructional media experts and linguists. This validation purpose was to make feasible for media learning that to use for this research. Data obtained from validation results showed an average score of 79.2%. It means that learning media in the category of feasible to use. The results of the validation items obtained an average score of 76.5%. It means these items categorized as feasible to use. While for test result of learning outcome obtained with the average value of 82.15 for the experimental class and 77.15 for control class. Student learning outcomes of the two groups were then analyzed using t-test. From the results obtained  $t_{\text{count}}$  of 3.824 while the value obtained  $t_{\text{table}}$  1.658. By comparing the values between  $t_{\text{count}}$  and  $t_{\text{table}}$ , then it is known that the  $t_{\text{count}} > t_{\text{table}}$ , therefore can be concluded that the results of student learning using interactive e-book media is better than the results of student learning using power point media. The results of students' response to interactive e-book media obtained an average score of 85.42% and categorized as very well then the interactive e-book media feasible to use in the learning process. Research results showed that the student learning outcomes who used interactive e-book media is better than the

student learning outcomes using power point media that is supported by previous studies. Binas [19] found that the delivery of information by using the e-book is very effective. E-book supports to provide feedback to students about their qualities and skills.

The learning model used to implement the media e-book was a model of problem-based learning (PBL). PBL has common characters which provides to the students on the subject of authentic and meaningful that will provide convenience to the students to carry out the investigation and inquiry [20]. This model also has some special characters, such as the submission of questions or problems, focus on the linkages between science disciplines, authentic investigation, produce products / works, shows these products and cooperation. Authentic problems are problems that exist in our life everyday and to be beneficial directly if we can how to solve the problems. Authentic problems can attract students as a subject to study, as they relate to their daily lives and beneficial for him. Based on this, problem-based learning model and implementation of an e-book media was feasible to develop the ability of students' metacognition. Metacognitive thinking skills are indispensable in problem solving, and therefore, the use of problem-based learning model is appropriate. Ebook that provides opportunities for students to learn independently as well as measure the success rate of learning, it is also very useful in the development of metacognition skills. Referring to the above description, students were encouraged to direct themselves to begin the learning process, and be able to evaluate themselves to assess questions and solving problems. Both of these are characteristic of metacognitive skills [11,12].

### **3.3 The Effect of Implementation CNC Learning Based on CAI Toward to The Enhanced of Interactive Thinking Level of Students**

Problems are often encountered in teaching, especially teaching operate a basic CNC machine is how to present material to students well in order to obtain effective and efficient results or maximum results. Another problem frequently encountered is the lack of attention of productive teachers to the variation of the using of learning methods in an effort to improve the quality of teaching is good. Computer Numerically Control (CNC) is a machine which is controlled by a computer using numerical language (movement commands that use numbers, letters, and symbols). A basic level of CNC machine that exist now is currently divided into two groups, such as CNC machine Two Axis or better known as lathe machine and CNC machine Three Axis or better known as a milling machine.

The research results of application of learning media based on CAI obtained an average score of 3:48, which means learning performed well. The ability of interactive thinking of students achieved an average score of 3:20, which means enough. The learning outcomes of students achieved an average score of 79.7, which means good. Correlations between these two variables, interactive thinking ability of students with learning outcomes derived value Sig. (2-tailed) of 0.027. Compared with a probability level of 0.05, then the level was greater than the significance value ( $0.05 \geq 0.027$ ). This means interactive thinking ability of students has a significant relationship to the learning outcomes.

The media learning CNC simulator were applied by using direct learning model. With reference to information processing theory and the theory of dual coding [21], who believes that in order to transfer and remind information, heading into and out of long-term memory, it is necessary to repeat the exercises. Repeated practice in growing mastery of practical skills can only be done with a hand-on activity. Media CNC simulator applied in this study provide an opportunity for students to be able to repeat themselves and to learn more material being taught, so that the memorizing of information into long-term memory can be performed. Repeating by themselves and studied in greater depth is one of the metacognitive skills, in which one goal is student able to direct themselves to begin the process of learning, as well as reflecting on themselves by reviewing goals and objectives (Quamrul 2010; Lawanto, 2009).

Based on the description in the above results, metacognitive skills have been developed through this research, which include: 1) critical thinking skills, the skill to analyze the arguments and give interpretations based on legitimate perception in the thinking process; 2) self-directed

skills to initiate the learning process, and be able to evaluate them selves to assess questions and solving the problems encountered; 3) repeating themselves and learn in more depth, as well as reflect on themselves by reviewing goals and objectives. However, research result does not explicitly to link the processes and findings on metacognition.

#### 4. Conclusion

The conclusion of this study includes: 1) Instructional plan Based on Blended Learning in Competence Standards of Processing Continental culinary can Improve student learning outcomes; 2) Media interactive ebook can improve learning outcomes with subjects microprocessor techniques in SMK Negeri Surabaya; and 3) There is an effect the implementation of learning CNC based on CAI towards increasing the level interactive thinking of students in the material of basic operate CNC machine in SMK.

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## ***Zone of Promoted Action (ZPA) of Elementary School Teacher in Mathematics Learning***

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**Abstract:** Starting from Vygotsky's social development theory, that is Zone of Proximal Development (ZPD), Valsiner develop the theory by generating a new theory, that is Zone of Promoted Action (ZPA). ZPA discuss about the action taken by the teacher during the learning process so that students gain new knowledge and skills. The character of the ZPA is not binding, so that it can be accepted or rejected by the students. Several studies have been done related to the ZPA, but has not led to the formulation of the indicator. This study tries to apply the formulation of indicators which summarized from the results of several previous studies, in which the goal is to classify the teacher actions which accepted or rejected by students. Subject is Mathematics teacher on fifth grade elementary school. This qualitative research collect the data using interviews and observation. Results from this study is accepted ZPA teacher appears when the student is enthusiastic about the way teachers teach, students follow teachers instructions and students are able to achieve the goal and understand what the teacher said. Rejected ZPA apparent when students are not enthusiastic about the way teachers teach, students do not follow the instruction of the teacher.

**Key Words:** *ZPA, Elementary School Teacher, Learning Mathematics*

### **Introduction**

The basic educational objectives was to guide students in taking their behaviour, including moral, spiritual, and social, into better human being both individually and socially. One subject material taught in educational institution was Mathematics. According to Soedjadi (2000), Mathematics was a knowledge related to making sense and numeric accounts. Mathematics taught in primary school and secondary school was called as school mathematics. It often referred to elements or parts of mathematics selected based on and oriented to the interests of development and Technological science. The objective of mathematics teaching in elementary and secondary school is to prepare students implementing mathematics in their daily life and in learning various disciplines.

It was necessary to concern mathematics learning in elementary grade as it was the starting point for the students to have the construct that was subsequently applied as a base for learning further concept. In addition, the basic concept of Mathematics in elementary school provided the students supplies for advancing their educational level and for mastering future insight. Thus, teaching Mathematics in elementary school needed to be considered by many dimensions, including teachers, parents, society, and government.

Current teaching process has already applied various strategies in order to make it interactive for both teacher and students. The teaching process was no longer merely about 'teacher explained, and students listened' activity, rather it has been designed to make the students more active during the teaching process. Interaction both student and teacher during learning process was considered by the teacher to build interaction between teacher and students particularly for making social environment conducive. Accordingly, Walle (2002) suggested that teacher had to transform her/his teaching approach from teacher centered-oriented to students centered-oriented. Goos (2012) stated that social perspective could be useful both to comprehend the teaching and to enhance teacher's capability in teaching mathematics. In this perspective, learning was seen as individual participation within social environment that interaction among people surrounding such teaching needed to occur, including teacher and students.

Boyd, M., & Maloof, V. (2000) also mentioned that students learned through speaking, thus made them able to express their capability. The most important thing was that teacher should give opportunities toward the students to be active in speaking during learning process. Therefore, social interaction between teacher and her/his students needed to be enhanced. Mathematics learning might become more meaningful if both students and teacher understood the characteristics of what they learned and taught.

Various characteristics of mathematics course should be comprehended by the teacher. He/she also needed to consider the characteristics of his/her students to make the teaching process effective. Accordingly, Lui (2012) stated that teaching process in class followed the characteristics of teacher, students, and the material taught. The distinctive characters of the students had also linkage to their capability in receiving the material, thus they needed assistance in material received process. Vygotsky generated a theory of ZPD (*Zone of Proximal Development*), a theory facilitating students to learn. Then Valsiner had extended the theory by generating ZPA (*Zone of Promoted Action*), related to the interaction between teacher and students.

Different conditions of the students in class needed a significant consideration by the teacher to set certain phases of teaching process. The phases or actions might no exceede the students' capability, that they could join the process. Hence, study was needed to observe the teaching implementation and try to classify which manner of teacher actions could be accepted (accepted ZPA) or rejected (rejected ZPA) by the students. Thus, it was expected that teacher would find out which condition his/her actions could be either accepted or rejected by the students, so that he/she could prepare particular subsequential alternatives for achieving the teaching-learning objectives.

## Theoretical Review

Vygotsky was born in Uni Soviet 1896. He concerned on a theory of teaching-learning social development. He believed that this lifetime development process was depend on social interaction, and social teaching actually led to the cognitive development (Riddle, 2008). Such phenomenon was called as *Zone of Proximal Development (ZPD)*. Vygotsky emphasized it as “the gap between level of actual development determined by independent problem solving and level of potential development determined by problem-solving under the guidance of adults or by the cooperation of experienced colleague” (Vygotsky, 1978). In other words, students were able to do the task they had whether with guidance from teacher or cooperation from some more capable friends.

ZPD was seen by Vygotsky to draw on students current and subsequent development achieved by applying mediation of semiotic, environment, and adults capability or peers. The idea was that the most appropriate time for individual to learn was when he/she collaborated with others. Such collaborative afford might be with some more creative people, thus made individual could learn and internalize the novel construct and skill. Lui (2012) mentioned that the easiest condition to make students achieve the course was when the material given was inside students' ZPD. It could be quite difficult to determine whoever needing help in teaching process when the course was outside the ZPD.

ZPD theory was, then, extended by Valsiner by generating a new theory. Valsiner proposed two futher zones of the relationship between children and environment. Those two zones were *Zone of Free Movement (ZFM)*, emphasizing a zone of childrens' freedom to act during the teaching process, and *Zone of Promoted Action (ZPA)*, emphasizing all across action promoted by teacher toward the students during the teaching process.

ZFM refered to an area with boundaries of which students' behavior could be accepted by adults or teacher. If their behaviors were still in given ZFM (within particular behavioral boundaries), the teacher needed not to intervene in order to turn their behavior into distinctive direction. But, if their behavior exceeded the given boundaries, the teacher might lead them into predetermined direction. If they continuously perform such behavior exceeded the ZFM, the teacher would have an authority to transform the ZFM boundaries so that the students remained on the ZFM area. Hence, there were possibilities for the students to behave either in accordance to the given boundaries or not. If they did exceed the expected boundaries, the teacher could lead them back to the predetermined boundaries, or the teacher might reset the boundaries to make the students enable to join the teaching process (Valsiner, 1983).

The second construct was *Zone of Promoted Action (ZPA)*. It emphasized on action promoted by teacher toward the students. Valsiner (1997) suggested that ZPA refered to a series of

activities, things, or areas in an environment, in which one promoted particular actions. It showed that ZPA was an area announcing teacher actions toward her/his students in the teaching process. Goos (2005) stated that ZPA constituted a series of activities promoted by adults and oriented to certain new skill. Action conducted by either adults or teacher during the teaching process had particular objective that through such actions, the students enabled to learn a new knowledge, and thus would achieve a new skill.

Such promoted actions by teacher toward the students had a linkage to his/her teaching strategies. It included the use of teaching method, teaching instrument, and teacher activities during the process. It was in accordance to what Goos (2007) stated that ZPA was a strategy of teachers' professional development reflected from those particularly promoted actions toward their students. As those were promoted by the teacher toward the students, Valsiner characterized ZPA in a term of unbounded. Its mean that there is no obligation for students whether to reject or accept their teacher's actions. As what Blanton (2005) stated that ZPA illustrated teacher's promoted actions toward the students with no obligation for them to accept or reject those actions. Hence, the students were free to respond those promoted actions. When the ZPA was accepted by the students, it became accepted ZPA. Whereas, when it was rejected by the students, it became rejected ZPA.

Some studies related to ZPA had already been conducted by teachers (Blanton,2005;Hussain,2011;Goos,2007). Accordingly, the researcher took some indicators of teacher's ZPA as follows.

Table 1. Indicators of ZPA

No	<i>Accepted</i>	<i>Rejected</i>
	<b>Method/Model/ Strategy</b>	
1	Students felt enthusiastic with teaching model their teacher applied	Students felt no enthusiastic with teaching model their teacher applied
2	Students followed the instruction by teacher and reach the objectives	Students not followed the instruction
3	Students could not comprehend what was taught by teacher	Students could not comprehend what was taught by teacher
	<b>Media or instrument</b>	
4	Students were assisted with the media applied by teacher	Students did not follow teacher explanation through media applied
5	Students felt interested in the media and instruments applied by teacher	Students felt no interested in the media and instruments applied by teacher
6	Students could apply the media for learning tool	Students could not apply the media for learning tool
	<b>Topic</b>	
7	Students were interested in the topic given by teacher	Students were not interested in the topic given by teacher
8	Students could understand the topic given by teacher	Students were difficult to receive the topic given by teacher

## Research Method

This study was conducted in one elementary school of Jombang, with Mathematics teacher of the fifth grade as the subject. The selection of elementary school teacher as the subject was due to the necessity and the serious concern related to teaching mathematics in elementary school, since it was the critical point in which the students achieved the very basic constructs of mathematics. The selection was randomly conducted.

The initial phase of this study was that the researcher had short interview with the subject, related to the teaching plan that will be implemented. The researcher, then, observed the teaching process in class. The researcher observe the entire teaching activities and recorded the process in order to avoid any missing data. Hence, observation and interview were both applied for data collection method.

## Findings and Discussion

In the initial phase of interview before conducting observation, the subject stated that teaching material to be given was varying square roots of a number. The subject would initially explain this material in order to make the students have initial knowledge in common. Then, when they already enabled to find out the square roots of a number based on what teacher had explained, they would form some discussion group. In such discussion, they would receive some task to discuss in group for finding out the result of square roots. After all, the representative of each group would present the answer to the subject.

In observation phase, the researcher recorded the teaching process in class that was conducted by the subject. Teacher opened the teaching learning process by giving a greeting, then stimulated the students by asking student one by one session in order to explore their prior knowledge related to roots of a number. The subject asked about what roots is, few students, especially who sat at the front line, answered that roots are the opposite of the square. It showed that they rejected the teacher's ZPA, for only few of them responded, and the number of those responding such questions was less than a half of whole students.

The subject reminded them the form of the square by having them mention  $2 \times 2 \times 2$  in the form of square. All students gave a correct respond. It showed that the subject's ZPA was accepted by the students. They had a new knowledge, and all students accepted the subject's ZPA fulfilling such indicator by which the students felt enthusiastic with the teaching method that be applied by the subject and they followed the instruction of the subject. It could be seen when the students correctly answer the question dealing with square. When the subject gave a question about another term of square, all students could answer, by teacher assistance, that another term of square was recurring multiplication. The teaching process was continued by giving another example related to

the form of square, then asking about the square form linked to the roots. The subject wrote down the square form of number 1-10 on the board, and then asked the students to find out the roots of those numbers. All students joined the overall teaching process well and answered questions given by the subject in the notion of finding out the result of the square and the roots of numbers from 1 up to 10. It also showed that the ZPA of the subject was accepted (*accepted ZPA*). The teaching process was continued by asking the students open up their textbook/LKS with a given page.

The subsequent process provided an example to find out the roots of a number, in which the number consisted of minimally 3 digits. They needed to follow some steps written in their textbook/LKS to complete the task. The subject applied a technique that she wrote down a number on the board, and then asked them to read the steps of determining the value of the square roots of a number based on their textbook/LKS. While the students were reading the steps, the subject completed the task. The students understand all the steps practiced by the subject. Subject gave two exercises to find the square root. All students focused on the subject's explanation while a bit responding it. When the subject turned to the second question, she did another asking one by one session again. She asked about implementing the steps in determining the value of the square roots of a number. The subject pointed out one student, but he could not answer. The subject, then, threw the question to another student. She, again, asked the student to read and to apply all the steps in their textbook/LKS. In this phase, the students were enthusiastic with the teaching method applied by the subject. They followed all the instructions asked by the subject. They also understood the material given, for they could correctly answer the questions and felt enthusiastic during the teaching process. In this phase, ZPA of the subject was accepted by the students (*accepted ZPA*).

The subsequent phase of the subject was dividing the students into some groups and asked them to gather based on their own groups. In groups, the students received a task and were asked to discuss the task. They could not make groups by their own, thus they needed the subject's assistance to be gathered in groups. The subject gave the first question to discuss, asked them to be cooperative for each other, and help their friends who found difficulty. Subject go around in the class to check in every group and help the students who get difficulties. Although they were asked to be cooperative, but some of them tended to complete the task by their own. After finishing the task, each group presented and revised their answer. In this first question, all groups had their same correct answer, thus, the subject did not describe the answer on the board. In this phase, the students did not follow the subject's instruction, since they were not cooperative within their group. Hence, it showed that the ZPA of the subject was rejected (*rejected ZPA*).

The subject gave the second question to discuss in group. In this second question, the students began to work in group and discussed the question, showing that they followed the subject's instructions. In this phase, there was student having trouble in completing the task directly asked

assistance from the subject. She responded the needs and guided the student. Because the subject focused on the assistance toward the single subject only, other students might make such noisy in class. This showed that the students did not follow the subject's instructions. Rather than obeying such instructions to complete the task, they were busy making noisy by their own. When all students had already accomplished the task, the subject got them to answer the question. The representatives of each group, then, presented their answers. This phase showed that the students felt enthusiastic with the subject's teaching method by responding the instructions of the subject.

Next, the subject gave an individual task. Still in group, each student individually accomplished the task, showing that they followed the subject's instructions to achieve the objectives. After finishing the task, both the subject and the students discussed the task. The subject asked for the answer toward the students, and they correctly responded it. During the discussion process, there might be a student who was busy with their own. Recognizing such circumstance, the subject immediately pointed out the student to answer the question. In this phase, it constantly stated that the students accepted the ZPA of the subject, showing from the way of the students who followed the instructions and the way they felt enthusiastic due to the subject's teaching method with its exclusive concern.

In such way of discussion process, it seemed that some students started getting bored with the teaching process. They were busy by their own, falling a sleepy, and less focus. Then the subject closed the teaching process by giving a task to them for homework. In this phase, they rejected the ZPA of the subject, for they did not feel enthusiastic in their learning and did not follow the instructions given by the subject. Rather, they were busy by their own and did not focus on the given instruction.

After finishing the learning process, the researcher conducted a bit interview with the subject for confirming the teaching-learning process that teacher had just done. Teacher argued that it was well-conducted, and most of the students successfully comprehended the given concept. In addition, teacher gave them homework to deepen their understanding related to the concept. There was little alteration between teaching and implementation. It occurred when the students accomplished the task in group. All groups were supposed to initially accomplished the task, represented it, and then the subject latterly asked for the result. In fact, however, when some of the students had accomplished the task, they immediately announced their answer to the subject.

## **Conclusion**

According to the conducted interview and observation, it found that not all actions were accepted by the students in such way of teaching the square roots of a number by the subject. The acceptance for the subject's action (*accepted ZPA*) was found when the students felt enthusiastic

toward the teaching method of the subject by responding the instructions, and answering the given questions. The acceptance of the subject's actions by the students (*accepted ZPA*) was also found from another circumstance, when the students followed the instructions and achieved the teaching objectives. It seemed when they correctly answered the questions. Additionally, it was also found when they could understand the given construct.

However, there were still some rejected actions or *rejected ZPA* by the students. Those were when they felt no enthusiastic with the teaching method of the subject, which made them do not follow the given instructions, get busy by their own, and get bored. *Rejected ZPA* also arose when the students did not follow the given instructions. Rather than following the given instructions for particular task, they precisely did another action. It was also shown when the subject asked questions, but only less students could correctly answer those; and when the subject got them to have a discussion, they rather got busy by their own or individually completed the task, not in group.

There are limitations to this study. Difficulties in recording the learning process experienced by the researchers, because the researchers only use one camera so that sometimes there are some events that are not recorded. Also affect the number of students in this study, if the student is too much then it will be difficult to observe all students. Sometimes only a few students who show different attitudes so that researchers difficult to determine the actions of these students fall into which category. Suggestions are given for further research are determined sub categories of each of the indicators to be used as descriptors so it will be easier to categorize the student action. In addition, use of more than one recording device in order to cover a wider observations and determine the focus of the students that will be observed when the learning process.

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## TEACHER PERFORMANCE BASED ON STRESS AND ORGANIZATIONAL COMMITMENT

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### ABSTRACT

In this globalization era, education is very important especially for teachers. Teachers have to increase their knowledge and their ability in order to give contribution to their students and change the student's character to become a good students.

The educational curriculum in surabaya has been changed by government gradually. In 2012 the government used *kurikulum tingkat satuan pendidikan (KTSP)* but then since 2013 it has been changed into curriculum 2013 (K-13) which has been applied for two years and it was already applied for the first class and the second class students. Many teachers have been trained through workshops. In 2015, the government changed curriculum again in order to be back in KTSP. In fact, the teachers had not yet implemented properly because the materials were difficult to find. It seems that the government was not totally well-prepared yet. In addition, the teacher had to give appraisal about the student's attitude and behavior to each student daily.

This study intended to analyze the influence of work stress and organizational commitment to job satisfaction and teachers performance of senior high school in north surabaya. Job satisfaction and teacher performance as dependent variables and work stress and organizational commitment as independent variables.

The population of this research was 425 private senior high school teachers from north surabaya. The sample used in this reserach was 153 private senior high school teachers. The sample were taken by using cluster random sampling technique, meanwhile their data are collected by filling questionnaires which are then processed by applying the structure equation modelling ( SEM ) and the analysis moment structure ( AMOS 2.0 ).

The results of this research indicate that there were influences between stress work on job satisfaction, organizational commitment had influence on job satisfaction, stress work had influence on teacher's performance and organizational commitment had influence on teacher's performance. It is also expected to be useful for the next reserchers and can be meaningful for the sciences especially of organizational behaviors.

**Keywords** : Work stress and organizational commitment, job satisfaction and teachers performance

## Introduction

Education serves as a way or means in advancing the nation's cultural civilization. Education is expected to provide the widest opportunity for all citizens in obtaining the right for education in accordance with the hierarchically levels. Profession as teachers has an important role in educating students to be able to become a national asset of character particularly as the assets of the next generation.

The teacher's role is very important to the intelligence of learners that changes the character of the learners better. This has to do with the learning system or curriculum change since 1994 turned into the 2004 curriculum (Competency-Based Curriculum), later it turned into a Unit Level of Curriculum (SBC) and transformed into the curriculum in 2013 (K-13). The latest raises new polemics that dress the minister then to replace the curriculum anyway. In 2012 the Government and minister of Mohammad Nuh applied learning systems to the curriculum of 2013 (K-13) and started running already 2 years and its implementation is for class X and XI. The 2013 curriculum is expected no change in the learning system because of its improvement from the previous curriculum. By 2015 the new minister of Anis Bawesdan, the curriculum is changed and returned to the Unit Level Curriculum (SBC) or curriculum 2006. The curriculum changes create confusion and stress for teachers formerly SBC which is not 100% comprehensible turns into the curriculum in 2013 and eventhough it is still unrealized well, it is finally replaced using the old curriculum of SBC. The curriculum of SBC uses national standards and teachers are given the freedom to create their own curriculum based on their respective territory but still sticks to the goals that have been agreed upon by the Government. At SBC, teachers are still confused especially on how to create the Plan of Learning Programme (RPP), how to make a minimum completeness criteria (KKM), item analysis, and how to report on the development of student learning. In fact, many teachers do a copy-paste of the document from other schools so that it will be transmitted from one school to another school. According to Handoko (2010: 200) stress is a condition that affects the emotional tension, the thought process and the person's condition. According to Anwar Khan et al. (2012) saying that *Teachers' stress in particularly means a situation where the teachers are exposed to Certain unwanted environmental factors, which either exists within the educational institution (internal factors) or exists outside the educational institution (external factors), These factors hamper the normal routine life of teachers by negatively affecting Reviews their performance at work.*

Organizational commitment to a teacher is indispensable in carrying out its duties as a teacher. Although the teachers are very heavy task in implementing the learning of the students, a teacher must remain committed to the profession. Mc Schane *et al.* (2003:32) explain *the strong organizational behavior commitment can make someone to achieve their importance and the aim organizational with maximal.*

Job satisfaction is closely linked to individual achievement. If a person is satisfied with the performance of work will increase and vice versa if someone feels dissatisfaction at work will lead to decreased achievement. According Luthans (2006: 243) job satisfaction is an emotional state that is happy or positive emotions derived from the assessment of a person's job or work experience.

Teacher performance is the result of the performance of teachers to become professional teachers According to the Law no.14 th 2005 that the professional is the work done by someone and become a source of income and a life that requires expertise, or skills that meet certain quality of standards or norms and require a professional education. A teacher with his expertise, can be expected to change the character of the students to become qualified learners.

At the present globalization, education is required to be better especially on teachers to constantly improve their ability so that teachers can contribute to learners to be better. The

purpose of this study is to determine the effect of work stress and organizational commitment to job satisfaction and teacher's performance.

## **THEORETICAL REVIEW**

### **Work Stress**

Each person must experience stress at work. Work stress is always experienced by every individual in carrying out the duties as an employee because they feel dissatisfied with their workplace or also due to the leadership which cannot protect his men, causing employee turnover or caused by the curriculum changing. Prolonged stress will lower morale and performance of employees. According to Luthans (2006: 243), job satisfaction is an emotional state that is happy or positive emotions derived from the assessment of a person's job or work experience. According to Robbins (2006: 794), there are three categories of stress in the workplace, namely: environmental factors, organizational factors and individual factors. Environmental factors are related to the relationship of a person in the organization that is in a relationship with superiors, subordinates or colleagues. If a person is not able to establish relationships that are not good, it will give rise to feelings of depression, organizational factors which are related to the role of individuals within the organization and the individual factors relating to the profession and the excessive workload and pressure of time given to complete.

### **Organizational commitment**

Organizational commitment is defined as a situation where an employee favoring certain organizations as well as the goals and desires to retain membership in the organization. Thus, the involvement of high employment means favoring certain work of an individual, while the high organizational commitment means an impartial organization that recruits individuals. (Robbins, 2008). Organizational commitment is a person's attitude towards the institution organization to achieve a goal and has high organizational commitment to the institution. According to Allen and Meyer in Luthans (2006: 249) there are three dimensions in organizational commitment, the affective 1. Commitment is the employee's emotional attachment, identification and involvement in the organization, 2. Commitment of continuation is a commitment based on the advantages and disadvantages associated with the release employees of the organization, 3. Normative commitment is feeling obliged to remain in the organization because it must be so, such action is the right thing to do.

### **Job satisfaction**

Job satisfaction refers to an individual's general attitude towards work, Robbins (2002: 179). Further he said that the general attitude can be classified to two things: the negative attitudes that will raise a worker if they are not satisfied with their jobs. Conversely, if a person is satisfied with the jobs then he/she will bring a positive attitude. It is also in line with what is proposed by Locke (in Bhuian, 1996) who states that job satisfaction is a positive or negative attitude resulting from the assessment of workers against job or experience obtained. *Job satisfaction is an attitude that individuals have about Reviews their jobs. It results from their perception of Reviews about their job, based on factors of the work environment, such as the supervisor's style, policies and procedures, work group affiliation, working condition, and fringe benefits (Gibson et al., 1997: 75).*

Job satisfaction for teachers is an expectation that teachers can perform teaching duties. A teacher will be satisfied if the job satisfaction of teachers are met with the achievements of learners and success in teaching. Job satisfaction of teachers will have an impact on performance. According to Hughes (2012: 312), it is also associated with feelings of job

satisfaction or a person's attitude about the work itself, salary, promotion or education, supervision, co-workers and workload.

### **Teacher Performance**

A performance by Bernardin and Russel (1995: 379), is a record of gains resulting from the function of a particular job or activity during a specific time period. So the performance with regard to the work is achieved by employees in a certain period. In this case the performance is related to the quantity and quality of work produced. *Bowin and Harvey (1996:140) said Performance may be defined as the accomplishment of an employee or manager assigned duties and the outcomes produced on a job function or activity during specified time period*".

Teacher performance or achievement is the result of the work of teachers in performing their duties as teachers which are associated with the increased human resources through the education sector that is expected to become professional teachers in the field. Related to the principles it requires for training and coaching continuously to develop their knowledge. According to the Ministry of National Education in 2008, the teacher's performance appraisal program includes planning learning activities, the implementation of learning activities and learning evaluation.

### **The Relationship Between Work Stress and Organizational Commitment.**

Work stress emerges as a mismatch between the individual and the work environment, the higher the job stress experienced by a person, the lower the organizational commitment has. Velnampy and Aravinthan (2013) argue that work stress has a negative and significant relationship with organizational commitment. Role conflict and ambiguous role as a shaper of stress have an influence on the decrease of organizational commitment, which means there is a negative and significant relationship between work stress with organizational commitment (Pool, 2000)

The research hypothesis as follows :

H1 : There is a negative affects between work stress and organizational commitment

### **The Relationship between Work Stress and Job Satisfaction**

Stress and job satisfaction have a reciprocal relationship. Several studies are already conducted by researchers who study the relationship between stress and job satisfaction. Both are interconnected as has been proposed by Robbins (2003), that one of the effects of psychological stress can decrease employee satisfaction. Robbins (2003) also believes stress can lead to dissatisfaction. Stress is associated with work-related cause dissatisfaction with the job and that's the psychological effect of the simplest and most obvious effect of stress. Furthermore Robbins (2003) suggests that the effects of stress on a much more immediate gratification. Work-related tension tends to reduce the general job satisfaction. Although low to moderate levels may improve performance, the employees feel that stress is not fun.

Then the research hypothesis is:

H2: Work Stress affects on Job Satisfaction

### **The Relationship between Job Satisfaction and Teachers Performance**

Staff job satisfaction can affect patient outcomes. All service providers showed better services when they are satisfied with their jobs and when they feel committed to the organization (McNeese-Smith, 1996). Al-Ahmadi (2009) conducted a study of 923 nurses at a hospital in Riyadh, performance-related employees are found positive with overall job satisfaction

(satisfaction in terms of covering satisfaction with the work itself, supervision, relationships in the workplace, payment, promotion, and working conditions). Some researchers found no association between employee performance and job satisfaction. Crossman & Zaki (2003) conducted a study and revealed no significant relationship between job satisfaction and employee performance.

Then the research hypothesis is:

H3: Job Satisfaction affects on teachers performance

### **The Relationship of Organizational Commitment and Teachers Performance**

Employee commitment is an important factor to improve organizational performance. Suliman and Iles (2000) found that there is a positive relationship between organizational commitment (three components) and employee performance. Al Ahmadi (2009) conducted a study of 923 nurses at a hospital in Riyadh, Saudi Arabia on the relationship between employee performance and job satisfaction and commitment of employees on organisasional. Performance is also positively associated with organizational commitment, confirming the discovery by researchers earlier that organizational commitment is a strong determinant of the performance of the employee (Al-Meer, 1995 in Al-Ahmadi, 2009).

Then the research hypothesis is:

H4: Organizational Commitment is affect teachers performance

### **The Relationship between Work Stress and Teacher's Performance.**

Higgins (Umar, 2000: 259) argues that there is a direct relationship between job stress and employee performance, a large number of studies have investigated the effect of work stress with the performance presented in the model of stress - performance (inverted U relationship) that the law of Yerkes Podson (Mas'ud, 2002 : 20). The inverted U pattern suggests the influence of stress level (low - high) and performance (low - high). If there is no stress, challenge, and work is also no tendency to performance decreases. If the stress even become too large, the performance will start to decline because of stress interference with the implementation of the work. Employees lose the ability to control it. The most extreme result is performance becomes zero, the employee becomes no longer strong enough to work, desperate, out or refuse work to avoid stress.

Then the research hypothesis is:

H5: work stress affects teachers performance

### **The Relationships of Organizational Commitment and job satisfaction**

Employee commitment is an important factor to improve organizational performance. Organizational commitment is the identification and involvement of someone who is relatively strong against the organization. Employees who have a strong commitment to the organization is an asset in achieving the goals of the organization, so as to provide maximum benefit to the organization. Employees are encouraged to have commitment needed to resolve the problems of internal organization such as reduced cost of operations and conflicts within the organization. A strong commitment allows each employee to strive to meet the challenges and pressures that exist. Success in meeting these challenges will foster a sense of pride towards the organization and it raises employee satisfaction (Toegijono, 2007). Research conducted Kadir (2003) examines the effect of organizational commitment on job satisfaction and turnover intentions auditor in public accounting firm in Java. The research results proved that the organizational commitment significantly associated with job satisfaction.

Then the research hypothesis is:

H6: Organizational Commitment affects on job satisfaction

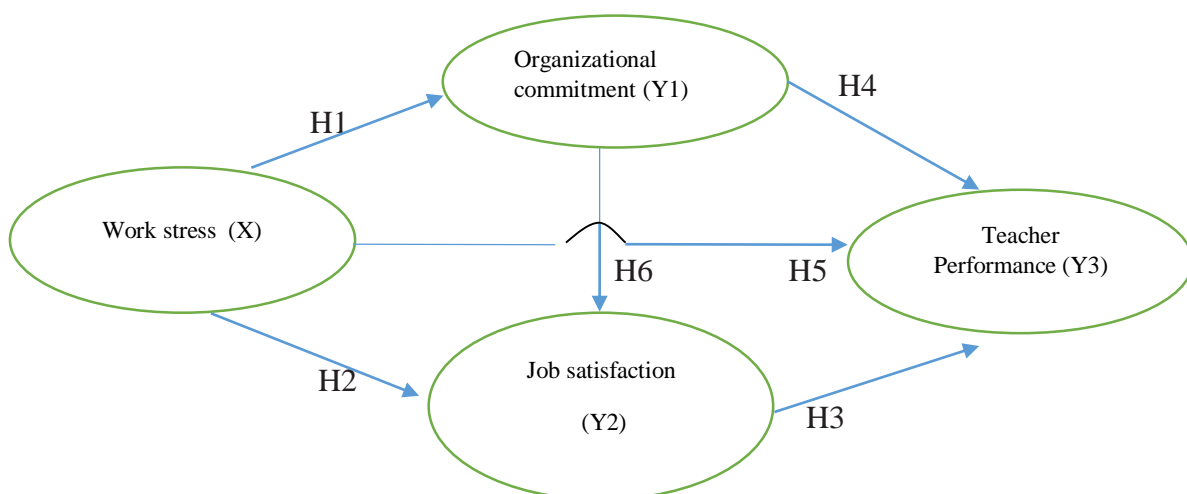
**Methodology Research**

This research is a descriptive that aims to describe the performance of teachers. The population in this study are all high school teachers in North Surabaya Private Schools totaling 425 people. The samples included 200 teachers with the criteria, teachers who teach the curriculum in 2013. Methods of sampling use purposive random sampling technique. Data collection methods are surveys and questionnaires. Data analysis technique is using *Structural Equation Modelling* (SEM) by using the program of *Analysis of Moment Structure* (AMOS) version 2.0.

**Table 1**  
**Dimensional Variabel**

Variable	Indicator	Source
Work Stress (X)	X1.1 = Environmental Factors X1.2 = Organizational Factors X1.3 = Individual Factors	Robbins ( 2006 : 794 )
Organizational Comitment (Y1)	X2.1 = Affective Commitment X2.2 = Commitment Continuant X2.3 = Normative Commitment	Allen and Meyer in Luthans ( 2006: 249 )
Job Satisfaction (Y2)	Y1.1 = Salary Y1.2 = Promotion or Education Opportunities Y1.3 = Pengawasan Yi.4 = Co-workers Y1.5 = Workload	Hughes (2012 : 312)
Teachers Performance (Y3)	Y2.1 = Planning Learning Program Y2.2 = Implementation of Learning Activities Y2.3 = Evaluation of Learning	Depdiknas. 2008

**Conceptual framework**



**Picture 1**  
Framework of Research

## ANALYSIS AND DISCUSSION

### Description of Respondents

The number of samples in this study is 200 respondents in North Surabaya high school teachers with the following characteristics: 43% male and 57% female, the age is 30th of most respondents - 40 th by 46%. The respondents education are S1 and S2 by 61% = 39%. The working periods of respondents are between 10-20 = 35%. Conformance Test Model (Goodness - of-fit test)

Testing the model in SEM aims to look at the suitability of the model. According to Kline (1998) that the model can be resumed if the results of the overall model test or F-test at  $\alpha = 5\%$  are outside the boundaries of more than 1.96 in two-way test, means that the indicator showed no relationship among the variables of oxygen. Chi-square test showing a value close to zero indicates a low difference between expectations and observations, in addition, the probability level should be greater than 0.05 when the chi-square is close to zero. Indicators The Comparative Fit Index (CFI) of this research is greater than 0.80. Value Root Mean Square Error of Approximation (RMSEA) is smaller than 0.06 or smaller. If the model has been fit, the parameter estimates have been tested. If the model does not fit, it can be repaired. CMIN / DF is relatively less than 2.0 TLI (Trucker Lewis Index) \* with a value of showing very good fit. Results of testing the suitability of the initial model in this study are presented in Table 2.

**Table 2 The Results of Model Testing**

Goodness of fit Indeks	Cut off Value	Analysis Results	Model Evaluation
Chi- Square	Kecil ( < 272.836)	123.768	Good
Probability	$\geq 0.05$	0.272	Good
RMSEA	$\leq 0.08$	0.028	Good
GFI	$\geq 0.90$	0.884	Marginal
AGFI	$\geq 0.90$	0.846	Marginal
CMIN/DF	$\leq 2.00$	1.076	Good
TLI	$\geq 0.95$	0.985	Good
CFI	$\geq 0.95$	0.987	Good

Source : Processed data

Based on Table 2, it can be seen that there are six (6) criteria which can be said to be good and two (2) models are marginal but still within the boundary area so that the model can be acceptable to all.

**Table 3, LANE Coefficients**

Variable	Lane Coefficient	C.R.	Prob.	Note
work stress (X) → organizational commitment (Y <sub>1</sub> )	0.600	1.949	0.051	Not significant
work stress (X) → Job satisfaction (Y <sub>2</sub> )	0.848	2.333	0.020	Significant
work stress (X) → Teachers Performance (Y <sub>3</sub> )	0.217	2.574	0.010	Significant

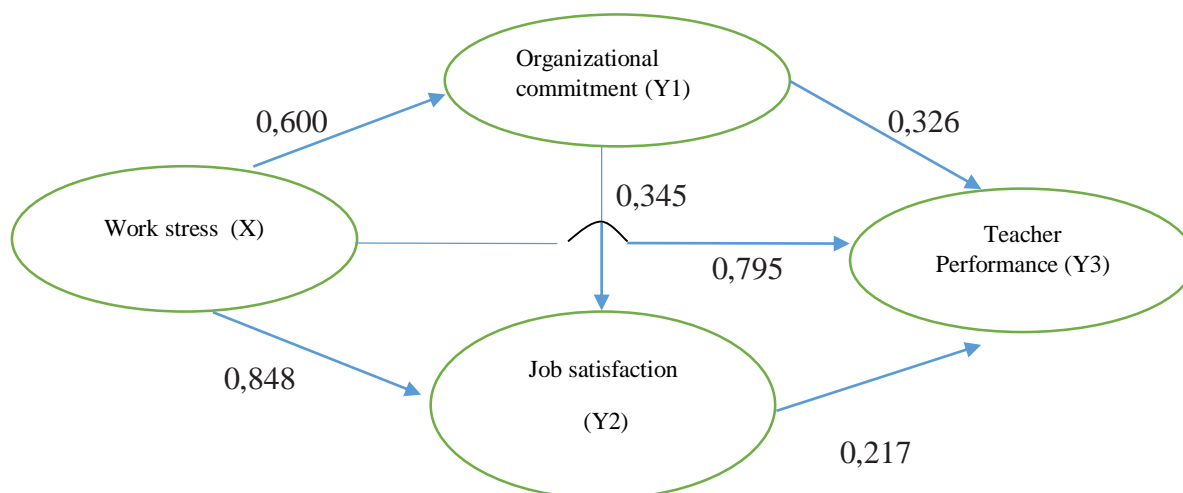


organizational commitment (Y <sub>1</sub> ) → Teachers Performance (Y <sub>3</sub> )	0.326	0.320	0.019	Significant
organizational commitment (Y <sub>1</sub> ) → Job satisfaction (Y <sub>3</sub> )	0.795	2.255	0.024	Significant
organizational commitment (Y <sub>1</sub> ) → Job satisfaction (Y <sub>2</sub> )	0.345	2.523	0.012	Significant

Source : Processed data

**Results of Coefficient Line**

1. Work stress is not significant to organizational commitment to the path coefficient of 0.600 and probability = 0.051
2. Work stress is significantly to job satisfaction and the path coefficient is 0,848 and probability = 0,020
3. Work stress is significantly to the teachers performance by the path coefficient of 0,795 and probability = 0.010.
4. Organizational Commitment is significantly to the teachers performance with path coefficients and probability of 0.326 = 0.019
5. Organizational Commitment is significantly to job satisfaction with 0.345 path coefficients and probability = 0, 024
6. Job satisfaction is significantly to the teachers performance with path coefficients and probability 0.217 = 0.012.



**Picture 2**  
Framework of Research

## Discussion

The first hypothesis in this study is that the work stress has negative effect an organizational commitment. The result using AMOS software in Table 3 shows that the probability level of 0.051 with the path coefficient is positive at 0.600 with CR value of 1.949 for the probability value is less than 0.05, the first hypothesis is rejected. Work stress on teachers is due to curriculum changes do not alter the commitment of the teachers at the school institution where teachers work in private high school of North Surabaya. Education in Indonesia is always changing the educational curriculum according to the development of education and knowledge of the world. The curriculum that has changed is the curriculum of 1994 turned into the curriculum of 2004 (competency-based curriculum) then turns into curriculum units Level Curriculum (SBC) and transformed into the curriculum of 2013 (K-13). Work stress of the North Surabaya Private high school teachers as curriculum changes only occur momentarily and teachers remain committed to the institution. The results of this study do not support Fontana in (Rulestari and Eriyanto, 2013: 22), namely Increased work stress causes a decrease in organizational commitment and vice versa higher organizational commitment, employees will feel comfortable in the work so as to reduce work stress. This study does not support the research of Wibowo, Putro. (2014) who says that work stress negatively affect commitments by -0.133 and t-statistics of 11.7.

The second hypothesis suggests that work stress has a significant affects on job satisfaction. The calculation results in Table 3 indicate that the probability level of 0,020 by the path coefficient is positive at 0,848 with a value of CR for 2333, because the probability value is less than 0.05, the second hypothesis is received. Meaning that the higher the work stress is needed to support teachers performance. These results suggest that stress work and job satisfaction happen because teachers feel the pressure of work or work stress are due to changes in the curriculum that has given better results in learners so as to provide satisfaction for teachers. Job satisfaction of teachers can be fulfilled with the increased achievements of learners. This is consistent with the theory of Hughes (2012: 312) associated with feelings of job satisfaction or a person's attitude about the work itself, salary, promotion or education, supervision, co-workers and workload. This study supports the research of Suhanto, Edi (2009) who says that work stress effects on job satisfaction by demonstrating the value of -5.796 CR which is greater than 1.96 with a probability of 0.001 less than 0.05.

The third hypothesis in this study, there is an affects job satisfaction to teachers performance. Results of the analysis in Table 3 shows the probability level of 0,010 by the path coefficient is positive at 0.217 to the value of CR for 2574, because the probability value is less than 0.05, this hypothesis is accepted. This suggests that the higher the job satisfaction of the teachers performance will be better / higher as well. Teachers assess that job satisfaction is required to support the performance. At the high school level, education environment relations which influence job satisfaction and performance occurs because the teachers feel that there is a match between the expected and the reality of works. The work itself which is a part of capability yields high performance. The results are consistent with the opinion of Robbins (2006) that, job satisfaction affects the productivity of labor and McCue and Gianakis (1997) that there is a relationship only between job satisfaction and performance of employees of financial management in government offices of Ohio. The results of this study are consistent with the theory Robbins and Judge (2008: 113) that there is a correlation between job satisfaction and performance which is quite strong. This study supports the research of Koesmono (2005) that affect the performance of job satisfaction with a regression coefficient of 0.004 P = 0.000

<0.005 and Khan, et al. (2012) job satisfaction as independence variables was significant influence on employee performance 0.238 P = 0.001 <0.050.

The fourth hypothesis in this study, there is an affects of organizational commitment to teachers performance. The results of calculations using the software AMOS in Table 3 shows that organizational commitment on teachers performance is no effect with a probability level of 0.019 marked by positive path coefficient of 0.326 with CR value of 0.320 for the probability value less than 0.05, the fourth hypothesis is accepted. In this study, the higher the organizational commitment, teacher performance will also increase. This study supports the research of Wahyuni, et al (2014) an organizational commitment of a teacher to his school closely related to his performance. High organizational commitment will motivate a teacher to maximize his performance, since there is a sense of effort to perform his work maximally. Kreitner and Kinicki (2010: 163) says organizational commitment Reflects the extent to which an individual Identifies with organization and is committed to its goal. In turn, higher commitment can facilitate higher productivity. The output of this research supports the research conducted by Khan, et al. (2010) Stating that organizational commitment were positive influence to imployee job performaance of 0.218 P = 0.000 <0.050.

The fifth hypothesis in this study, there is an affects of work stress to teachers performance. The calculation results in Table 3 indicate the probability level of 0,024 by the path coefficient is positive at 0,795 with a value of CR for 2255, because the probability value is less than 0.05, the fifth hypothesis is accepted. In this study, the higher the stress of the work of teachers, especially with the changes in the curriculum and teacher workload increasing the performance of teachers become better / higher. This is evidenced by many learners who are accepted at state universities, military education of Police Academy, the Armed Forces Academy and others. The results support the research of Noviansyah and Zubaidah (2011) who says that there are job stress and partial work motivation that effect on employee performance of PT Plantation Minangga Ogan Balfour with P = 0.00 and the influence of the performance is of 0.91.

The sixth hypothesis in this study, there is an affects of organizational commitment to job satisfaction with a probability level of 0,012 by the path coefficient is positive at 0.345 to the value of CR for 2523, because the probability value is less than 0.05 then the sixth hypothesis is accepted. This shows that the higher organizational commitment, the job satisfaction of teachers will be better / higher as well. The high school environment and organizational commitment of North Surabaya are to encourage teachers to always engage with learning activities, changes in the curriculum of K-13 SBC becomes a challenge for teachers. This involvement gives feeling of being able to control the situation because during the course of the learning process, teachers learn to understand how he/she has a role in the changes that occur in the institution. The involvement of teachers in the implementation of the curriculum changes of 2013 as a commitment that gives a sense of satisfaction will the result performance. The results support the theory of Luthans (1998: 125) Although early research Seemed to support a positive relationship between job satisfaction with organizational commitment. The results support the study by Exam and Alwi (2005) who show significant influence of organizational commitment and job satisfaction with a regression coefficient of 0.111 P = 0.022 <0.05.

## Conclusion.

1. Work stress does not affect the organizational commitment. The hypothesis one that states the work stress effects an organizational commitment is unproven and rejected. Work stress on teachers due to curriculum changes do not alter the commitment of the teachers at the school institution where teachers work in private high school of North Surabaya. Work stress of high school teachers for curriculum changes only occur momentarily and teachers remain committed to the institution.
2. Work stress effects to job satisfaction. The second hypothesis which states work stress effect on job satisfaction is proven. These results suggest that work stress and job satisfaction happens because teachers feel the pressure of work or work stress are due to changes in the curriculum that has given better results in learners so as to provide satisfaction for teachers.
3. Job satisfaction directly affect teacher performance. Which means that the hypothesis third stating job satisfaction affects teachers performance is proven and true. Job satisfaction is one of the important aspects that need to be considered in efforts to increase to the teachers performance. The private school teachers in Surabaya feel that there is a match between the expected and the reality of works. The work itself which is a part of capability yields high performance.
4. Organizational Commitment affects to teachers performance . The fourth hypothesis stating organizational commitment influencing on teachers performance is proven. In this study, the higher of the organizational commitment so that teachers performance will also increase.
5. Work stress affects to teachers performance. The fifth hypothesis which states work stress effects on teachers performance is proven. In this study, the higher the stress work of the teachers, especially with the changes in the curriculum and teacher workload increasing the teachers performance become better / higher.
6. The affects of organizational commitment to job satisfaction. Hypothesis sixth organisationjal commitment effect on job satisfaction is proven. The involvement of teachers in the implementation of curriculum change is a form of organizational commitment that gives a sense of satisfaction will result of techers performance.

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# A Proposed Syllabus for Computer and Networking Technology Students at One Vocational High School at Jember, Indonesia

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## ABSTRACT

The current study was to develop a proposed syllabus for students of Computer and Networking Technology at one vocational high school in Jember, Indonesia. This study emerged as to respond the data from needs analysis that was gathered from the students, teachers, administrators and result of document analysis. Using research and development by Yalden model, competence based syllabus which focused on reading comprehensive is chosen. The portions of this syllabus are more or less about listening 10%, speaking 30%, reading 40%, and writing 20%. Consisting of cognitive, attitude, and skills as the pillars which constructed this syllabus based on Indonesian Regulation Number 19 provision 1 verse 4. Additionally, the components of syllabus such as goals, basic competence, indicators, learning activities, assessment, sources and media, and time allocation are also discussed. This study is very important for ESP teachers of vocational schools in Jember and Indonesia in order to understand how teaching English for vocational high school students should be implemented at a classroom level. Suggestions for future research are validating the proposed syllabus to the experts' validation and experimenting the product.

**Key words:** *Proposed syllabus, Computer and Networking Technology, Competence-Based*

## 1. INTRODUCTION

Starting on 2015, Indonesia faces ASEAN Economic Community or called AEC 2015. It is a trade free program in ASEAN that exchange in sectors of fund, commodity, merit and labour. In case of AEC, it is necessary for Indonesia to develop human resources to be ready for AEC 2015 that could compete in ASEAN level. Hence, it is important for school which can prepare their students for challenging in national or international level. Designing an appropriate syllabus could be a solution for setting classroom that can help students in their learning process.

Regarding to designing a syllabus, it is necessary to define what syllabus is. Richard et al (2002) give their opinion that syllabus reflects view of language and of language learning. From the definitions, the researchers tried to review the existing syllabus as a part of needs analysis. It was conducted on Computer and Networking Technology (CNT) study program because it is one of favorite program in the school. It covered three level classes such grade of tenth, eleventh, and twelve. It found that those syllabus tended to English for general purposes (EGP) rather than English for specific purposes (ESP). In addition, the English teacher stated that each level of class used one syllabus for all study programs in the school. Therefore, there was no specific English syllabus for CNT study program in which the students need English for computer and networking technology.

To know the school management, interview authority was done by the researchers. It found that the school is asked students have good competences to compete in regional, national, and international level. It proved by doing students exchange in 2014. He also stated that it is very

important for the students to have English competence. Thus, this school has prepared the students facing professional field.

Besides, interview students were conducted in needs analysis to gather students' voices related to English teaching and learning process. Based on the result of students' interview described four findings. First, it revealed that students need reading skill with emphasizes on vocabularies related to CNT. It used to help students understanding the instruction of computer and networking if the errors happened. Second, it found that students need speaking skill to improve their communication skill related to computer and networking. They need speaking because they must report the error to their teacher using English and it was for communicate with native speakers. Third, it was the importance of writing and listening skill to enrich their knowledge of English. Fourth, it was the variety of teaching methods. Various teaching methods was needed, such as watching movies, jokes, etc by the students so that they are not bored. As a result, reading skill emphasizing on vocabulary of CNT terms was as a highlighted on proposing English syllabus for CNT study program with various teaching methods.

Dealing with the component in proposing syllabus, standard of graduation competence should be included. It was a regulation that stated on Indonesian Regulation Number 19 provision 1 verse 4 mentioning Standard of Graduation Competence covering cognitive, attitude, and skill. It meant that students should achieve those three in each education level as a guidance in deciding students' assessment. Thus, competence-based can be a foundation in proposing English syllabus for CNT study program.

Accordingly, the purpose of this study aimed to develop a proposed syllabus for students of CNT study program at one vocational high school in Jember so that the teacher understand how to teach English for vocational high school students should be implemented at a classroom level. The competence-based syllabus was chosen focusing on reading and vocabulary integrated with listening, speaking and writing skill.

### **1.1 Specification of the Product**

This product was Competence-Based syllabus covering three elements namely, cognitive, attitude, and skill. In term of cognitive element, the syllabus provided student for their knowledge or information related to CNT in the form of English empirically. For attitude element, it provided students to work big group, small group, and individual. It was to help students working team and individual that was useful for their real life situation. Moreover, skill covered the students' ability on listening, speaking, reading, and writing that emphasized on reading. Therefore, Competence-Based syllabus consisting of the three elements was the type of syllabus that would be developed. In concern of the sequence list of this syllabus, it was adapted from Brown (2007) that stated a syllabus minimally consist of goals, objective, topics, situations, skills, materials, and assessment.

## **2. RESEARCH METHOD**

In regard of purpose of this study, Research and Development design was implemented in this study. It was adapted from Yalden model (1983) which the themes based on the learners' interest (Richard et al (2002) appropriated with the students of vocational high school. The stages of developing this syllabus were (1) needs analysis, (2) the description of purpose, (3) the choice of a syllabus type, (4) the proto syllabus, and (5) the pedagogical syllabus. First was needs analysis. Needs analysis is a identification process to discover the lack between students current situation and the target situation. In this case, the researchers used four instruments in needs analysis such (1) students interview were to find students voices about English teaching and

learning process; (2) English teacher interview was to find information teaching and learning process and existing syllabus; (3) administrators (Authority interview) was to gather information about school management; (4) documents analysis was to review the existing syllabus. Second was the description of purpose. It was to develop a proposed English syllabus for additional class of CNT students. Third was the choice of a syllabus type. In concerns of Indonesian Regulation of Standard of Graduation Competence, Competence-based syllabus was chosen that covered three elements such cognitive, attitude, and skill. Fourth was the proto syllabus. In this stage, the researchers jot down what program would be proposed. Last was the pedagogical syllabus in which the researchers wrote the proposed syllabus in detail.

### **3. FINDINGS**

This study was to develop a proposed English syllabus for CNT study program. On developing English syllabus, the researchers highlighted on the type of syllabus. The syllabus was Competence-based syllabus which covered cognitive, attitude, and skill used for additional class of grade tenth, eleventh, and twelve. Through this syllabus, the students were expected to have competences on English for Computer and Networking Technology that they could compete on national and international level. In addition, they have good manner when they join in the professional fields. Based on the development results, there were sequence list of the syllabus.

#### **3.1. Course Description**

This course introduces the students to English for computer and networking technology. The students will learn all skills of English with the emphasis more on reading and vocabulary. They will learn reading comprehension and vocabulary items related to computer and networking technology, and learn how to communicate to both teacher and students using English. In addition, they will also learn listening and writing English skill to support their reading comprehension and speaking skill.

#### **3.2. Goal**

The goal of this syllabus was the students are expected to have many vocabulary items related to computer and networking technology in order to understand any materials written in English when they learn their major which is computer and networking technology and being able to communicate to their teacher using the correct pronunciation reporting any errors or whatever related to their study program.

#### **3.3. Basic Competence**

This English syllabus consisted 16 basic competences that can be used for grade of tenth, eleventh, and twelve students. The basic competence highlighted on reading skill emphasizing on vocabulary of CNT terms in which the portion of language skills was more or less about listening 10%, speaking 30%, reading 40%, and writing 20%. The following basic competences were for each skill.

##### **3.3.1. Listening**

- Listening to the song and completing the missing lyrics.



**3.3.2. Speaking**

- Expressing ways that cover the technique to ask for help, give a help and refuse to help or refuse a help.
- Expressing ways that cover the technique to ask, give and decline to give for advice.
- Reporting the computer problems

**3.3.3. Reading**

- Reading and comprehending the text about Computer.
- Comprehending some sentences of errors in the computers.
- Comprehending the text about internet.
- Comprehending some sentences of errors in the computers.
- Comprehending the jokes in the form of text which are related to computer and networking technology
- Comprehending some sentences of errors in the computers

**3.3.4. Writing**

- Writing simple sentences using English vocabulary of computer and networking technology
- Writing a procedural text with the theme related to computer and networking technology

**3.3.5 Integrating language skills and language Components**

- Memorizing some vocabulary items related to computer and networking technology and writing some simple sentences using those vocabulary items.
- Writing and reading a poem using vocabulary items related to computer and networking technology.

**3.4. Indicators**

For indicators, each basic competence has one until three indicators that are resulted from breaking down of basic competences. These following indicators was for basic competence of reading comprehension.

Students are able to...

1. Read the text with a correct pronunciation
2. Comprehend the meaning of the text
3. Answer the questions of the text

For other indicators, you can see Appendix A.

**3.5. Learning Materials**

All of the materials in each meeting related to computer and networking technology terms because this syllabus employed English for Specific Purposes (English for computer and networking technology) that can prepare students having professional competence. For example, it was a part of reading materials "A computer is a programmable machine ...". (See Appendix A)

**3.6. Learning Activities**

In case of learning activities, three types activities were implemented such big group discussion (whole class), small group discussion (consist of 2-6 students), and individual activities. Six meetings would employ individual and small group discussion, three meetings would work individual and big group discussion, three meetings would do individual activities only, and three meetings would work small group discussion only, as well as one meeting carry out individual,

small group, and big group discussion. Moreover, this syllabus proposed varieties of teaching strategy such as jigsaw, think-pair-shared, games, etc. (See Appendix A)

### **3.7. Assessment**

In concern of assessment, this syllabus applied process assessment and product assessment. In case of process assessment, it would assess students' daily activities in group discussion and individually that aimed to know the students' progress work in team and individually. Moreover, product assessment also applied. It would assess the result of the students. For instance, after the students were asked to read a text, they might answer questions given by the teacher. Then, the teacher assessed their result.

### **3.8. Sources and Media**

For teaching and learning materials could be taken from any resources that might related to CNT study program. LCD, power point, audio speaker, and English dictionary were as the media in this syllabus.

### **3.9. Time Allotment**

For the time allotment, this syllabus provided 16 meetings and each meeting consisted of 90 minutes. It was as additional class or extracurricular so that all students can join the class without disturb the main class.

## **4. DISCUSSIONS**

This study focuses on developing a proposed English syllabus for students of Computer and Networking Technology study program. Some points mention further.

First, the type of English syllabus is Competence-Based syllabus covering cognitive, attitude, and skill that is in line with Indonesian Regulation Number 19 provision 1 verse 4 mentioning Standard of Graduation Competence. Cognitive means what the students' professional competences of English for Computer and Networking Technology, attitude is how the students' manner of working in team and individual that reflect the real life situation, and skill is the students' English skill (listening, speaking, reading, and writing). Thus, through this syllabus, the students have the combination of professional competences, English skill, and good manner that can be useful in the professional field.

Second, this syllabus emphasizes on reading skill integrated vocabulary of CNT term in which the portion of language skills was more or less about reading 40%, listening 10%, speaking 20%, and writing 30%. It is supported by the students' voices that they need more on reading comprehension. Reading is used to help students understanding text if computer or networking are error. They also need speaking when they report the error to their teacher. Moreover, writing and listening is needed to support their English competences. Additionally, various teaching method are also implemented such as mind mapping, think-pair-share, role play, jigsaw, drilling, and games. Therefore, this syllabus proposes English teaching and learning course with joyful learning that based on the students' needs.

Third, in term of sequence list in the English syllabus, there are seven components, namely goals, basic competence, indicators, learning activities, assessment, sources and media, and time allocation. The sequence list is adapted from Brown (2007) that topics and situation are included on the learning activities. The contents of those elements are developed based on the

students' needs referencing from the data in needs analysis so that it reflects the view of language and of language learning (Richard *et al*, 2002). Goals reflect the students' competence in comprehending written products and communicating with others that related to computer and networking technology. In addition, basic competences show the competences that should the students achieve covering cognitive, attitude, and skill. The students' achievements are drawn from the indicator that piloted in learning activities. This syllabus also provides assessment, sources and media, and time allotment that can be used by the teacher to teach students of computer and networking technology for additional class.

## 5. CONCLUSION

This study is to develop the proposed English syllabus for students of Computer and Networking Technology study program that can apply for additional class joining grade tenth, eleventh, and twelve. This syllabus emphasizes on reading skill integrated vocabulary of CNT term in which the portion of language skills are more or less about reading 40%, listening 10%, speaking 20%, and writing 30%. Besides, Competence-Based syllabus is chosen as type of syllabus that contain of cognitive, attitude, and skill to prepare the students in facing professional fields. This syllabus has sequence list consisting of goals, basic competence, indicators, learning activities, assessment, sources and media, and time allocation. This syllabus is a proposed syllabus; therefore, the future researchers could validate the syllabus to the experts and experiment the syllabus to the CNT students.

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## Students' Perception on the Benefits and Problems of Blended Learning

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**Abstract-** Indonesia will face an era of Asian Economic Community, where one of the components thereof is the allowance of skilled labor working in Asian countries. To get the young generation be ready for this, it is important for them to have specific required skill(s) such as the skill in Information and Communication Technology (ICT). It has been popular nowadays as it is the part of 21<sup>st</sup> century learning. Particularly, it is integrated in the learning process in every level of education. Therefore, the teachers and the students should improve their functional and critical thinking skills with the use of information, media, and technology (ICT). According to several studies, one of the teaching methods employed to support the use of ICT is blended learning. It is a combination of a technology-based instruction (online language learning) and a face-to-face classroom teaching. Nevertheless, since blended learning remains to be entirely applied in Indonesian system of education, it can cause a problem, whether the students are interested and can comprehend the materials or not. Therefore, the aim of this study is to find out students' perception on the benefits and problems of blended learning. The methodology used in this study is a survey using a questionnaire with a Likert scale. The analysis of the data includes the benefits and problems regarding to blended learning. The result of the study indicates some benefits, such as, flexibility and assistance in doing tasks. On the other hand, the problems are internet connection and the preference in learning in a traditional class.

**Keywords:** blended learning, benefits, problems, face-to-face learning, online language learning

### 1 Introduction

Indonesia will face an era of Asian Economic Community, where one of the components thereof is the allowance of skilled labor working in Asian Countries. To get the young generation be ready for this, it is important for them to have specific required skill(s) such as the skill in Information and Communication Technology (ICT).

adfa, p. 1, 2011.

The development of technology itself has been widely utilized in every field, government, health, education, and so on. Moreover, due to its use in education, Partnership for 21<sup>st</sup> century skills has published a framework regarding to 21<sup>st</sup> century learning, which makes students use more technologies to analyze information, collaborate, solve problems, and even make decisions. Therefore, teaching-learning methods nowadays have integrated technology to their activities since it has successfully removed the limitations to access knowledge in learning [10]. In addition, teachers and students should improve their functional and critical thinking skills with the use of information, media, and technology (ICT).

The technology provides the students an environment that let them to deliver their studies in terms of place, time and pace, and the most important thing is, ICT gives more opportunities to the teaching staff to actually communicate with students than just face-to-face [1].

According to Srichanyachon (2014), one of the examples of the integration of ICT in education is the use of LMS (Learning Management System); a software application or web-based technology which has become a powerful tool for conducting an e-learning environment. Srichanyachon has also conducted a study regarding to EFL students' perceptions of using LMS. The result showed that the level of the students' perceptions in general was moderate. There were students who did not agree to the statement that LMS can function as a learning tool.

Hence, the term 'blended learning' has come to surface. It is the combination of traditional learning (face-to-face) with the modern one, using ICT and it aims to provide an effective and efficient learning experience, as students can develop their autonomous learning and at the same time, have enthusiasm when they have face-to-face session [11].

Nevertheless, since blended learning remains to be entirely applied in Indonesian system of education, it can cause a problem, whether the students are interested and can comprehend the materials or not. Therefore, the aim of this study is to find out students' perception on the benefits and problems of blended learning.

The result of the study is hoped to give new perspectives to the education system in Indonesia; to integrate ICT more in the classroom to get students ready for the upcoming era of Asian Economic Community and to develop better ICT system and connection.

## **2 Literature Review**

Blended learning is a combination of face-to-face interaction in the class, i.e., the giving of classroom instruction and e-learning [5][8]. Blended learning also means an opportunity to integrate the use of innovative technology development in e-learning, with the participation and interaction in the traditional environment as in the classroom [14]. Furthermore, Erdem & Kibar (2014) stated that blended learning is one of the ways in creating a more effective learning experience and we can use supporting social media such as Facebook in doing so.

Hilliard (2015) stated the rationale for the application of blended learning in university; since university is a place for forming students to be ready to work in certain workplace and institutions, it needs to be up-to-date with what innovations happening outside. For example, Hilliard added, the global environment in work today has demanded to have skillful employees in technology and problem-solving. Therefore, it is important to embrace blended learning and for the faculty members to develop their skills in teaching online abilities.

There are benefits and problems in having blended learning in the lesson. Based on a study from Napier, Dekhane, & Smith (2012), there are positive aspects of blended learning, such as:

- Flexibility: The students do not have to come to the class every day, so they focus on having their assignments done outside the school when they have time.
- Interaction with professor: Even though the students can learn outside the class, they still need the help from the professor to answer questions they have during completing the task done by e-learning.

- Independent learning: Blended learning has helped the students to develop their own responsibility since there is no instructors keep telling them to finish the task.
- Authenticity: Blended learning also has assisted the students to feel the 'real-world' experience because when doing the task outside the class, there is no one to guide them.
- Learning style: The students have been more understandable of what they are learning.
- Social presence: Blended learning has made the students enjoy the activity more, since they learn new things and meet new people.

Moreover, Napier, Dekhane, & Smith (2012) report about the use of blended learning to assist students to be more engaged in learning since they are prepared enough before coming to the classroom.

A similar study also was also conducted by Zumor, et.al., (2013) which reveals some advantages in utilizing blended learning in education. Students are learning by doing, managing their time easily, especially when dealing with assignments, i.e., they can consult their instructor at anytime, and even having their confidence improving. In addition, according to Zumor, et.al., (2013), students make essential contribution in discussing materials through discussion boards, so their reading and vocabulary competence have developed more.

Based on a study conducted by Isiguzel (2014), blended learning can also improve students' motivation and success. His study was using experimental and control group. The result showed significant improvement of motivation and success in the experimental group. Even though the control one had the increase in those two elements, it could not be the same as the experimental. Isiguzel has also found out that since the learner need to manage their own learning process and materialize learning itself, it means that blended learning has developed students autonomous in learning.

From the staff perspectives, blended learning can give contribution in dealing with large students numbers in a way of organising and managing information [3].

Despite the benefits of blended learning, the studies conducted regarding to this matter also found some problems; culture perspectives, internet connection, students' time management and discipline, and the ability of the teacher or instructor in using ICT tools. Napier, Dekhane, & Smith (2011) stated some challenges the students have when dealing with blended learning; discipline, time management skills, comfort with technology, conflicts with preferred learning style, and investment of time (students do a lot of assignments outside the classroom). Moreover, Mtebe and Raphael (2013) have also found out about the outdated learning resources, unavailability of the instructor during face-to-face session, and technical difficulties.

Blended learning can also create social problems especially related to culture and school system. Especially at the first time it is applied; most of teachers have over workload, imbalance number of computer ratio and students, and difficult access of the technology during classroom [7]. Furthermore, for students who are used to the traditional way of learning (lecture-based classroom), will have to work very hard since blended learning require more discipline, responsibility, and good time management skill [2].

In conclusion, from various burdens caused by blended learning, technical problems in internet connection are mostly discovered. Therefore, those studies have recommended that the school system will fix the technical problem so blended learning can be delivered effectively and efficiently.

### **3 Method of the Study**

This study is conducted to investigate students' perceptions on the benefits and problems of blended learning. The population is a class of employees' study program majoring psychology in the class of English Language 4 which consists of 30 students. Thus, the sample of this study was 14 students participated in filling out the questionnaire. Since firstly initiated as a preliminary study of mini research, a limited number of population did not impede



this study. Nevertheless, the researchers aspire to have more numbers in samples to be involved.

In order to obtain the questionnaire filled in, the online software application was utilized because of its compatibility to be accessed through students' mobile phones. The questionnaire contains of 20 questions of Likert-scale statements which rate on the problems and benefits faced by the students in having blended learning. It has five scales ranging from Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA), and Strongly Disagree (SDA) for each statement. The scale is from 1 to 5. The questionnaire is modified from [13] and [15]. However, the limited time of this research (two months) did not allow for such deep investigation to conduct.

The data collected in this study consisted of quantitative data.

#### 4 Findings

To answer the question of the study, the tabel in this section present the analysis of the result based on students' perception toward blended learning. Since the research focussing in investigating the problems and beenfits faced by the students in using blending learning, the result of the study will only present on both problems and benefits of it.

Table 1. Problems

Statements	SDA	DA	UD	A	SA	Weight Average
Learning English through e-learning is more difficult than learning in a traditional class.	7.14% 1	21.43% 3	14.29% 2	42.86% 6	14.29% 2	3.36
I found difficulties using e-learning because of the	14.29 % 2	35.71% 5	14.29% 2	21.43% 3	14.29% 2	2.86

slow internet access						
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Based on the tabel above, there are two main problems faced by the students in using e-learning. The problem reported in this study believes that learning through e-learning is more difficult than learning in a traditional class (14.29%). The other result shows that the internet connectivity also become the problem in e-learning (14.29%). According to the result above, it can be concluded that there two main problems in dealing with e-learning. The first is because of technical problem and second is the slow internet access in using internet. The problem in applying blended learning will arise if blended learning is applied in a school or region which has unstable or in adequate internet connection. Both of teacher and the students will face difficulties in accessing and using internet connection. The lack of appropriate internet connection will lead into problem in administering the course.

**Table 2.** Benefits

Statements	SDA	DA	UD	A	SA	Weight Average
The use of the internet makes learning English more convenient.	15.38% 2	30.77% 4	7.69% 1	30.77% 4	15.38% 2	3.00
E-learning requires lecturers and students to be more proficient in Information Technology.	7.14% 1	14.2% 2	21.43% 3	35.71% 5	21.43% 3	<b>3.50</b>
E-learning makes it convenient for you to download and upload your classwork and homework files.	7.14% 1	14.29% 2	7.14% 1	50.00% 7	21.43% 3	<b>3.64</b>
I am interested in using e-learning for	21.43% 3	7.14% 1	35.71% 5	28.57% 5	7.14% 1	2.93

an online English class.				4		
E-learning makes it easier for lecturers and students to make communication.	7.14% 1	35.71% 5	14.29% 2	53.71% 5	7.14% 1	3.00
You don't need to go to the library because e-learning helps you find the information you want.	14.29% 2	21.43% 3	28.57% 4	28.57% 4	7.14% 1	2.71
E-learning is useful for learning English.	7.14%	35.71% 5	7.14% 1	35.71% 5	14.29% 2	<b>3.14</b>
Learning English through e-learning is more efficient than learning in a traditional class.	14.29% 2	42.86% 6	28.57% 4	7.14% 1	7.14% 1	2.50
E-learning is more convenient for me than face-to-face learning.	14.29% 2	35.71% 5	21.43% 3	21.43% 3	7.14% 1	2.71
E-learning improves communication between students and lecturers.	21.43% 3	35.71% 5	7.14% 1	28.57% 4	7.14% 1	2.64
E-learning makes teaching and learning more effective; because it integrates all forms of media: print, audio, video, and animation.	14.29% 2	35.71% 5	7.14% 1	21.43% 3	21.43% 3	3.00
E-learning helps me to improve my Eng-	30.77% 4	30.77% 4	7.69% 1	23.08% 1	7.69% 1	2.46

lish skills.				3		
I find e-learning interesting and useful.	14.29% 2	15.38% 2	7.14% 1	50.00% 5	30.77% 4	<b>3.64</b>
I like e-learning I can work according to my own pace.	7.14% 1	14.29% 2	7.14% 1	50.00% 7	21.43% 3	<b>3.64</b>
E-learning helps me to develop knowledge of computer and internet.	7.69% 1	15.38% 2	7.69% 1	38.46% 5	30.77% 4	<b>3.69</b>
I feel more confident when I use English online than when I use it in class.	14.29% 2	28.57% 4	28.57% 4	21.43% 3	7.14% 1	2.79
E-learning helps me to use time effectively.	7.14% 1	21.43% 3	14.29% 2	28.57% 4	28.57% 4	<b>3.50</b>
E-learning gives me access to authentic second language materials.	7.14% 1	35.71% 5	14.29% 2	35.71% 5	7.14% 1	3.00

As shown in the table, seven important benefits were reported. The highest benefits was the development of students' computer and internet skills. Those benefit are also followed by the effective use of the time and flexibility because the students can work in their own pace at anytime and anywhere, i.e., they can use their time effectively. The students also agree that e-learning helps them to do their task because they can easily download and upload their task through online. Moreover, the students give positive responses toward e-learning to learn English, since almost all of the online and electronic tools use English. Therefore, the students can also learn English while operating it.

However, there is a requirement that both students and instructor should have. According to the statement, *E-learning requires lecturers and students to be more proficient in Information Technology*, five learners agree. It means

that, to apply blended learning in the classroom, the institution may hold a proper training according to this matter, so the learning can be more effective.

## **5 Conclusion**

The findings of this preliminary study of mini research have shown the benefits and problems of blended learning which have been utilized in a class of employees' study program majoring psychology in the class of English Language 4 which consists of 30 students.

The benefits of blended learning are the development of students' computer and internet skills by the effective use of the time and flexibility and the assistance to help the students do their tasks. Moreover, the students give positive responses toward e-learning to learn English. These findings are similar with the studies conducted by Napier, Dekhane, & Smith (2012) and Zumor, et.al., (2013).

Nevertheless, the problems found in this study are similar with the findings of Napier, Dekhane, & Smith (2011) and Hewagamage, Premaratne, & Peiris (2007); learning through e-learning is more difficult than learning in a traditional class and the internet connectivity.

Therefore, it is recommended that the institutions utilizing blended learning prepare all elements required, including the readiness of the instructors and the students, the internet connectivity, etc., so the results from blended learning can be more effective.

Since this is a preliminary study, the sampling is not sufficient. Hence, for further research, it is suggested to conduct the similar one with larger sampling.

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## DEVELOPING LEARNING MODEL ON TAXATION BY USING ANIMATED MEDIA TO ENHANCE STUDENTS' COMPREHENSION

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### ABSTRACT

The current demand of learning innovation based on technology has become a fundamental needs on the academic quality assurance system. This is due to the rapid development of information technology which covers various aspects of people's life, including education. Therefore, the teaching and learning using interactive multimedia has been taken into consideration by the lecturers and students to be implemented in the classroom.

This research is motivated by the phenomenon of student learning outcomes by 50% -60% received grades C and D (low criteria) and no one gain an A. The result of observation made on learning media that has been used in taxation class shows that the lecturers only utilised textbook and powerpoint presentation as teaching media. As a result, the students' response indicate that they have less interest in the subject. Having said that, the subject of taxation requires a comprehensive understanding and real like illustration of the tax regulation and their application to the administration of tax obligation for taxpayers. Thus, this underline the objective of conducting the research.

The research objective is to develop learning media that is a software-based, interactive, animated media for taxation subject. Instructional media development methods of taxation in this study refers to the 4-D models that Define Design, Develop and Disseminate (Thiagarajan, et.al, 1974). The target of study in year 1, the development of instructional media only reached the stage of Design with animated media as the output of the second draft. The result indicated the development of media design by using *Macromedia Flash 8* application. Based on the a controlled experiment, the teaching media generated in this study, in terms of visual interface and menu, evidently can enhance students motivation to learn independently.

**Keywords:** Learning, Taxation, Animated Multimedia, Macromedia Flash 8



## INTRODUCTION

Subject of taxation is one of the basic and compulsory subjects in the Accounting department, both in Diploma three (D3) and Strata one (S1) program in Accounting. The subject is one of the series of tax and is a subject of prerequisite course that begin with tax law, tax, tax accounting and tax management (Lab. Tax for the Diploma three (D3) program), so that the failure in this course will result in extended study period. As for the needs of labor market, taxation material is needed because all taxation carried out by each entity will always be associated with taxes. The subject of taxation has a fairly high level of difficulty, as indicated by the leaning achievement class of 2011, which is less satisfactory, with the acquisition of the C and D reach 50-60% and none gain an A.

Based on observation, media used by the lectures in delivering the subject is PowerPoint. It is considered less attractive to the students. Taxation, according to RPS material consists of PPn, PPh (Ps 21/26, 22,23,24 and Ps 4 (2)), Local tax (PBB and BPHTB), and stamp duty. The content subject of PPh has higher level of difficulty to be understood, due to the many clauses in tax law and regulatory changes that should be known as well as understanding on the concept and the current taxation situation. For example, article 4 (2) states that income, as in prizes draws and awards are subject to tax; For instance, article 23(1) on income, as in awards, bonuses and the like in addition to the already taxed referred to in article 21 paragraph (1) letter (e) will be taxed by the party obligated to pay 15% from the gross amount.

Teaching and learning constrain and problems in taxation course in Accounting department at Economic Faculty of Unesa experienced directly by the researchers. This is supported by observation during the teaching and learning process; students have trouble when an activity should be subject to income tax 21/26,22,23,24 and ps 4(2). In regards to students' understanding towards the material, the researcher note that they are having problem in the basic knowledge of taxation which resulted in the students' inability to do practice test correctly. Therefore, there should be an effort to create real life context in the teaching and learning to promote active, interactive and effective learning atmosphere. This could be done by maximizing the existing facilities and

infrastructure. Mudjito (1994: 10) mentioned that the way of presenting learning materials should utilize various support facilities, such as libraries, realia and the learning environment. The media that have been developed by experts to support the teaching and learning in taxation course consist of PowerPoint and illustrated stories.

The study result by Collins et al (2007) in Asyhar (2011) showed that the use of audio and video media influence on students' learning outcomes. Meanwhile, Remus et al (2008) in Asyhar (2011) also showed that it is proven the influence of media on the students' decision making. It is confirmed that text as media is more effective than audio, while the animation does not give a different effect on the overall learning outcomes. The types of media also provide different effects to the learners. Felton et al (2001) in Asyhar (2011) reported that the use of audiovisual media (video) on students of health education is more effective in comparison to text as visual media or no media at all. It is seen from the test result achieved by the experimental class taught by using video gain much better than control class.

Based on the result of several studies suggest that the use of media influence on the students learning outcomes. However, some research results are still conflicting related on the media being used. Some argue that the audio and video impacts on students' learning outcomes, while there is also evidence that text is more effective than audio-visual media.

Comprehension according to Bloom (1984: 17-19) is included in the category of cognitive classification. The classification was arranged in hierarchical starting from the lowest level to the highest one, namely: knowledge, comprehension, application, analysis, synthesis and evaluation. A slightly different definition on the notion of comprehension put forward by Leahey and Harris (1997: 220-222), stated that an understanding does not only mean the stimulus alone, but also something that that arises from the interaction between the stimulus and active thinking from one's memory. Further, it is said that understanding involves a process that is both top-down and bottom up. To sum, it is said that comprehension is said to be a multifaceted process.

Learning theories that support the understanding aspect is a cognitive learning theory by Bruner, who declared that man is an active agent to process information (input) it received to gain understanding. Bruner (1960: 48-52) stated his view on learning as *instrumental conceptualism*, centered on two characteristics of the process are: (a)

Person knowledge on the nature of reality, based on a model built; (b) the model was first adopted from one's culture, and then adapted to the individual's needs. Within the individual, a process of preparing hypothetical perceptual and turn it in the environment itself.

Assessing understanding of learning materials need to be measure through tests and observation. According to Gagne (1979: 149), there are five abilities that one should acquire as a result from learning, namely intellectual, cognitive strategies, verbal information, motoric skill and attitudes. And these qualities enable him to do something.

The issues arises now are on how to put taxation learning activity that can encourage students to easily understand the tax regulation as the basis for calculating taxes owed. For example, calculating on 21 employees income tax, credit tax, income tax installment in article 21. To resolve that matter, in this study, the authors wanted to develop teaching and learning media for tax subject on animated media, which is an expansion from a storyboard media. The use of animated media are also expected to support students' competence in taxation subject, as well as meet the standard competence of KKNI for diploma three and strata one level. Furthermore, the diploma three graduates is expected to be able to cope with work which has a broad scope of taxation, choose the appropriate method from the various method that have or have not been standardized by analyzing the data, and be able to demonstrate excellence performance. Meanwhile, for strata one graduate, is expected that they are able to apply taxation expertise, use science and technology skill in the problem solving and adapt to the situation at hand. The purpose of the research is to develop learning media for taxation subject in animation, comprising: 1) learning materials on Income Tax (VAT), which consist of the Act, minister of finance decree, minister of finance regulation and directorate general regulation which then translated into learning materials of theory, analysis and design, simulation implementation, 2) an illustration on the actual situation of transaction is subject to income tax, 3) case studies following problem solving method, 4) guidelines and implementation strategies on learning during the teaching and learning process done independently.

## **RESEARCH METHOD**

This study is a development type of research that focused on the interactive multimedia-based learning media (using Flash) in the teaching and learning activity following the 4-D learning device model.

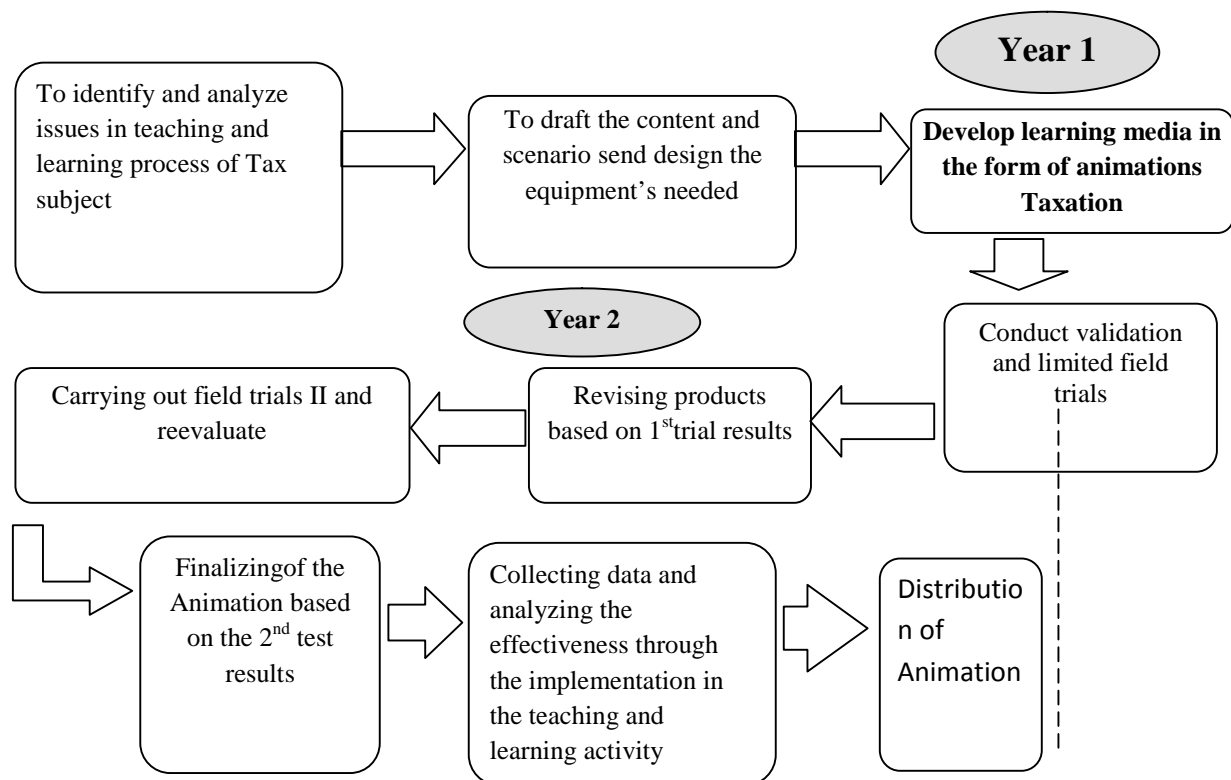
The subject of the study was a student of S1 and D3, to take part in developing the learning software. Furthermore, they are asked to give input on the CD witnessed and give response on learning that implementing IT systems. Other research subjects are two lecturers were asked to watch an animated instructional media and to review the lesson plan made by the the researcher and one of the experts in education, as well as to examine the devices, instruments and media produced.

The overall study was conducted over eight months starting from early May 2015 until early December 2015. During that time, the equipments and facilities are provided, together with story board writing instructional media, creating animation draft 1, the manufacture of the draft guide module 1, review of animation draft 1 by the media experts, study guide module by education experts, revised animations and modules developed into a second draft. And in early October to early November 2015, the test on to animation and modules developed were developed. Overall, the test was done in D3 and S1 program, at Accounting Department in the Faculty of Economics, Unesa.

### Flowchart of Research

To facilitate a systematic understanding of the stages of development of the overall procedure for 2 years, a flow chart is presented as follows:

**Stages on Development Procedure**



(1) **The first stage** survey and development plan is designed through workshop, brainstorming activity and focus group discussion; (2) **The second phase**, research and development was developed as well as the quasi experimental reseach with pre-post test group only design. Meanwhile, for synchronizing the curriculum which relevant, esentials topics were chosen, merging topics to become competence and sub competence. Next, preparing for instructional media for the taxation subject which in line with the 4 D model, which includes define, design, developed and disseminate (Thiagarajan, Semmel, dan Semmel, 1974).

Basically ‘define phase’ is the phase of determining the format and substance of the product to be prepared (life skills profile, essential topics, teaching materials, preparation of media). In this case, it is done through five sub phases, i.e, analysis of the rear-face (front end analysis), analysis of cognitive development of learners

(leaneranalysis) and analysis of the concept (conceptanalysis). In addition, analysis of the rear face is a literature study and a survey carried out field study. The literature study will be reviewing curriculum used at Accounting Department in the faculty of economics, Unesa for the subject of taxation.

Analysis of learners used to assess their level of cognitive development, so that it can be used as a basis to examine the ability of learners. Analysis of the concept is applied to analyze the results of the curriculum review. To ensure face and content validity, both are reviewed in focus group discussion and continued with expert analysis. Expert involved in the discussion are focused and expert judgment are experts in various fields. Thus, at the define stage; the aim is to produce the outline of research product that have gone through series of review.

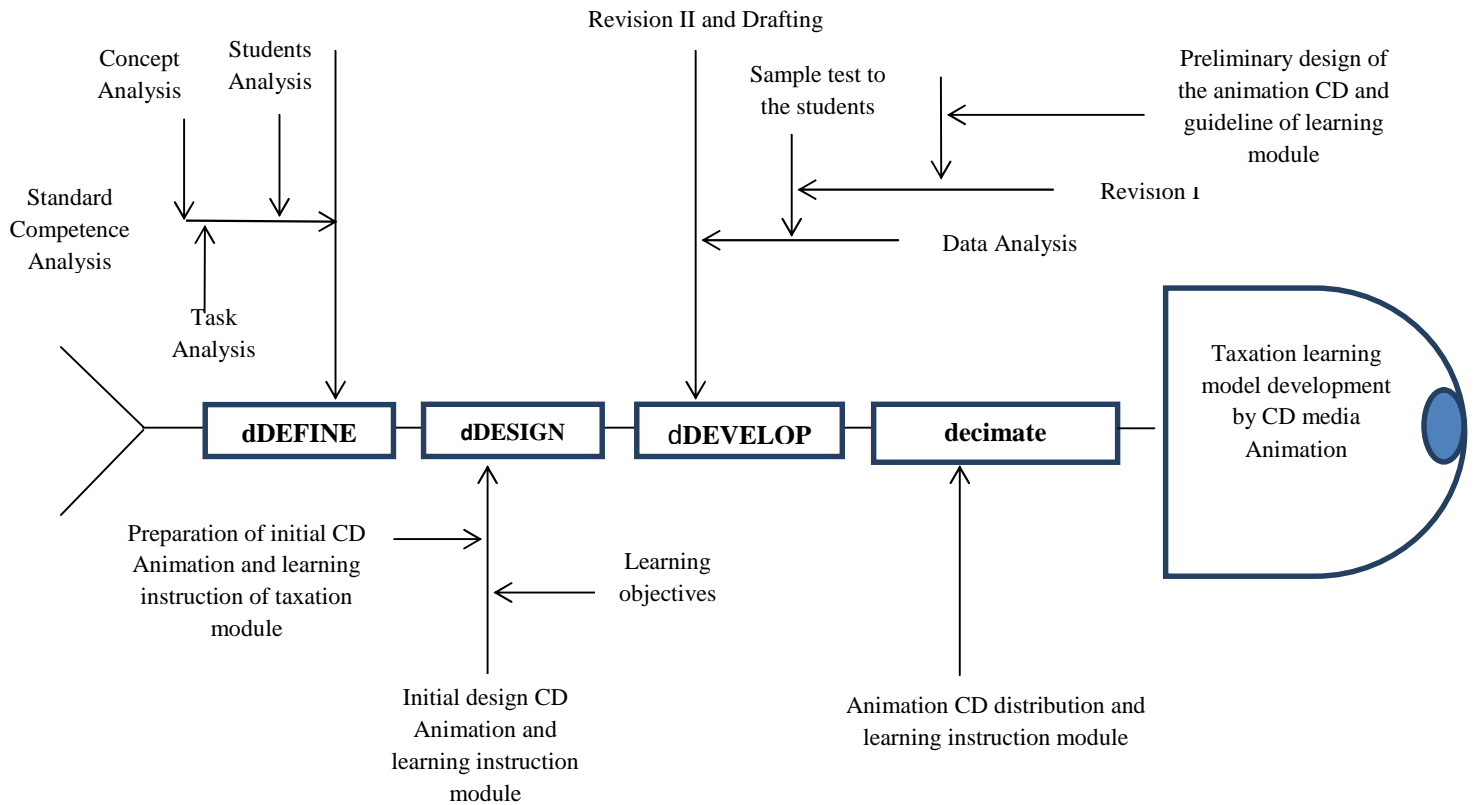
Based on the basic framework is then forwarded to the develop stage, namely the drafting the research result and expert review. The expert review is meant to gain insight about the researchers ideas, which was developed, based on the existing one. In addition, this step is intended to obtain validation of: (a) the truth of concepts, (b) learning objectives, (c) Grammatical Accuracy, (d) quality of the images and other illustrations, (e) the relevance of questions / tasks for the purpose of learning and (f) the quality of the layout according to the indicators used in the review. Having said that, the experts involved in these activities were from taxation, education and media. To sum, manuscript was revised based on input from the research results and the results of this validation.

In the third stage, empirical study was conducted. At this stage, the research product is close to final. However, to obtain empirical evidence that the outcome of this research is feasible to use, then the majority of the research be tested empirically in limited audience, that is the Accounting Department of Unesa. The final result will be used as part of recommendation in the dissemination stage.

The empirical study was conducted by arranging the pre-posted group only by selecting a students group, preferably those who are programming the subject being studied. The investigation will be adapted to the existing schedule of the academic calendar in the accounting department, Unesa. Further after the trial, the data analysis will be used for

consideration to generate animations and module, which will be distributed at the faculty of Economic Unesa.

As schematically, CD media development phase of animation and learning instruction module by applying IT to the scheme described below



Gambar 1. The Fishbone developmental model with stages of learning steps in Tax using 4D model IT system.

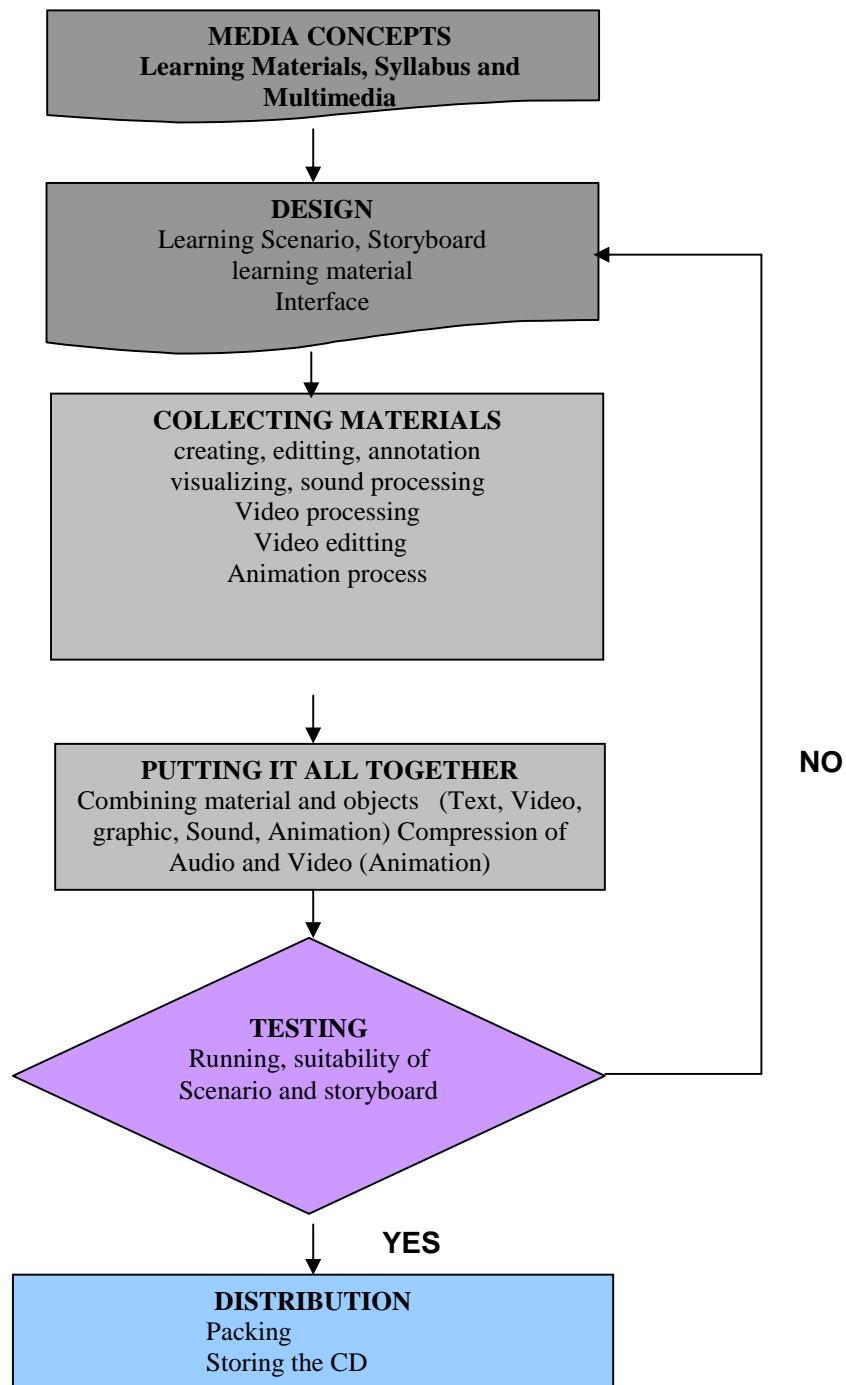


Figure 2. Phase Design Media Animation

The animated learning media on the taxation subject based on realistic contextual will be analyzed by data analysis technique using descriptive statistics to measure its effectiveness. For this stage, the source data to be processed is the results of the quantitative data obtained taken from the closed questionnaire. Open questionnaire was also used to obtain qualitative data that will provide an overview of suggestions or



advice to deficiencies related animations media content, appearance, language and audiovisual can be improved through revision

Quantitative data obtained from the results of validation (content experts and media experts) as well as the responses / opinions of students who later analyzed by percentage. The percentage obtained from the validation sheet by content expert and media expert based on Likert Scale score calculation in the following table:

Table 1

**Taxation Instructional Materials Assessment Scale**

Assessment	Score
Very Good	5
Good	4
Medium	3
Average	2
No good	1

Source :Riduwan (2012)

From the results of the questionnaire were then analyzed by means of:

$$K = \frac{F}{N \times 1 \times R} \times 100\%$$

Description :

- K = Percentage of value criteria
- F = Overall respondents response
- N = the highest scores in the questionnaire
- R = Number of respondents

The questionnaire then was analysed to derive conclusion on the feasibility of media and interactive multimedia (flash) based learning materials using a Likert scale with the following criteria:

Table 2

Score Interpretation Criteria on Taxation Subjects

Assessment	Criteria Interpretation
81% - 100%	Very decent
61% - 80%	Worthy
41% - 60%	Pretty decent
21% - 40%	Not feasible
0% - 20%	Very unfit

Source: Riduwan (2012)

While the enclosed questionnaire on student responses were statistically analyzed by quantitative descriptive, the percentage is obtained by Guttman scale calculations with the following details:

Table 3

Student Response Assessment Criteria

Answer	Score
Yes	1
No	0

Source: Radian (2012)

The result of the questionnaire were then analyzed by using calculation formula with Likert Scale as follows :

$$K = \frac{F}{N \times 1 \times R} \times 100\%$$

Keterangan :

- K = Percentage of value criteria
- F = Overall respondents answers
- N = the highest scores in the questionnaire
- R = Number of respondents

From the analysis, further it can be concluded the feasibility of taxation instructional material and media using the Guttman scale with students' response in the following table :

Table 4

**Student Response Criteria Score Interpretation**

Assessment	Interpretation Criteria
81% - 100%	Very decent
61% - 80%	Decent
41% - 60%	Pretty Decent
21% - 40%	Not feasible
0% - 20%	Very unfit

Source: Radian (2012)

From the analysis of the questionnaire on students' response, it can be concluded that the learning material which consist of material and instructional media of taxation has been considered appropriate to use when the interpretation score is 61%

**RESULTS AND DISCUSSION****An Overview of Research Object**

Diploma Three (D3) Accounting study program is the first study program in Accounting Department. By 2015, this program has produced four graduates, the class of 2008, 2009, 2010 and 2011. For now, this program has classof 2012, 2013 and 2014, with one level of each class with a total number of students as many as 150 students. The program is aiming at producing expert who can manage accounting in the company (business entity), services, trade and manufacturing of large-scale or go public company in accordance with the standards and principle generally accepted and relevant in accounting. To support these competencies, one of the compulsory subjects is taxation. The taxation course consists of Introduction of tax, Tax, Tax accounting and Taxation Lab.

In accordance with Permendikbud Year 73 Year 2013 on the Implementation of the Indonesian National Qualifications Framework (KKNI) Field of Higher Education, diploma courses are included in level 5. Referring to the formulation of learning outcomes based study program diploma KKNI level 5, then a graduate diploma is expected to finish the job with a broad scale with the appropriate selection of methods in order to formulate a comprehensive settlement of the problem with full responsibility. Based on the elaboration of learning outcome in level 5, one of the

expected competencies a graduate to possess is to be skillful in managing tax and tax report as well as tax regulation.

Mastery in the field of taxation requires a deep understanding of the tax regulations. Taxation is a rule based, meaning that all implementing taxation ranging from deposits to reporting in detail should refer to the legislation, and the taxpayer is not allowed to make his own adjustment to an event or circumstance that may be subject to tax. Tax laws can be divided into formal tax rules and substance tax rules. Formal tax rules contain forms or procedures for manifest the substantive law to become a reality. Formal tax law includes: Procedures for Determination of Debt Tax, Rights of the tax authorities to supervise the taxpayer on the circumstances, actions, and events that could give rise to tax debts, liabilities Taxpayer, for example, an accounting or recording the rights of the taxpayer objections and appeals. The example of formal tax law is Law of General Provisions and Tax Procedures or UU KUP. While the substantive tax law regulate the procedure for compliance with the tax laws of material and load norms on circumstances deeds, legal events which are taxed (taxable income), who is taxable (subject to tax), how much taxes imposed, everything that arises and the abolishment of the tax debt, and the legal relationship between the government and the taxpayer. Examples of substantive tax law are the law of income tax (Income Tax Act).

Ability calculates and report tax on tax law requires mastery of the formal and material. Students are not only required to understand the rules of how to meet the tax administration, but also is required to calculate the amount of tax due. Students are not only required to understand the rules of how to meet the tax administration, but also is required to calculate the amount of tax due. Learning goals of understanding of tax laws and the practice of the calculation of tax requires a different medium, the topic of understanding tax law can be delivered through power point, but during the learning process, the calculation of tax requires a media that is able to attract students attention to actively involve in the counting process and reporting of tax payable, which we call learning media animation.

## **Analysis of Development Results**

Development of animation media which are conducted in this study refers to the 4D model developed by Triagarajan. Steps being taken are as follows:

### **Defining Phase**

At this stage, needs analysis, analysis of standard competence, and basic competence in the applicable curriculum. Furthermore, the analysis is also on the student's concept and tasks in order to obtain the formulation of learning objectives. At this stage, illustration on important concept of CD animation was obtained, and it will be the basis of making storyboard and the content of the module to the application of IT learning instruction.

### **Analysis of the front end**

Front-end analysis is the process of identifying or bring the basic problems that occur in the use of instructional media in teaching and learning activities. The purpose of this analysis is to identify learning objectives, indicators and content of media animation. At this stage, the analysis will be done on the curriculum, the subject courses, syllabus and the subject of Taxation.

Curriculum currently recommended is KKNi based curriculum. The KKNi curriculum is a framework that hat can reconcile the competence and qualifications, equalize, and integrate the fields of education and job training and work experience in order to award the work in accordance with the recognition of the competence of the structure of employment in various sectors. Here is the formulation of learning outcomes Diploma courses Faculty of Economics Unesa based KKNi level 5.

Based on the formulation of curriculum, one of the competencies expected to graduate of diploma is a mastery of tax regulation so as to calculate and report the tax. For competencies capable of calculating and reporting of tax, then the student must take the course of taxation, Tax Accounting and Tax Practice.

Clumps of taxation for D3 Accounting courses are starting from introductory courses taxation, taxation, tax accounting and finally Taxation lab. In the introduction of taxation students are introduced to the provisions of general taxation and the implementation of tax obligations in accordance with tax laws and rules of procedure.

### **Analysis of students**

Analysis of the students is performed on the define stage which aim to find out the students characteristic about the cognitive abilities. Cognitive is one realm in the taxonomy of education. In general cognitive defined intellectual potential consists of the following phases: knowledge (knowledge), understanding (comprehension), application (user application), analysis (analysis), synthesis (synthesis), evaluation (evaluation). Cognitive means issues related to the ability to develop the ability of rational (mind). Cognitive theory emphasizes how a process or an attempt to optimize the ability of rational aspects that are owned by others. Jean Piaget (1896-1980) an expert in the psychology from Switzerland said, "Learning should be adapted to the cognitive developmental stages through which students". Piaget dividing it into four stages: sensorimotor stage (1.5 - 2 months), preoperational stage (3- 7 years), concrete operational stage (8-13 years), and the formal operational stage (14 years or more).

### **Design Phase**

This phase is to design animated CD media components and modules based taxation learning instructions using adobe flash application program. At this stage the aim is to produce a preliminary design and animation CD media module, and then tested or run in the computer to determine whether the results are as expected or not, that will produce draft I.

#### **a. Preparation of the initial design of the device**

To produce a first draft of which is a preliminary sketch subjects studied Animation CD taxation Income Tax Article 21, the measures to be taken include:

1. Develop Program Flow Chart (Flowchart Program), aims to make the design process of systematically arranged according to order of appearance, visual appearance and narrative description, and evaluation.
2. Script Storyboard

Storyboard can be said also as a visual script that will be used as the outline of a project, displayed shot by shot is commonly referred to as scene. Or in other words, the idea of storyboard visualization applications to be built, so as to provide an overview of the application that will be generated. One advantage of using storyboards is that it can make the user to change the storyline capable of triggering a reaction or interest in

deeper. Reflection quickly became a result of the storyboard chronological arrangement to build curiosity and interest. Some of the reasons why using a storyboard:

- 1.1. Storyboard must be made before the team makes the animation
- 1.2. Storyboard used to remind animator
- 1.3. Storyboard made for easy reading stories.

Here is a picture of the flow chart storyboard script:

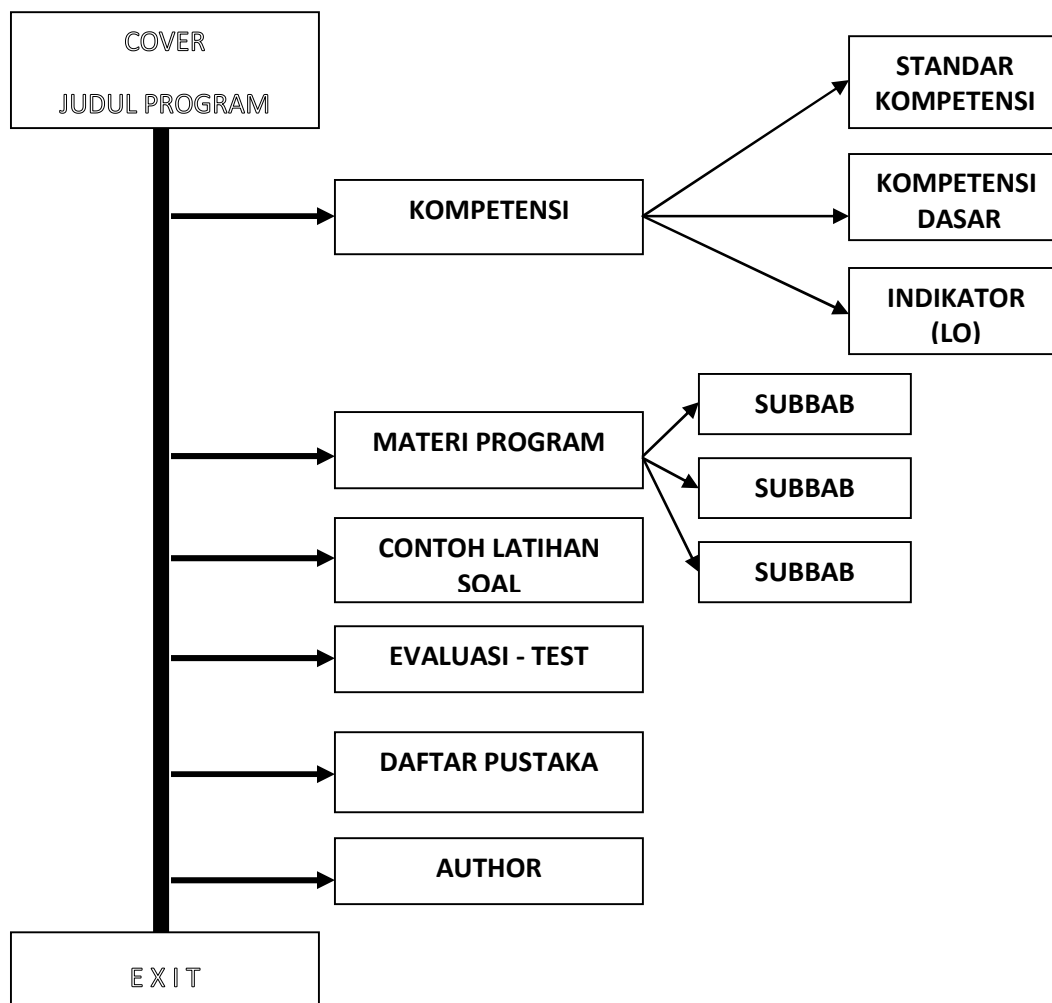


Figure 3. Flowchart Script Storyboard

b. Draft Revised Draft I and Resistant Design

Stages of the initial design of instructional media subjects of taxation using animation model contains material income tax article 21, produce a preliminary design the instructional media consisting of menu display: Cover, where the display design stage or the outer skin is displayed with format writings, drawings and attractive colors that draw to interest the reader to continue opening the following pages. Just by looking at the front cover, the student will be taken to imagine the process of the administration of taxation, that is starting from the calculation of tax payable, the withholding stage, the stage of deposit, until the end in the reporting stage of income tax article 21.



Figure 4. Cover (Draft I) (Revised Draft I)

The cover of the next page is the main menu which contains parts of another menu with a color display and a design that is almost the same, only on a revised draft of the first page of the main menu together with a cover page, considering on the page, the main menu is replaced with an animated video of "What is tax" the goal for the students to be motivated and interested in studying taxation. Below is a picture of the cover of the main menu:



Figure 5. Cover the Main Menu (Draft I) (Revised Draft I)



Menu Competence, students who use the media learned of taxation is faced with a menu option, in lieu of printed teaching materials such as textbooks or reference it at the beginning of learning a course should start by knowing the competence to be achieved from the study of this tax subject. Students clicking competency menu that contains three (3) sub menu competencies are: Competency Standards, Basic Competence, and Indicators. The contents of the standard of competence, basic competence, and the indicator is the result of the define phase, which is obtained from a merger between curriculum subjects of taxation for students who run for this (existing conditions) adapted to curriculum design based on students KKNi in category 5 level.

The content menu is the core of the learning subjects of this tax, the accuracy of the content of the material will determine the success of the learning outcomes set out in the students competence and the learning objectives. There are three sections of material prepared in the course of income tax article 21, section one contains material about student knowledge will be the basis of the tax laws, the second section contain material about the concepts of income tax article 21, and the third section, a subject that is how students perform tax administration Income tax payable on Art 21. The practice menu is a continuation of the learning core subjects of this tax, the success of understanding the content of the material by the students will be manifested in study case material which already contained the answer, students are expected to be able to incorporate knowledge of tax laws related to tax calculations technique especially tax income tax article 21. Some examples of cases as practice materials will be provided to increase the understanding in a way that is attractive and easy.

Evaluation menu, at the final stage of this learning the student will be given an evaluation in the form of a test about income tax article 21 in accordance with the content that has been described previously. This is to test the student's understanding, the success of understanding the content of the material will be realized in the form of substance about the case that the material has been given on the previous page in the teaching materials and practice. The evaluation question is about case study, multiple choice questions, and open-ended question. The bibliography is a reference, mainly the one that relate to the income tax article 21. It is expected that the student can acquire these references as a complete source of knowledge. Author menu, is the last page view animation media contains drafting team.

c. Results and Discussion Data

The first examined data on animated learning media for taxation taken from Income tax article 21, derived from material experts, Mr. Bayu Sarjono, SE., Ak., M.Si. He holds Tax Consultants Certificate or *Bertifikat Konsultan Pajak*(BKP) who is the owner of the Office of Tax Consultants (CTF) Bayu Sarjono in Surabaya. In addition to his profession as a tax consultant, he is also a lecturer in STIE Perbanas Surabaya teaching Taxation subject. The data reviewed by the substance expert is obtained from the questionnaire with open validation. The following are the results of the data collection taken from content validator response on the animated learning media for Income tax article 21 subjects developed.

Table 4.1.

Advice or input from the Content Expert

No.	Suggestions or Feedback
1	In terms of writing material, there are some typo, the font size is too small, the display settings for content is too dense for each slide
2	The content of Income Tax Article 21 can be adjusted to the new rules PER-32 / PJ / 2015 and PMK-122 / PMK.10 / 2015
3	Evidence on SSP for code of the tax account in accordance with Income tax Article 21
4	Form annual SPT WP OP is better to use the 1770S and or 1770 SS
5	Add annual SPT OP reporting the use of e-filling
6	Proof of withholding income tax Article 21 in the form 1721A1 and 1721A2

Source: processed data (2015)

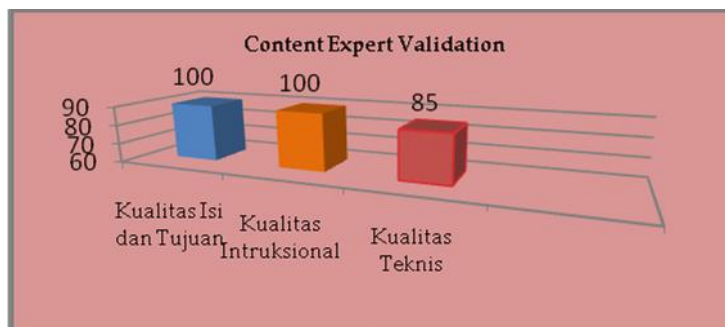
While the first data reviewed by the leaning media expert, Dr. Luqman Hakim, S.Pd.,M.SA, who is permanant lecturer Sedangkan data telaah ke 1 oleh ahli media pembelajaran diperoleh dari Bapak Dr. Luqman Hakim, S.Pd.,M.SA, who is a permanent lecturer in the Department of Economic Education in Accounting and Economics Graduate S2 lecturer at the State University of Surabaya. The media experts examine the data obtained from the questionnaire filling open validation. Here are presented the results of data collection on the media validator responses on animated instructional media for learning the Income tax article 21 developed.

**Table 4.2.**  
**Advice or input from the Expert Media**

No.	Suggestions or Feedback
1	The learning media is more suitable for use as a medium of learning on an individual basis; if it is for classical then improvement is needed.
2	Presentation of introduction section is necessary to emphasize the important points to make it easier to learn to understand
3	Interactive self-learners find material / things that support the understanding has not been evidence: the legal basis of income tax 21 just mentioned, but there is no legislation / regulation details.
4	Item analysis should be conducted to evaluate practice test to ensure the quality
5	Variations in color display needs to be sharpened.

Based on the tabulation of data obtained ratings with three (3) criteria of content experts, namely, 1) criteria related to the quality of the content and purpose of the five aspects of assessment, namely: accuracy, interests, completeness, balance, and suitability result the percentage of votes that is equal to 100% ; 2) criteria related to the quality of instructional with four aspects of assessment, namely: providing learning opportunities, providing support for learning, motivation quality, and flexibility instruksionalnya result the percentage of votes that is equal to 100%; and 3) criteria relating to the technical quality of the four aspects of the assessment are: readability, ease of use, quality of the display / show, and quality management of the programs result the percentage of votes that is equal to 85%. Based on the assessment obtained by the average percentage of the feasibility of animation media developed tax is at 95%, so it can be concluded that the feasibility of the media material is categorized as "Very Decent". Here is a diagram of the validation results matter experts:

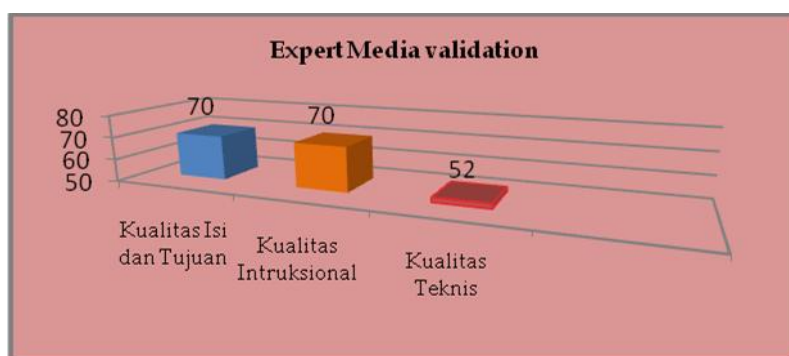
**Diagram 4.1**  
**Content Expert Validation**



Source: Processed Data (2015)

Based on the tabulation of data, it is obtained ratings with three (3) criteria of media experts, namely: 1) criteria related to the quality of the content and purpose of the five (5) aspects of assessment, namely: accuracy, interests, completeness, balance, and the suitability of the results obtained percentage of assessment, that is by 70%; 2) criteria related to the quality of instructional with four (4) aspects of assessment, namely: providing learning opportunities, providing support for learning, motivation quality, and instructional flexibility taken the percentage of votes that is equal to 70%; and 3) criteria related to technical quality with four (4) aspects of the assessment are: readability, ease of use, quality of the display / show, and quality management of the programs, the result of the percentage of votes is equal to 52%. Based on the assessment obtained by the average percentage of the feasibility of animation media developed tax is 64%, so that it can be concluded that the feasibility of the content is categorized as "Pretty Decent". Here is a diagram of a media expert validation results :

**Diagram 4.2**  
**Expert Media Validation**



Source: Processed Data (2015)

Based on the assessment of the student responses obtained an average percentage of the feasibility of animation media developed on taxation subject amounted to 90.5%, so it can be concluded that the feasibility of media materials is categorized as "Very Decent". Random sampling to students are also providing some comments on media animation developed. Student comments include the following:

**Table.4.6**  
**Students Evaluation Result**

No.	General Comment
1.	The presentation of the animation is too fast so that I couldnt catch up with the page. Learning with interactive multimedia media I think this is very interesting and not boring. But for chapter on filling his e-filling, the writing is very small and fast to move from one page to the next page. For music, it is too mellow music and make me sleepy.
2.	The media is considerably potential to stimulate my interest in studying the mechanism of taxation, particularly income tax article 21. As for suggestions, sometimes there are students who do not have the latest version of Adobe Flash software so it becomes a little constrained.
3.	The media is very easy to understand because there are animations, images, elements of color, video in understanding the material, but when entering the menu pay video that aired seemed unfinished and when it wanted to test the ability of understanding the material opens a menu test computer must be online so that when the computer is not on line, it can not assess the students' mastery

Source: processed data (2015)

At the final stages of design, it is obtained draft 1 and Revised Draft 1. And after limited testing and validation by content and media expert, which will then proceed to the next stage, that is the development stage to be explored further by media and content experts to get revisions or improvement of Taxation's media animations, is still due to a shortage.

## CONCLUSION

Based on the problems in the background and the data analysis, the development of animation media-based learning Interactive Multimedia (Flash) in Subjects of Taxation, the results are as follows: Development of learning media produces **a software as a product on animated learning Media on Taxation subject using Learning Interactive Multimedia (Flash)**. Media development using 4-D models namely define

Design, Develop, and Disseminate. In the year 1 experiment, the development of instructional media only reached the stage of Design with the output of animated media to the second draft. Based on the results of expert evaluation of substance or content and media experts, animated learning media on taxation subject based Interactive Multimedia (Flash) in terms of content, presentation display, ease, and quality management of the program is fit to be use as a medium of learning. Based on students' responses with random sampling, instructional animations media on taxation subject based Interactive Multimedia (Flash) is positive with a decent criteria.

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# Developing Update Portfolio as Authentic Assessment in Teaching Speaking for University Students: A Challenge to be Trending Lecturers

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## ABSTRACT

In competing the quality, process and result of learning should be well defined as the real competence that the university students must have. As the educator, a lecturer should also in line with the progress of the IT development. Teaching speaking at university does not stop the creativity to conduct a research. The writer is firstly inspired to develop an update learning design, he then develops the update portfolio as the students' works into authentic assessment. In sharpening the students' speaking skill, he designs the students' presentations using various materials, topics, and media. Those works are then validated and tested to be more applicable to teach other levels of speaking classes. The result is also tested in case of its effectiveness compared with the students who do not use variety of learning instruments. The product of this research and development is an update portfolio of students' works as their evidences in mastering speaking. In a nutshell, this product can be useful as the report and reflection to create betterment in further teaching and learning process. Therefore, it is expected to use the model of an update portfolio to report the teaching activities as the lecturer. It also makes the lecturer is more creative in designing the lecture and developing the education system to more qualified and meaningful.

**Key Words:** Update portfolio, Authentic Assessment, Speaking, R & D.

## Introduction

Teaching speaking to the university students who are also teacher candidates is a challenge as the lecturer. To be a smart lecturer is a must nowadays. It is because a lecturer should be able to see the recent trends to involve the students' background knowledge to the betterment. It influences the writer to design what he teaches in English education program at STKIP PGRI Blitar. In the fifth semester, he designs the semester learning process based on the update information becoming trends. The reason of using the recent trends is to attract the students' interest in learning Advanced Speaking meanwhile the students' habits are now like updating, traveling, or having culinary. The lecturer relates the students' habits and the recent issues to have interesting learning to the students.

In this article, the writer finds the results of preliminary study that the students should be assessed both the learning process and learning achievement. The learning achievement is shown by the scores and grade that the students get in the final after being tested in the end of the semester. Meanwhile, the learning process so long is not documented to show the real competences of the students during learning process. Chen (2006) found that the portfolios he used in EFL classroom in



Taiwan are the dynamic devices to facilitate learning and ownership development. Nevertheless, confusion and doubt emerged and lingered during its implementation process, and the development of portfolio pedagogy was constantly inhibited by the prevailing understanding of assessment purpose and procedures in Taiwan. In this case, the portfolio is intended to develop to record the students' works into portfolio that functions as the record of learning process in Advanced Speaking.

The development of this portfolio is based on the update issues in every meeting the Advanced Speaking is held. To develop it, the writer formulates the research problem, namely; how is update portfolio as the record of learning process of Advanced Speaking for University students developed validly, practically, and effectively. The objective of this research and development is to develop the update portfolio as the record of learning process of Advanced Speaking for University students validly, practically, and effectively. With the expectation to the learning progress, the result of developing this update portfolio is to be able to reflect what the students have done in a semester and direct them into self-correction to further stages of learning process.

### **Update Portfolio as Authentic Assessment of Speaking**

Update portfolio meant in this article reports the students' learning activities and results as the evidences in learning process. Update portfolio means also the portfolio based on the term the lecturer teaches the students and record the teaching result. This portfolio is firstly inspired by Chen (2006) and Helmbold, et. al (1998) who also use portfolios as the assessment. The portfolio developed by the writer is the traditional one in form of book which can be downloaded and read by the students to access this portfolio. Hembold, et.al (1998) states that in his research the online portfolio can challenge the lecturers to be always active and developed time by time. Moreover, Chen (2006) adds that the portfolio is effective to assess the students' learning tasks so that the learning is reflective to betterment process both the lecturers and the students. Sumardiono (2015a) has proven the reflective learning model he applies in Psycholinguistics classroom is more effective when the students can reflect what they have done with the score and achievement they get in the end of learning process to have a betterment view.

The update portfolio here records the students' tasks. Generally, speaking class only requires the spoken form of test. In Advanced Speaking, the lecturer designs the teaching process into integrated speaking skill. The students in university levels as the adult learners should develop their speaking skills like, questioning, answering, lobbying, arguing, debating, retelling, persuading, delivering speech, promoting, presenting, negotiating, etc. Those developmental spoken skills should be based on the reality, evidence, data, statistics, observation results, interview results,

reviews, self experiences, etc so that what the students tell or retell in speaking class is based on the truthfulness which they can be responsible upon it. It is important to develop this skill since the students are necessary to have those developmental spoken skills to use in the work fields after graduating from the college. The lecturer then uses those necessities to design the tasks based on the students' needs to develop their speaking skill.

## **Research Design**

This study employs research and development design. Bord & Gall (2003) defines that an educational research and development (R & D) is a process used to develop and validate educational production. With the definition, Latief (2012) adds that conducting R & D is based on the problems arising in the classroom related to the educational products. Sugiyono (2012) also empowers that the function of conducting R & D is to review the classroom cases to develop the educational products and disseminate them.

This study uses R & D model developed by Thiagarajan, et.al (1974). The model is 4D model consisting defining step, designing step, developing step, and disseminating step. This study is conducted in the English Education Department at STKIP PGRI Blitar in Advanced Speaking. The testings are conducted in two speaking classes which the writer teaches. The time is in the fifth semester in 2015/2016 academic year. This study adapts 4D model since this article only elucidates the three process of define, design, and develop. Meanwhile, the dissemination is not conducted for the limited time that the lecturer has to disseminate the product.

Figure 1 below explains the steps of conducting R & D using 4D model developed by Thiagarajan, et.al (1974) with necessary adaptation to this study. The research instruments developed in this study include the validation sheets to the expert appraisal, observation sheet of practicality of the update portfolio, and spoken test to the students with inter-rater technique to assess the students in investigating effectiveness of the update portfolio. Those research instruments are then validated to the experts of research and development. In this case, the writer validates the research instruments to the faculty member of The University of Sydney who has specialty in research in education and NNEST (Non Native English Speakers in TESOL). Having validated the research instruments, the writer begins to develop and test the update portfolio.

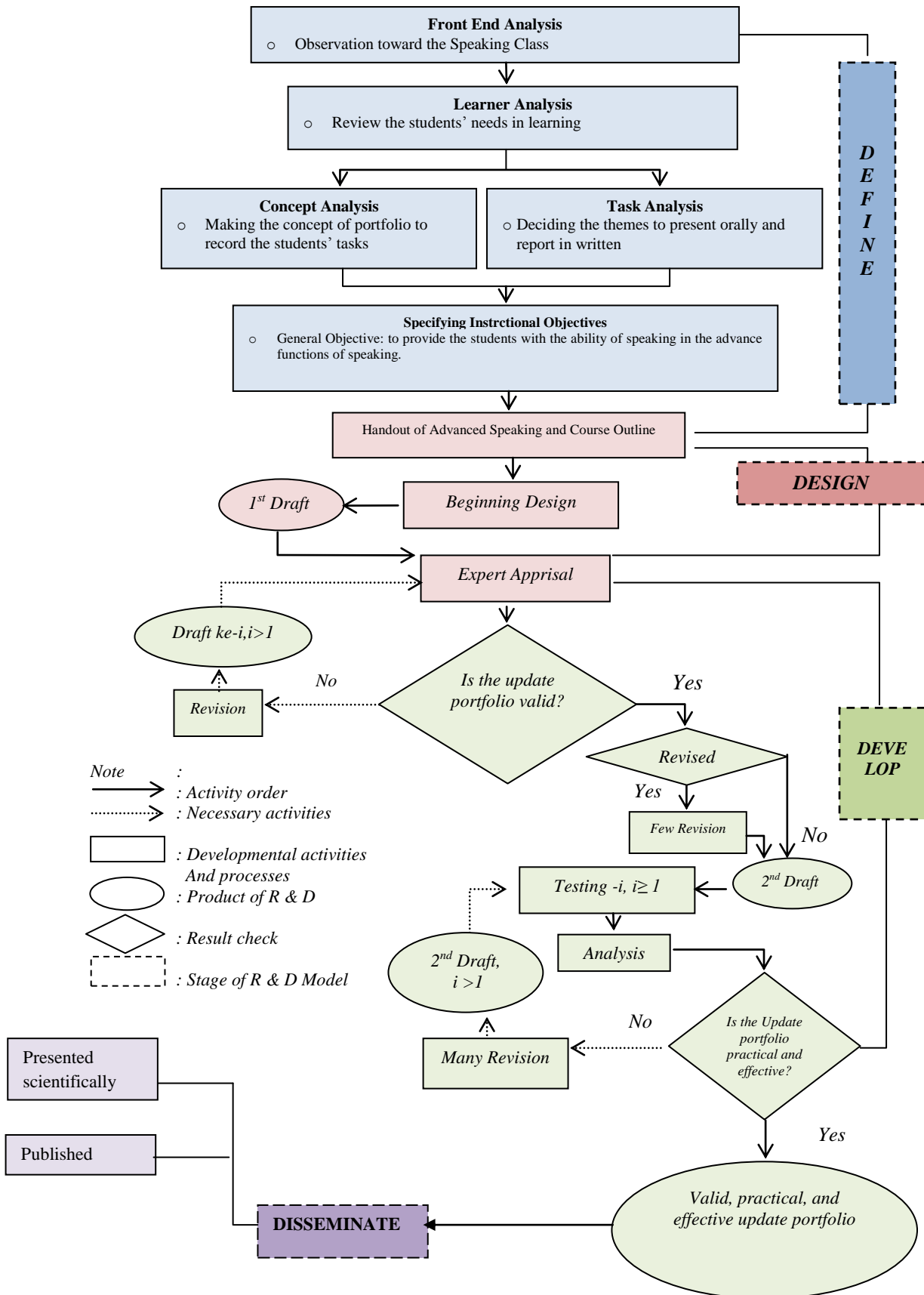


Figure 1. 4D Model (Thiagaraja, dkk, 1974)

## **Research Findings**

### **1. Defining Step**

In defining step, there are some result analyses including the results of front-end analysis, learners' analysis, concept analysis, and task analysis. The result of front-end analysis is summarized that the lecturer, in the beginning of the preliminary study, lists the arising problems in Advanced Speaking class. The result shows that the speaking skill for a long time they study speaking class is measured in their daily presentation and shown using scores and grade in the end of the semester. The students do not get the feedback and progress after they learn speaking. In this case, the writer requires having an assessment which can record the students' learning process not only the learning result. In a nutshell, the writer records the learning situation and students' habits.

The result of the learner's analysis includes the interaction patterns in learning, the responses of the students in accomplishing the task, the ways in solving the problems, and choosing the learning materials. Meanwhile, the results of concept analysis contain the learning media in speaking which are not available in the speaking class. Besides, the students do not have a good solution after being given feedback. Some lecturers give feedback with no solution to get the betterment. Lastly, the results of task analysis show that the forms of speaking tests, the content of the tasks, the objectives of giving the tasks, and the ways in solving the tasks.

After defining the problems, the writer reviews some inspirations by Helmbold, et.al (1998) and Chen (2006). The writer relates the benefits of using portfolio to assess the students' speaking skill in a semester learning process using the based on the needs in the classroom. The defining step here can ease the lecturer in designing the portfolio.

### **2. Designing Step**

Having defined the problems in EFL classroom, the writer designs the update portfolio which is needed as Prastowo (2012) says that in developing innovative learning product, the lecturer should regard the good book contents including title, front parts (forewords, table of contents, introduction, and acknowledgement), contents (parts of the essences of the books, references, and the writer's biography). The review is then made as the design to compile the portfolio with the students' tasks.

The writer then designs the prototype of the update portfolio. The prototype is compiled using the compilation of the students' works. The works consists of four themes as explained in the course outline in the fifth semester, namely, culinary traveling, prayer traveling, update movies, and mini research. The four themes are related to the students' habits like traveling, selfie, and updating. The students' activities are designed to act based on the update issues in the college and the youngsters' surroundings.

### 3. Developing Step

The developing step is the essential step in developing update portfolio as the speaking assessment. The findings of the developing the product include the validation process, the practicality observation, and the effectiveness of the update portfolio. Table 1 below shows the validity, practicality, and effectiveness in developing update portfolio and the details to acquire them.

**Table 1 Prerequisites in Developing Update Portfolio**

<b>Instrument</b>	<b>The Assessed Products</b>
Validation Sheets	a. Validity of portfolio b. Validity of course outline c. Validity of handout
Observation Sheets	a. Practicality of portfolio b. Lecturers' activities c. Students' activities
Test	Scores of Speaking skill

From the validation process using the sheet of validation to the expert appraisal, the average scores  $2.62 \geq 2$ , so that the criteria determined to fulfill the valid criteria toward the portfolio developed with few revisions. The revision is seen from the comment and constructive suggestion to the better update portfolio. Meanwhile, the validity of course outline reaches the average score  $2.74 \geq 2$ , so that the criteria are fulfilled with few revision related to the giving of brain storming, speed of explanation, and the review session. The validity of handout is also good reaching  $2.42 \geq 2$ , so that the criteria in the product validity are also fulfilled.

The practicality is also measured using three aspects including content, language use, and use of portfolio. From the aspects, it is explained into description measured with the scale of 1, 2, and 3. The results of the three practitioners are shown in Table 2.

**Table 2 Practicality of Portfolio**

No	Aspect(s)	Description	Practitioner's Score			Average Score of Each Indicator ( $I_i$ )	Average Score of Each Aspect ( $A_i$ )
			1	2	3		
1	Content	a By compiling the students' works, the students can reflect what they have done after presentation.	3	3	3	3.00	2.73
		b The students' activities are qualified in case of their speaking and the media they use.	3	2	3	2.67	
		c The students' reflections ease the students to be better in improving their speaking	3	3	2	2.67	
		d The students can read the portfolio as their reflection easily.	2	2	3	2.33	

		e	The portfolio describes the students' process of learning.	3	3	3	3.00	
		a	The language used in the portfolio is understandable and applicable.	3	3	3	3.00	
2	<b>Language Use</b>	b	The sentences are effective and easy to the level of the students.	3	3	3	3.00	2.89
		c	The language used in the portfolio is communicative.	2	3	3	2.67	
		a	The portfolio can be used as the learning reflection and a recorded part of learning.	3	3	3	3.00	3.00
3	<b>Use</b>	b	The portfolio can be used and applied in the other learning classrooms.	3	3	3	3.00	
Average score of all aspects ( $V_a$ )								2.87

*(Observation, November 2015)*

The average score of all aspects in measuring practicality of the portfolio reaches  $2.87 \geq 2$  which is the criterion to be practical portfolio. In the observation process, the lecturer's activities include the pre-teaching, whilst teaching, and post teaching. The three is conducted well in 12 meetings in a semester. In each meeting, the lecturer prepares the needs of the teaching; he brainstorms the students using factual and actual issues that the students are interested in. Then, he begins the students' presentations in turns with the note taking technique in recording the personal feedbacks. In the end, he gives and discusses the feedbacks to be improved in the following meeting. To check the students' awareness in improving the lack in speaking, the students and the lecturer make the online group to always remind in the betterment process of speaking. Meanwhile, the students' activities include a week of observation, consultation and media making, and presentation. Those activities are effectively considered since the students can present what they have observe well and perfectly through a good process of qualified learning.

In the other hands, the effectiveness of the portfolio is measured using comparison with the previous scores of the students. The students get the average scores of speaking, namely, 89.90 meanwhile, the previous scores in the fourth semester are only 81.70. The effectiveness is gained from the students' responses in getting more progressive in involving their speaking activities outside of the classroom and they can reflect what they have done and got the feedbacks to be better. The students in university need to be led in the progressive and better way in learning so that their learning is directed well. From this learning process, the students are expected to learn with the base of self directed learning and reflective learning so that the students can still always learn speaking although they are not in the speaking class or English forum.

#### 4. Disseminating Step

In disseminating step, the writer disseminates the product in [https://www.academia.edu/19163927/Update\\_Portfolio\\_A\\_Speaking\\_Assessment](https://www.academia.edu/19163927/Update_Portfolio_A_Speaking_Assessment) and in online group of social media. Besides, the writer elucidates the research and development through this

paper to promote that the update portfolio can challenge the lecturers in this era to be always smart in using the trends to the students' progress.

## **Discussion of Research Findings**

The development of defining, designing, developing, and disseminating the update portfolio here is to make the record of the learning process of Advanced Speaking. The record in form of update portfolio developed functions like report which contains the students' learning process and products and feedback to have betterment. The update portfolio is in line with what is meant by Finch (2002) who states the authentic assessment can be classified that each students is treated as the unique person. The update portfolio highlights and appreciates the students' activities with the lecturer's control, leading, and guide to have betterment. In this case, he also explains that self- and peer-assessment offer ways of addressing this situation by encouraging the student to become part of the whole process of language learning and to be aware of his/her progress. The portfolio also encourages the students to appreciate all the unique and meaningful to be the lifelong learning material even after they have graduated from the college.

Besides, the findings are also straight lines with the writer's previous presentation; Sumardiono (2015b) states that using box office movie as the trending topic in the adult learners' surroundings is effective to improve the students' speaking skill. In this article, he finds that the portfolio is also effective as the authentic assessment which can reflect the learning process and products during learning of speaking in the classroom. This is so functional that the lecturer together with the students to compile the update portfolio as the learning reflection and documentation.

## **Summing Up**

The update portfolio which has been developed here is valid, practical, and effective to use in the university level. It is proven by the calculation of determined criteria that the average scores of the validation process validated by the validators, namely, more than the criterion, 2. Meanwhile, the practicality also reaches 2.87 in developing the portfolio. The lecturer's activities and the students' activities are more qualified in having a good learning process from observation, consultation, and presentation. And, the effectiveness is shown by the higher score compared with the previous score in speaking. From the discussion, the update portfolio becomes a good authentic assessment. It is expected to all the fields of the lecturers to use this kind of learning assessment to keep the students learning even after they graduate from the college. This is important to keep the learning quality since the lecturer should be able to compete in this era.

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Developing IELTS Curriculum for University Students: A Current Trend on  
Standardized Foreign Language Testing

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**Abstract:** IELTS (International English Language Testing System) has become familiar to every scholar. Since it trains the students to be more communicative toward the context faced in the recent issues, this test is more appropriate to prepare the students in welcoming Asean Economy Society. IELTS is one reflection to the students whether they master what is in the mind and what is in the environment using English. This phenomenon strengthens the writer to develop a set of curriculum of IELTS which is essential to enhance the students in mastering English internationally. This article elucidates the result of an R & D (Research and Development) conducted by the writer for 2 years. Consequently, it is expected to be useful to the university students specifically to master English as its standard and prepare them toward the challenge of the growth of industries in all aspects of life. The main points discussed in the findings include validity, practicality, and effectiveness of the curriculum of IELTS. Accordingly, it is proven by the research findings that the developed curriculum is valid, practical, and effective to use at university. In line with the current curriculum to the university, KKNi (*Kerangka Kualifikasi Nasional Indonesia*) can be automatically involved in this IELTS curriculum to be more efficient to use in work place, industry, and so on. Therefore, developing the good IELTS curriculum is a first excellent step in achieving standardized result of foreign language testing.

Key Words: IELTS curriculum, R & D, language testing.

## **Introduction**

ASEAN is a gateway to leading the global economy, where industrial and business activities in the ASEAN region is a key and a front player in the supply chain and production networks, both regionally and globally. At the end of this year, we will face the imposition of the free market that has been agreed upon in the formation of the MEA. It is a community that not only emphasizes the establishment of a single market in terms of purely economic, but also pay attention to the social aspects of cultural unification. Cooperation in education becomes very important. All boils down to higher education where the execution and implementation is over handed to the universities, both public and private. In line with the rapid dynamics of relations among nations in various regions, ASEAN aware of the importance of the integration of the countries in Southeast Asia and agreed on the establishment of a single market in southeast asia region. ASEAN is the third-largest economic power in Asia after Japan and China. Therefore, in a high-level meeting (SUMMIT) the heads of ASEAN state agreed the ASEAN vision of 2020 in Kuala Lumpur on 15<sup>th</sup> December, 1997. This agreement aims to improve the competitiveness of Asean and be able to compete with China and India to attract foreign investment. It is needed to boost employment and welfare of the ASEAN citizens. The establishment of global market which is termed as the ASEAN Economic Community, for Indonesian known as Masyarakat Ekonomi Asean or MEA, will allow the countries to sell goods and services easily to the countries of Southeast Asia so that the competition is getting tougher. MEA has blueprint which includes four pillars, one of which is Asean as a single market and a single production base that is

supported by elements of the free flow of goods, services, investment, and educated workforce. At the time of MEA is being enforced, there will be more workers competing to seize employment among Asean countries, especially the local workforce in the country itself. Of course, for workers who have high job competition will have a greater opportunity to gain economic advantage.

The quality of human resources must be increased formally or informally in domestic or intra Asean to prevent the influx of skilled workers from outside Indonesia. This is where the universities play prominent role to prepare human resources who ready to compete by improving the competence of graduates' quality equipped with language skills. The essence of higher education is transforming, empowering and enhancing students by developing their higher order intellectual capacities. In order to achieve it, it is necessary to reform various aspects. One of the reformation is renewing mindset, that higher university graduates should be directed and projected to be able to compete in MEA. Efforts made by the government, in the coordination of Higher Education, the form of adjustments is charged to Badan Standar Nasional Pendidikan or BNSP by adjusting the college standard with ASEAN college standards using AUN-QA. Then, the courses have been accredited by BAN-PT needs to continue accreditation in the ASEAN level. Higher education institutions should improve the quality of faculty, curriculum, and facilities to meet international standards.

In dicussing accreditation, improving the internal quality of courses is required. It could be started from the curriculum revitalization. Based on the Asean University Network Quality Assurance guidelines (p.17), course

curriculum should be developed to promote learning, learning how to learn and to instill in students a commitment of lifelong learning. A course of study curriculum should be based on the needs of the working world in the present and the future. SEAMEO stated that skills and competencies required in this century are; 1) character education, 2) entrepreneurship education, 3) information and communication technology, 4) language and literacy, 5) scientific and technological literacy. The main competencies that should be the main provision of the graduates is the ability to communicate. This capability must be manifest in the course curriculum.

In order to meet the International standards, students need to recognise some language testing. The function of language test is as an evaluation of the students' capacity in achieving the material being learned. There are some International language testing that even exist, those are BULAT, ILEC, ICFE, IELTS, and TOEFL. Those five types has meet the users' own needs, but the best known among Indonesian students and educators is TOEFL. It is the most well known English-language test in the world, particularly in Indonesia, but there is a language testing which actually also meets the international standard, that is IELTS. From the two years of the writer's observation about teaching experience, TOEFL raised the top rank of language testing in most Indonesia universities.

TOEFL is one of the major subjects taught in the eighth semester of STKIP PGRI Blitar. It is extremely difficult for students to recognise the other language test system than TOEFL. Language testing deals to some extent with validity. 'Validity' in testing and assessment has traditionally been understood to mean

discovering whether a test ‘measures accurately what it is intended to measure’(Hughes, 1989: 22). Based on the STKIP syllabus, it is said that the course of TOEFL aims at making the student acquainted with Test of English as a Foreign Language (TOEFL) including Listening Comprehension, reading and Vocabulary, structure and written Expression and Test of Written English. That is a huge mission to accomplish. The activities done at the language laboratory and in the classroom are discussing of the TOEFL comprehensively. The evaluation of this course based on the student’s score of TOEFL.

Based on the Indonesian Higher Education framework called KKNi, which stands for Kerangka Kualifikasi Nasional Indonesia, the description of learning outcomes is a collection of science, knowledge, practical knowledge, skills, affection, and competence achieved through a structured educational process and includes a field of science / specific expertise or through working experience possessed by a student, as we can see in figure 1.

**Figure1 : the description of KKNi qualification.**



Everything which have been mentioned in KKNi has been the trigger for the writer to create an idea of developing a curriculum of language testing with a new paradigm than TOEFL, but has the same function. The writer wants to merge the IELTS preparation as a new trend with the contain of the learning outcomes stated in KKNi. The connection between knowledge, skills, and cognitive are realized contextually in the IELTS test by implementing cognitive domain level in four skills tested, listening, reading, writing, and speaking.

Principally, the goal of learning IELTS is to make students successful engaging communication based on the established indicators. Because each class have different students in abilities, competence, talents, and speed of learning then it is necessary to organize method so that all students can reach the goals and master the lessons with the arranged curriculum and appropriate times, for example in one semester. The course curriculum of IELTS Preparation for university students has meet the AUN-QA suggestion to cover some ranges as stated in figure 2.

**Figure2: The Course Curriculum suggested by the AUN-QA guidelines**

The Course Curriculum should be designed so that it will cover the following:

- 1.1. The curriculum should take into account or reflect the vision, mission, aims and objectives of the institution. The vision, mission, aims and objectives are explicit and are known to staff and students.
- 1.2. The curriculum should be relevant with the demands and needs of stakeholders.
- 1.3. The curriculum should show a balance between specialist contents, general knowledge and skills. The curriculum is designed in such a way that it will be interesting to students, so that it will attract many applicants.
- 1.4. The curriculum should be designed so that the subject matter is integrated and strengthens other courses in the curriculum.
- 1.5. The curriculum should show the competences of the graduate. Each course should clearly be designed to show the outcomes of the course competencies. To obtain this, a curriculum map should be constructed.
- 1.6. The curriculum should be structured to show range, depth, coherence and organization of the courses.

*Adopted from AUN-QA Guidelines*

Based on the importance of knowledge, skills, and cognitive domain, the writer assumes that those concepts may facilitate teachers to help students

improve and develop their English language proficiency. This organizes all members of the class to be more active and more interested in learning. Finally the learning outcome of the study would be achieved.

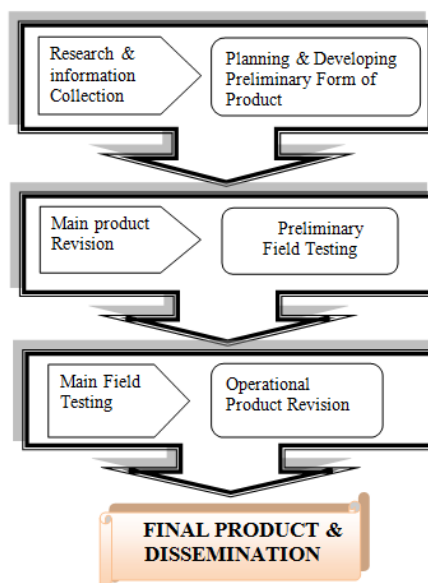
Since the IELTS Preparation curriculum design to become a new trend, the statement of the problem can be as follows: How IELTS curriculum developed for a course in order to be valid, practical, and effective. In accordance with above-mentioned problem, the objectives of this study are aimed at Developing IELTS Curriculum for University Students: A Current Trend on Standardized Foreign Language Testing.

**Research Method**

This study uses approach of Research and Development (R & D) since it is appropriate toward the objectives intended to reach in this study. Meanwhile, the developmental model used in this study uses the developmental model developed by Borg and Gall. Borg and Gall (1983: 772) define that ‘educational research and development (R & D) is a process used to develop and validate educational production’.

Based on the steps of R&D proposed by Borg and Gall (1983), in the process of developmental model of IELTS curriculum for university students is modified as the needs of the existance of new trend of English proficiency test that meets the international standards. Figure 3 below indicated the original model of R&D steps in developing the IELTS curriculum for university students.

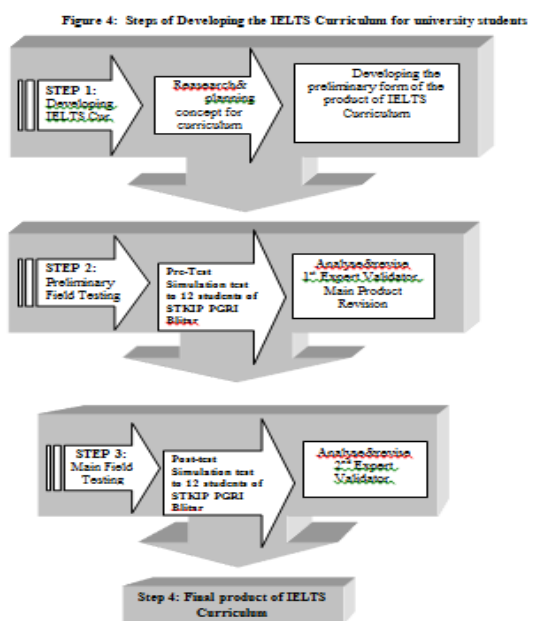
**Figure 3**



*(Adapted from Borg&Gall, 1983)*

The modification is made based on the writer's needs in the field. The model here is simplified into four main steps. They are; planning the concept and developing IELTS curriculum, preliminary field testing and main curriculum revision, main field testing and final curriculum revision, and the last is final product of the IELTS curriculum for university students. To be clearer, let's notice Figure 4.

**Figure 4: Steps of Developing the IELTS Curriculum for university students**



*(Adapted from Borg & Gall (1983))*

The basic model of R&D above uses seven steps from total of ten steps based on Borg & Gall. The researcher does not use operational field testing and decided to use two validators. This study is conducted in four big steps. The first, planning concept is required to developing IELTS curriculum for university students. This step is begun with reading some related literature, survey, observation, and interview with the lecturers and the students of English department at STKIP PGRI Blitar to get the complete and comprehensive data. The second is preliminary field testing which the IELTS curriculum for university students will be applied to the students to learn the English proficiency test. The third step is main field testing. In this step, the IELTS curriculum for university students is tested in the bigger scale of students to find out the curriculum is valid,



practical, and effective in learning speaking. The last step is final product of the IELTS curriculum.

### **Research Findings**

The number of degree of freedom for the dependent  $t$ -test equal  $N-1$ , where  $N$  is the number of subject numbers. It means  $12-1 = 11$  degree of freedom. In the table of  $t$ -values we find that with 11 degree of freedom a  $t$ -value of 3,106 is needed for the  $t$  to be significant at the ,005 level.  $T$ -value of 3,741  $>$   $T_{table}$  which is 3,106,  $H_0$  will be accepted. We can conclude that the IELTS curriculum has raised the students score in testing four skills.

The next step in preliminary field testing is the IELTS curriculum revision. It is revised for the first time by the first expert validator. The IELTS curriculum is criticized based on the content. The expert validator said that the contain of the IELTS curriculum for university students is lack of questions materials, the strong point is that there is a lot of knowledge but too much explanation which is not needed by the candidates. The researcher then revises the IELTS curriculum based on the critics from the expert. It took one year for the researcher to revises the IELTS curriculum meanwhile she is waiting for the new intake of the class semester 8<sup>th</sup>, the school year of 2014-2015.

The number of degree of freedom for the dependent  $t$ -test equal  $N-1$ , where  $N$  is the number of subject numbers. It means  $36-1 = 35$  degree of freedom. In the table of  $t$ -values we find that with 35 degree of freedom a  $t$ -value of 2,750 is needed for the  $t$  to be significant at the ,005 level.  $T$ -value of 5,659  $>$   $T_{table}$  which is 2,750,  $H_0$  will be accepted. We can conclude that the curriculum has definitely raised the students score in testing four skills.

The next step in main field testing is the IELTS curriculum revision. It is revised for the second time by the second expert validator. The curriculum is criticized based on its content. The second validator is an expatriate, as IELTS assistant principal examiner, and IELTS examiner support coordinator in IALF Bali. Researcher's obstacles in contacting the second validator is that he is living and working in Bali, so the researcher only making contact through email. The curriculum has been sent to Bali to be analyzed by him but the feedback of the

analysis result is only able to be communicated via emails. About the product, he said that contains of the IELTS curriculum is well designed, the English is mostly clear, but parts are very abstract discussion of knowledge.

This research is conducted of the course to gain some aim which the IELTS curriculum has some strong points. Based on the questionnaire for students' response toward the course filled up at the trial time and the comment from two expert validators, both stated the positive response in general. The strong points of the IELTS curriculum are: 1) really touch the cognitive domain, 2) it opens opportunity of new model of test that meets international standards to be recognised by higher education students in anywhere else, 3) The English written is clear, 4) With the design of the curriculum starts from instructional analysis up to grills, and 5) Clear explanation.

The researcher realizes that this research of development is still need to be developed further with a lot of studies and literature reviews. IELTS is still to be introduced in a small towns.

During this researcher was conducting, through observation which is done by the researcher, it is found some problems might occur and affect the dissemination of this IELTS Curriculum, those are: 1) The IELTS may not be well-known by students in small city like Blitar because they yet recognize what IELTS is. Their knowledge is only framed by TOEFL as their English proficiency test, 2) The IELTS still impressed as an exclusive assessment in the world by pointing certain test center, not open yet as TOEFL, 3) soon, Indonesia will deal with the MEA or *Masyarakat Ekonomi Asia*, so the Indonesian people have to ready to compete with people from other countries. They are free to enter Indonesia or any other Asian countries to work or live permanently. Indonesian students must be prepared for MEA with withheld the IELTS and mastering four skills as communication vehicle.

### **Summing Up**

IELTS (International English Language Testing System) has to become familiar to every scholar. It trains the students to be more communicative toward the context faced in recent issues. One of the tests in IELTS is speaking which is

one reflection to the students whether they able to reflect what is mind and what is in surrounding. This phenomenon strengthens the writer to develop a curriculum on IELTS preparation which is important to enhance the students in passive and active communication ability. This paper is a result of an R & D (Research and Development) conducted by the writer for 2 years. It is expected to be useful to the university students specifically to improve their four skills by the tips and trick provided in IELTS curriculum designed for higher education students. This R&D investigates whether the developed IELTS curriculum is valid, practical, and effective to use for the university students. In a nutshell, it improves the students' four skills in learning IELTS to prepare students in facing 2015 ASEAN economic community. In line with the current curriculum to the university, KKNI (*Kerangka Kualifikasi Nasional Indonesia*) will support this IELTS curriculum work to be more useful to use in work place, industry, and so on. Therefore, preparing university students in mastering the prerequisite to involve themselves in such kind of environment, this developed IELTS curriculum complete their ways in being winning generation.

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## **The Influence of Group Investigation Learning Model towards the Learning Motivation of Geography Students in Senior High School.**

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### **ABSTRACT**

Geography Learning in XI Social Science Classes SMAN 1 Ulujami Pematang still dominated by conventional teaching methods that make students become passive and unmotivated in learning. Therefore, it is necessary to apply a model of learning that can foster activity and student's motivation. The Group Investigation Learning model (GI) has several advantages. Advantages of Group Investigation Learning model among others: (1) increase the ability to think critically, (2) creating a learning environment that is democratic, (3) enhance the development of soft skills, (4) may improve social solidarity, dan (5) improve student's motivation to learn.

The purpose of this study to analyze the influence of group investigation learning model towards the learning motivation of Geography students in senior high school. The type of research is the quasi-experimental study with nonequivalent control group posttest only design. The subject of the study consisted of class XI Social Science are selected based on the score of Middle Semester Exam (UTS) 2 on 2014-2015 teaching year that had an average of almost the same (homogeneous).

The results of this study are showed significant influence of GI models on Geography motivation to learn of students. It was based on the results of the Independent Sample T-Test analysis showed a p-value of 0.000 level. P-level value is smaller than 0.05 ( $p < 0.05$ ). The average score student's motivation to learn geography experimental class is higher with a score of 208, while the control class with a score of 177. That's because the investigations conducted the mangrove forest, teachers simply deliver early learning problems, frequent interaction between students during learning, and students investigate different sub-themes.

**Keywords:** Group Investigation Learning, Learning Motivation, Geography

### **Introduction**

The learning model has several advantages. According to Slavin (2005: 5) model of Group Investigation (GI) has several advantages for students, among others "can develop relationships between groups, acceptance of classmates who are weak in the academic field, improve self-esteem, growing awareness to think,

solve problems, ability to integrate and apply the knowledge ". GI learning will help students who are academically weak and embarrassed when asked the teacher directly. The students usually feel more comfortable and free when asking a question. It can help teachers to membelajarkan students who do not understand the material. GI learning model also membelajarkan students to become researchers.

This is in accordance with the opinion of Sharan (2014: 130) Group Investigation model has the advantage of it being a class community of researchers who answered questions from a problem that comes from the surrounding environment. The existence of the research community requires all students to teribat participated in the study. Therefore, the formation of small groups of five students will make all students are active in research and reduce the possibility of students who do not work in groups.

Mushodik study (2013) found that "model Group Investigation affect the critical thinking skills of students of Madrasah Aliyah Negeri 6 Jakarta". The study has similarities and differences with this research. Similarities with this study that the use of models GI and material conservation of the environment (class XI), while the difference of this study to measure the students' motivation to learn geography, and research Mushodik measure critical thinking skills. The research findings Ulfah (2014) "learning model Group Investigation influence on student learning outcomes SMAN 1 Banjarbaru". The study has similarities and differences with this research. Similarities with this study is the use of the model Group Investigation, while others study the difference between this measure and the motivation to learn geography students study geography Ulfah measure student learning outcomes. The use of GI models by utilizing mangrove forest in the village of Mojo as a Source of Learning is done on the basis of competence to analyze the preservation of the environment in relation to sustainable development (environmental preservation material). Motivation of students is expected to increase with the learning. This is supported by the opinion Sharan (2014: 130) wrote that "GI has a unique character on the integration of the four basic features such as: investigation, interaction, interpretation, and intrinsic motivation". Based

on the above problems, the researchers plan to conduct a study entitled "Effect of Model Group Investigation Motivation High School Students Studying Geography".

**Literature Review**

Geography Learning Motivation Motivation to learn is to be possessed by the students. According to Uno (2008: 23) motivation to learn is the "internal and external impulse in a person to hold a change of behavior". Internal drive comes from the students, while the external impetus comes from the student environment. Two impetus must be owned by the students in learning.

Learning Model Group Investigation Model GI guided by Vygotsky's theory. Vygotsky argued intellectual develop when individuals face new experiences and confusing, and when they tried to overcome the mismatch caused by the experience (Arends, 2008). Vygotsky in accordance with the opinion of GI models which emphasize the investigation of a problem. Students will be attracted by the new knowledge and raises many questions. To answer these questions needed for the investigation. The new knowledge obtained by students through the GI able to develop their intellectual abilities.

GI learning model has a character that distinguishes it from other models. According to Sharan (2014: 130), "GI has a unique character on the integration of the four basic features such as: investigation, interaction, interpretation, and intrinsic motivation". The fourth of these features are interrelated in GI learning. The linkage that will affect the success of students in achieving the learning objectives. Therefore, teachers must prepare lesson well. Learning good planning will make the application of this model successfully. GI learning model consists of six steps . According to Sharan ( 2014: 135 ) steps GI models as follows .

Step	Learning Activities	role of Teachers
1	( 1 ) the teacher gives a general	( 1 ) leads the discussion of

	<p>matter , ( 2 ) utilizing a variety of learning resources , ( 3 ) students make questions , ( 4 ) students determine subtema , ( 5 ) to form interest groups .</p>	<p>research , ( 2 ) providing basic materials , ( 3 ) facilitate awareness of the problem , ( 4 ) coordinating penyusunan sub theme</p>
2	<p>( 1 ) students choose questions that will they find the answer , ( 2 ) determine student learning resources are needed, and ( 3 ) the students divide up the work and determine roles</p>	<p>( 1 ) help the group formulate a realistic plan , ( 2 ) help keep the cooperative norm , ( 3 ) to help find the right source</p>
3	<p>( 1 ) students find information from various sources , ( 2 ) the students composing and recording data , ( 3 ) students report the findings to the friends group , ( 4 ) the students discuss and analyze the findings ( 5 ) students decide if they need another study , ( 6 ) are integrating research findings .</p>	<p>( 1 ) assist with researching skills , ( 2 ) help check sources , ( 3 ) help to connect the resources , ( 4 ) helps maintain cooperative norms</p>
4	<p>1 ) the group decided that the findings will be presented , ( 2 ) students designing effective and attractive presentation , ( 3 ) the teacher gives a presentation procedures , and ( 4 ) teacher presentation scheduling .</p>	<p>( 1 ) helping to plan the group , ( 2 ) meet with executive committee , ( 3 ) ensuring that all members of the group participate</p>
5	<p>( 1 ) teachers and students prepare an evaluation sheet filled with students when the presentation took place , ( 2 ) the presentation took place involving all members of the group and led by a moderator , ( 3 ) Evaluate the clarity , attractiveness and relevance of presentation .</p>	<p>( 1 ) Coordinate presentation of the group , ( 2 ) directs the discussion of students , ( 3 ) create a rule to make comments , ( 4 ) menarahkan the conclusion of the discussion , ( 5 ) shows the relationship between sub-theme</p>
6	<p>( 1 ) evaluate the idea of the results of the research , ( 2 ) evaluate the knowledge , ( 3 ) incorporates all the findings of the group , and ( 4 ) shows his accomplishments as a researcher and as a member of the group.</p>	<p>( 1 ) evaluate the understanding of the main ideas , ( 2 ) evaluating the knowledge of the facts and a new term , ( 3 ) evaluate the findings of the group , ( 4 ) facilitate learning reflection</p>

Model Group Investigation influence on students' motivation. This is consistent with the results of research Tan (2004), Yulianto et al (2004), and Widiarsa et al (2014). The research results prove that students' motivation to use models of GI higher than students using conventional teaching methods. Motivation to learn is very important for the learning process.

Results of research Tan (2004) found that the model of the GI effect on students' motivation. Tan equation with this research study that is using a model of the GI on the subjects of geography. Research also has the distinction of research Tan. Subjects of this study the high school students of class XI, while research subjects Tan namely junior high school students of class VIII.

Research results Yulianto et al (2013) obtained GI cooperative learning inquiry-based experiments effect on students' motivation. Equation Yulianto research colleagues with this study lies in the use of GI models. The study also has differences with this research. The difference, the study subjects Yulianto et al namely junior high school students of class VIII, while the subject of this research the high school students of class XI. This study learning material that is the preservation of the environment, while learning material on Yulianto et al study the refraction of light (physics).

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Results of these studies found a model GI effect on students' motivation. This is in accordance with the opinion of Sharan (134: 2014) "investigation group to motivate students to take an active role in determining what they learn and how



they learn". Motivation is very important that students have in order to run an effective and efficient learning. Motivation It also allows students achieve the learning objectives.

Group Investigation also influence the motivation to learn because of the cooperation among students. This is in accordance with the opinion of Zingaro (2008: 2) "It has been found that the GI Also improves positive inter-ethnic relations and enhances the intrinsic Motivation". Students will begin to cooperate after the formation of the group. The cooperation in the form of equitable distribution of tasks among members of the group. This will prevent envy and dependency in the group. The absence of envy and dependency in the group will make the students motivated.

GI learning model influence on students' motivation because students have to socialize with a group of friends who have different cognitive abilities. According opinion of Joyce and Showers (2002: 53) "the" socially advantaged "Also students learned more through group investigation". The differences in cognitive abilities make students help each other. Students who do not understand the material would ask the group of their theme without any sense of shy and embarrassed. The absence of shame asked to make students more motivated.

### **Research Purposes**

This study aimed to analyze the influence of the model group investigation to motivate high school students to learn geography.

### **Research Methods**

This type of research that is quasi-experimental design with non equivalentcontrol group posttest only. The following designs were used in this study.

Experimental Group	X	O1
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Control Group	-	O2
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(Jacksen, 2011:153)

Description :

X = Learning using a model Group Investigation

- = Learning using a lecture and discussion

O1 = Charging a queisioner in experimental class

O2 = Charging a queisioner in control class

## Result

### Description Data

Motivation to learn geography students in this study is determined based on the average grade student motivation to learn the geography of the experimental and control . The average value of students' motivation to learn geography obtained from questionnaires . The average value will be used for data analysis and hypothesis testing . The result shows that the average value of students' motivation to learn geography experimental class is higher than the average value of motivation to learn the geography of the control class . Experimental class scored geography students' motivation to learn at 208 , while the control class is 177.

### Hypothesis Testing

The next hypothesis test with parametric statistical tests that the t test (t test). The calculation results of t-test with SPSS 16.0 the value of the P-value for the t-test is 0,000 (Appendix 13). Judging from the level of 95%, the figure is less than 0.05 0.000 Sig. This means that  $0.000 < 0.05$ ,  $H_0$  is rejected so that it can be concluded that the model group investigation significant effect on high school students' motivation to learn geography.

### Findings

The findings in this study indicate that the model group investigation significant effect on students' motivation to learn geography SMA.hasil calculation t-test with SPSS 16.0 the value of the P-value for the t-test is 0,000

(Appendix 13). Judging from the level of 95%, the figure is less than 0.05 0.000 Sig.

Other findings in this study include: (1) The students look happy to observe the mangrove forest in the village of Mojo, (2) Students who had pendiamdan embarrassed to ask, be more frequently asked, especially to the friends group of their, (3) Students feel more challenged by the the task of formulating the questions given by the teacher, (4) Sub different themes makes the curiosity of students is high.

Additional findings in this study include group work seriously because their work will be evaluated by other groups and all the students are more active in learning. This was caused by investigations conducted outside of school, the teacher only spoke about the problems in early learning, and frequent interaction between students during the learning. These three factors that make learning GI different from other cooperative learning.

## **Discussion**

The results showed that the model group investigation significant effect on high school students' motivation to learn geography. This is evidenced by the hypothesis test. Hypothesis test results show P-value for the t-test of 0.000 (0.000 <0.05). The average value of the experimental class motivation for 208, while the average value of motivation control class is 177. The results are in accordance with the opinion of Sharan (134: 2014) "investigation group to motivate students to take an active role in determining what they learned and how they study".

The results also supported by the results of previous studies, including research conducted by Tan (2004). The equation of this study with previous research the models GI effect on students' motivation to learn geography. The research also has differences with previous studies. This study uses a class XI IPS SMA as a research subject, whereas previous studies using class VIII SMP as a research subject. This study learning material that is the preservation of the environment, while learning materials in research Tan namely natural resources.

Research results Yulianto et al (2013) supports these results. Et al Yulianto research results obtained GI cooperative learning inquiry-based experiments effect on students' motivation. Equation Yulianto research colleagues with this study lies in the model of GI effect on students' motivation. The study also has differences with this research. Yulianto research subjects and others that junior high school students of class VIII, while the subject of this research the high school students of class XI. This study learning material that is the preservation of the environment, while learning material on Yulianto et al study the refraction of light (physics).

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of it being a class community of researchers who answered questions from a problem that comes from the surrounding environment. Second, frequent interaction when learning GI implemented. Students often interact with other students in a group to formulate questions and find answers to these questions. Students who had been quiet and shy to ask, be more frequently asked, especially the group of their friends. It happened because the student was given a place and time that is sufficient to ask the group of their friends.

This is in accordance with the opinion of Slavin (2005: 5) Group Investigation model has several advantages for students, among others "can develop relationships between groups, acceptance of classmates who are weak in the academic field, improve self-esteem, growing awareness to think, solve problems, integrate and apply the knowledge capabilities". Third, the teacher just gave GI problems early learning. The problem that the teacher namely access to mangrove forests could only use boats and frequent flooding in the village of Mojo. It requires students to analyze problems that occur. The existence of these demands could challenge students to think critically about the problems that occur and then poured in question and determine the sub-theme of the research.

It was appropriate opinion of Huda (2011: 124) Group Investigation model has several advantages for students, among others, "the students are involved in the activities of high-level thinking, such as synthesizing, summary, hypotheses, conclusions, and present a final report". Fourth, students investigate different sub-themes. GI learning in this study membagai class into five groups. Two groups investigated the mangrove forests of the physical aspect, while the three groups menginvesigasi groups of aspects of society. Sub-themes of different makes high curiosity of students. The group not only focused on the sub theme diinvestigasinya, but also have to know the sub-theme diinventigasi other groups. Students will be more comprehensive knowledge by analyzing several sub-themes. This is in accordance with the opinion of Trianto (2007 : 60 ) " learning activities should involve a variety of activities and wide-ranging skills and lead students to the types of different learning resources, either inside or outside of school ". Additional findings in this study include group work seriously because

their work will be evaluated by other groups and all the students are more active in learning . Such findings make GI learning in the classroom experiment goes well . Students are easier to be supervised and regulated by the teachers in each phase of learning . Each group is serious in doing its job because it will be evaluated on another group . Each group evaluates the clarity , attractiveness and relevance of presentation .

This is in accordance with the opinion of Pintrich , et al (1991 : 10 ) "extrinsic goal orientation complements intrinsic goal orientation , and concerns the degree to the which the student perceives herself to be participating in a task for s good, such as grades, rewards, performance, evaluation byothers, and competition ". Experimental class students also looks more active in learning. No more students are sleeping, playing mobile phone, or talking with friends. The opposite occurs in the control class. Some students in the control class still looks passive. This is indicated by the students were sleeping and talking with friends. Learning control class that will obviously interfere with the teacher in presenting the material and passive students who will not understand the material conveyed teacher.

This is in accordance with the opinion of Rusman (2012: 222) model of Group Investigation has advantages such as "develop student creativity, either individually or in groups and is seen as an active learning process, because more students will learn through the process of formation and creation". GI model's shortcomings in this research that not all students in the group are active in asking when the stage presentation of the results is in accordance with the opinion.Hal Sumarmi (2012: 132) that GI has the following disadvantages: (1) The GI is not supported by the results of research in particular; (2) projects often involve groups of students who can afford because students are better able to direct their own learning; (3) GI sometimes requires setting different circumstances, different material types and different teaching styles; (4) the state of the class does not always give a good physical environment for small groups as between one group with another group too close to the discussion group can not run well then

interfere with each other; and (5) the success of GI models depend on the student's ability to lead a group or work independently.

Constraints in this research is the implementation of the research conducted in the area of mangrove forest in the rainy season (Month February 2015). Students had to worry if it rains. Such concerns distract students when doing research in the field.

### **Conclusion**

Based on the exposure data analysis and discussion , it can be concluded that the study on environmental preservation material with Group Investigation model a positive effect on students' motivation to learn geography . The average score of students' motivation to learn geography experimental class is higher than the control class . This is because the learning steps GI that requires students to search for learning resources and analyze problems independently . Aktivias resulted in students learning geography students' motivation is high.

### **Suggestion**

Based on the above conclusions , the suggestions can be given as follows .

1. For the teacher , in applying the model of Group Investigation should ( a ) refers to students who do not ask questions and give feedback during the presentation stage , ( b ) conduct investigations on the ground when the dry season .
2. For further research is recommended to ( a ) examine the effect of Group Investigation model to another variable that is ' critical thinking skills and student learning outcomes , ( b ) to compare or combine with other learning models , and ( c ) apply to the Class Action Research .

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## **Short Movie as tools for Learning Sociology**

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### **Abstracts**

Sociology is one of subject taught in high school level under the field of social science. Learning sociology in high school is intended to properly equip students with knowledge and understanding on social life and society. Sociology teaches how to place oneself and becomes part of society. Sociology as science provides analysis tools to help investigating the phenomena arise in the society. In the process, teaching sociology is not as easy as falling of a log. The characteristics of sociology as a dynamic science, sometimes generates confusion for learners to understand the materials being taught. A variety of sociology teaching media then further developed to make learning sociology becomes simpler and easier to understand. Movie or film is taken into account as the simplest mean to convey information. Through movie, a complete picture of society can be presented without needing to directly see the actual condition. Therefore, movie is often used primarily to make the atmosphere of the class in accordance with reality. Movie is a representative form of media in showing the fictional example of a teaching material without having to go directly into the field. Nevertheless, a movie with a long duration often ineffective, for it was a short film with duration of  $\pm 5$  min then developed. Short film with compact duration can be used to deliver the material in the learning process for limited times. The article then discusses the implementation of using short movie in sociology on high school learning activities. The article then discuss about the effectiveness of short films in sociology on high school learning activities. This article is the result of research and development studies, and used an experimental design to compare learning outcomes between control class and experimental class. The result of the difference between the experimental class (using short film) with a control class that does not use the short film looks no significant differences were tested by independent t-test (independent sample t-test). In tests performed showed that there are differences in learning outcomes between experimental class and control class ( $t = -2.91$ ;  $p < 0.05$ ). Test results of the experimental class differences before and after using the short film also showed a significant difference in learning outcomes ( $t = 7.69$ ;  $p < 0.05$ ). That is the use of short films in teaching sociology at the school is able to significantly improve learning outcomes.

**Keywords:** Learning Sociology, Short Movie, Learning Media

### **Abstrak**

Sosiologi merupakan salah satu mata pelajaran yang diajarkan di tingkat sekolah menengah atas untuk bidang ilmu social. Pembelajaran sosiologi di SMA ditujukan untuk memberikan bekal kepada peserta didik terkait dengan kehidupan social kemasyarakatan. Sosiologi mengajarkan bagaimana bersikap dan menjadi bagian dari masyarakat. Sebagai ilmu, sosiologi memberikan alat analisis untuk melakukan analisa terhadap fenomena yang muncul di masyarakat. Dalam prosesnya, mengajarkan sosiologi bukan sesuatu yang

mudah. Karakteristik sosiologi sebagai ilmu yang dinamis terkadang membuat peserta didik kebingungan dalam memahami materi yang diajarkan. Untuk mengajarkan sosiologi, kemudian dikembangkan beragam media/alat untuk membuat pembelajaran sosiologi menjadi lebih sederhana dan mudah dipahami. Film sering dianggap sebagai sarana paling sederhana untuk memberikan informasi. Melalui film gambaran utuh kehidupan bisa disajikan dan diskenario tanpa perlu langsung melihat kondisi sebenarnya. Dalam pembelajaran penggunaan film sering digunakan terutama untuk membawa suasana kelas sesuai dengan realita. Film merupakan bentuk media yang representatif dalam menunjukkan contoh rekaan dari sebuah materi ajar yang disampaikan tanpa harus terjun langsung ke lapangan. Hanya saja penggunaan film dengan durasi yang panjang sering tidak efektif, sehingga kemudian dikembangkan film pendek dengan durasi  $\pm 5$  menit. Dengan durasi yang pendek, film pendek dapat digunakan untuk menjelaskan materi dalam proses pembelajaran. Artikel ini kemudian akan membahas tentang efektifitas penerapan film pendek dalam kegiatan pembelajaran sosiologi di SMA. Artikel ini merupakan hasil penelitian research and development, dimana untuk mengetahui efektifitas digunakan desain eksperimen dengan membandingkan hasil belajar kelas kontrol dan kelas eksperimen. Hasil uji perbedaan antara kelas eksperimen (menggunakan film pendek) dengan kelas kontrol yang tidak menggunakan film pendek tampak ada perbedaan signifikan yang diuji dengan uji t independen (independent sample t-test). Dalam pengujian yang dilakukan didapatkan hasil bahwa ada perbedaan hasil belajar antara kelas eksperimen dan kelas kontrol ( $t=-2.91$ ;  $p<0.05$ ). Hasil uji perbedaan dikelas eksperimen sebelum dan sesudah menggunakan film pendek juga menunjukkan adanya perbedaan hasil belajar yang signifikan ( $t=7.69$ ;  $p<0.05$ ). Artinya penggunaan film pendek dalam pembelajaran sosiologi di sekolah mampu meningkatkan hasil belajar secara signifikan.

Kata Kunci: Pembelajaran Sosiologi, Film Pendek, Media Pembelajaran

## INTRODUCTION

The world of education is not a stagnant world where only a straight line that never change, but education is a world that is always moving forward dynamically. Through the learning process, students learn a wide variety of teaching materials that will increase students' knowledge of the subject taught learning. The learning process is defined as a combination of elements arrayed includes human, material, facilities, and procedures that influence each other in achieving the goal (Hamalik, 2004). Each of the learning process adapted to the development of science and technology, which has been brought rapid changes in aspects of human life. These developments have changed the paradigm of man in seeking and getting information. One area that received significant impact in the development of science and technology is the field of education. Global changes in the development of knowledge and technology, especially those

related to education in the school system require changes in the attitudes of teachers in implementing teaching in the classroom. The attitude of teachers in implementing teaching in the classroom to be able to align themselves and leave the less effective way of learning since the absence of media learning or the lack of teaching materials.

Sociology, as an abstract and non-ethical social science can not be taught with delivery of theory and finding answers only, but it is important for use a variety of media that can make students more easily understand the concepts of sociology in real time with attractive casting. The material studied in sociology are abstract. It can makes students less interested and less familiar with the content material they get. Furthermore, the amount of material to be studied often make students feel difficult. In addition, subjects Sociology was often overlooked because many thought that the subjects Sociology can be understood with logic and reason. Whereas Sociology is a subject that train social sensitivity and has a grip material that could be analyzing social problems that often arise in the community (Hendrastomo, 2014).

Ability to analyze also depends on the direction and methods of learning from a teacher of sociology itself. We know that the ability of each learner is different. That's why the lecturer or teacher must also have a creative skill and efficiently. Therefore, to develop teaching and learning activities required for the development of the media that is able to attract learners and create an atmosphere conducive to learning more in getting the attention of students. One of the learning media is audio visual media with short duration under 30 minutes by compacting the core story of the short films that includes symptoms and social phenomena that exist in society, in harmony with subjects Sociology. However not many films are produced specifically for one particular subject and sociology teacher used film rarely. Almost teachers prefer to use the film media that boring and do not make the students provoked in understanding the content of the film, and in the end result that emerged from the activities of learners is less satisfactory. Whereas the use of audio visual media in the form of the film has been widely applied in the world, especially for subjects Sociology, short film is a form of media that is representative in showing the fictional example of a teaching material delivered without having to go directly to the street and

waited for a similar incident. However, the effectiveness of learning is also influenced by internal and external factors, namely the motivation to learn and certainly appropriate learning aids.

Dimensions of learning effectiveness in this study included three cases, the characteristics of instructional media, teacher characteristics and student characteristics. Media characteristics for effective learning in the learning process is the accurate media targets and able to help students understand the material, the characteristics of an effective teacher in the learning process that teachers are creative in developing curriculum and application of media technology, and the characteristics of students who are effective in the learning process are active, responsive, and flexible in approach and take advantage of the ease of learning models. According to Oscar Jayanegara (2013: 194-195), in the United States, a video work called Sesame Street is used as a means for learning, a means to educate the public.

With short film which have relatively short duration, the learning time can be adjusted with the allocation of time in learning and has a light storyline that expected to serve as an effective medium to study sociology in the classroom, for example material social phenomena, social studies, etc. Using short film, the enthusiasm of the students would be lifted in the following study. Student learning activities become more conducive and understand the real examples of teaching materials depicted through the medium of short films and student learning outcomes increased significantly.

## **METHOD**

### Research design

This study used research and development approach. Research and development is a methods used to produce a particular product and test the effectiveness of the product. (Sugiyono, 2009: 297). Experiment design used to test the reliability of the products. In this design model some treatment like pretest and posttest given (Nana, 2005). Experimental design that was developed by comparing the experimental group with the control group and compared between pre to post test.

### Population and Sampling

This study was conducted in two high schools in Yogyakarta, SMA N 1 Kasihan Bantul and SMA N 4 Yogyakarta. Schools were chosen for experimental and control, were selected based on several categories, one of which is based on quality and student achievement in the learning process. Each school selected a control and an experimental class. Selection of control and experimental classes at the school based on the same attribute and characteristics of students, so if there is a difference it will be visible in the learning process with a short film. Class control and experimental chosen randomly.

The study population includes students of class X specialization in social sciences. For each school, two classes were randomly selected to be set as a control class and experimental class. In this research, period used for two classes (groups) is 6 hours of lessons for one hour lesson where time allocation of 45 minutes. Scheme usage hours of lessons, to post test 1 hour lessons, 4 hours of lessons learning and 1 hour lesson for the post test. Strategies and models of learning to use a control class lectures and discussions, while the experimental class using short films.

### **SOCIOLOGY IN HIGH SCHOOL**

Sociology is one of the compulsory subjects for high school students, focusing in in social sciences programme. Sociology are one of social science subjects beside economics, geography and history. Compared to other subjects, sociology regarded as one of the subjects that are less important, although in reality it is not easy to understand sociology. Characteristics of sociology is looking the fact in community and do the analysis, requires students to understand not only the material provided but also its use in the realities of society. Therefore, the lesson of sociology, as an abstract and non-ethical social science, is just not enough to delivery theory and finding answers only. It is important to use variation learning process that can make students more easily understand the concepts of sociology actually by pouring attractive.

The abstract sociology material makes students less interested and less familiar with the content material they get. Whereas Sociology is a subject that

train social sensitivity and has a grip material that could be students in analyzing social problems that often arise in the community (Hendrastomo, 2014). In other words, sociology can not be analyzed or understood only by logic alone. On the other hand, the use of media in teaching sociology rarely developed and was limited to changes in the learning model. Of course the ability to analyze social problems should be owned by every individual in this world. In addition to social interaction and tolerance, understanding of social phenomena also need to exist in learners to social sensitivity and critical phenomena that exist in the neighborhood grow from youth where adolescence is a phase of growth that are starving for information and curiosity.

Sociology also has an important role in the formation of character. Teaching sociology strongly encourages students to look at the environment of life from all sides. Sociology is the study of social facts and does not look right or wrong phenomenon, so the power of analysis of learners in determining which ones are good and which are bad materialized from teaching sociology in high school of teaching materials were presented. In the subject matter contained in the subject Sociology, students are directed to understand the problems that exist in society and analyze sociological and logical.

Based on the competencies and learning objectives on subjects Sociology in high school level that has been arranged, subject matter requires learners to use the power of analysis and understanding of the case rather than rote theory. While the ability to analyze it also depends on the direction and methods of learning from a teacher of sociology itself. We know that the ability of each learner is different. That's why the lecturer or teacher must also have a creative skill and efficiently.

### **SOCIOLOGY LEARNING MEDIA**

Learning activities required the development of the media that is able to attract learners, create a conducive atmosphere and getting the attention of students. Lack of awareness of social phenomena is one of the obstacles in implementing independent learning which lead students to use the analysis capabilities. To produce a correct and sharp analysis, learners must often practice and given the things that stimulate and trigger analysis capabilities, so

that the activities and outcomes of learning is also changing towards more active. Media plays an important factor in learning sociology. With proper and appropriate media, learners can capture and stimulated.

According to Gerlach and Ely cited by Azhar Arsyad (2011), media consist of human, material, and events that build a capable students which acquire the knowledge, skills or attitudes. In this sense, teachers, textbooks, and school environment is a medium. Based on an understanding of the media, it can be concluded that the media in learning is a means of delivering instructional messages directly related to the learning model, in other words the way teachers act as a transmitter of information must use a variety of appropriate media. The appropriate media must have the accuracy and use of a flexible material such as one impact of technological developments and the current communication, the use of computerized technology in various fields, including in the world of education is a computerized learning media. The emergence of a wide variety of instructional media were attractive and innovative computerized increase the stimulation of learners in learning activities. Ali (2005) states that the use of computerized learning media has a significant influence on the attractiveness of the student to learn the competencies taught. The use of instructional media can increase the motivation of learners and assist learners in understanding the explanation given by the teacher.

The use of instructional media can be applied in various subjects at the high school level, either Biology, Mathematics or Physics. At Natural Sciences programme in High School, media development is limited to simple learning model. However, in Social Sciences programme, the application of innovative learning media more developed because the subjects in Social Sciences programme is more abstract and complex. The medium used is very different in shape and different ways of use.

One of the learning media is a short duration films under 30 minutes by compacting the core story of the short films that includes symptoms and social phenomena that exist in society, in harmony with subjects Sociology. But not many films are produced specifically for one particular subject and the use of the films are easily available now, rarely used by teachers of sociology itself. Not many teacher use short films for learning activities. Teachers prefer to choose



the film media that boring and do not make the students provoked in understanding the content of the film, and in the end result that emerged is less satisfactory. Whereas the use of audio visual media in the form of the film has been widely applied in the world, especially for subjects Sociology own short film is a form of media that is representative in showing the fictional example of a teaching material delivered without having to go directly to the street and waited for a similar incident.

The use of audio-visual media such as a short film to be one way to teach the abstract sociology. Film is a moving picture which can stimulate students to easily remember and encourage the increased participation of students (MacKenzie, Eraut & Jones in Pescosolido, 1990). However, the effectiveness of learning is also influenced by internal and external factors, namely the motivation to learn and certainly appropriate learning aids. Dimensions learning effectiveness in this study included three cases, the characteristics of instructional media, teacher characteristics and student characteristics. Media characteristics for effective learning in the learning process is the accurate media targets and able to help students understand the material, the characteristics of an effective teacher in the learning process that teachers are creative in developing curriculum and application of media technology, and the characteristics of students who are effective in the learning process are an active, responsive, and flexible in approach and take advantage of the ease of learning models.

With the audio-visual media such as short film with a relatively short duration, the learning time can be adjusted with the allocation of time in learning and has a light storyline is expected to serve as an effective medium to study sociology in the classroom, for material social phenomena, social studies, etc. Film is one of the popular culture products usually consumed, close to the students and intellectually accessible to students. Films can bridge everyday life with activities in the classroom. Effective use of the film in the learning process is obtained by using the film as a picture etched and test case for sociological theory offered by the story in the film (Pescosolido, 1990).

There are at least three advantages of using films in teaching sociology (Pescosolido, 1990: 339), first, the film can be used as case studies of individuals,

communities, institutions to apply and test the sociological approach. Second, the film can be presented as a guide and provide field experience as preparation for students directly involved in making observations. Thirdly, the film can present data documents in the past. Film can show how changes in the institutions of society or culture show idea affect our understanding of the world. By looking at the short film, the enthusiasm of the students would be lifted in the following study. Student learning activities become more conducive and understand the real examples of teaching materials depicted through the medium of short films and student learning outcomes in sociology increased significantly.

## **FINDINGS AND DISCUSSION**

Learning sociology in high school, leaving some of the materials that are difficult to understand only through face-to-face learning. One material that is often considered to be easy but it is difficult to understand is the matter of values and social norms that became one of the subjects in the study sociology class X social science programme. This material is always there in the subjects of sociology, both in the curriculum KTSP (2006) and the curriculum 2013. Values and norms is associated with the material being students and become a part of people's lives. Values and norms associated with rules and regulations in force in society when delivered face to face / lecture irrelevant. But it would be very relevant to what is there and become part of the community. Unease pushed chosen for teaching this material to be used in the case of sociology learning by using short film. To teach the material values and norms then we made a short film that tells the story of everyday life of young people in their social environment. Short film developed entitled 'tapi' which takes the idea associated with the culture of honesty among young people. Takes place in the classroom to tell about how the attitudes and behavior of students when carrying out the test. Make a cheat sheet, look at the answers of other students is a reflection of students that are relevant to materials related to values and norms. The short film is used to test the effectiveness of the film in the learning process.

The effectiveness of the learning process by using the medium of film is done to test the difference between the experimental classes (teaching the short film) with a control class (teaching by natural conditions) and to test the

difference between the condition before and after the use of short films in the learning process. In general, to conduct this research begins by conducting a pre-test to determine the basic knowledge of students. Pre test performed well in the experimental class and control class by giving the 15 question. After pre-test, learning activities ends with post test which also gives about 15 question. Problem between pre and post test has been tested and is equivalent to ensure that the problem does not affect the test instrument. Pre and post test results are presented as follows:

Table 1. Assessment Comparison of Experiment and Control Class Experiment

School	Class	Indicator	Pre test	Post test
<b>SMA N 1 Kasihan Bantul</b>	Control Classes	Maximum	11	12
		Minimum	5	5
		Mean	8.59	8.31
	Experiment Classes	Maximum	11	13
		Minimum	4	6
		Mean	8.89	10.07
<b>SMA N 4 Yogyakarta</b>	Control Classes	Maximum	12	13
		Minimum	8	6
		Mean	10.03	10.55
	Experiment Classes	Maximum	13	13
		Minimum	5	8
		Mean	8.16	10.75

The table shows that pretest scores between control and experimental classes are same. This indicates that the characteristics of the students before the study under the same conditions. Data from homogeneity test showed the same thing where the value of  $F=0.535$ ;  $sig=0.466$ ;  $p> 0.05$ .

The next test is performed to determine whether there is any difference in learning outcomes before and after the learning activities. In the control class where the teacher make the learning process with a natural model. In this case the teachers using student worksheets and provide materials with varying lecture, showed no significant change in learning outcomes between before and after the learning process. By using a paired t-test produces a value of  $t = 0.497$  with  $0.612$  meaning significance ( $p>0.05$ ) which showed no significant difference between before and after the learning process.

Table 2. Differences between pretest and posttest in Control Class

	Paired Differences					t	df	Sig. (2tailed)
	mean	Std. Dev	Std. error mean	Lower	Upper			
<b>Posttest-</b>	.1333	2.078	.268	-.403	.670	.497	59	.621

**pretest**

The absence of differences in learning outcomes between before and after study shows that students already have knowledge of the subject matter presented and learning activities in class are less able to stimulate students to improve their knowledge that has been owned. It could be due to lack of student motivation in following the lesson or learning strategies have been less appropriate teachers to promote students' knowledge.

Different results appear in the experimental class, a class where the teacher in the learning process using the short film as a medium to convey the material. In the experimental class using paired t test obtained value of  $t=7.690$  with significance 0.00 ( $p < 0.05$ ), which means there is a significant difference between before and after the learning process.

Table 3. Differences between pretest and posttest in Experiment Classes

	Paired Differences					t	df	Sig. (2tailed)
	mean	Std. Dev	Std. error mean	95% confidence				
				Lower	Upper			
<b>Posttest-pretest</b>	1.933	1.947	.251	1.430	2.436	7.690	59	.000

The difference between before and after the learning process in the classroom experiments showed that the use of the short film students are excited so that the material encourage student curiosity and ultimately enhance the student's knowledge of the material presented. This is consistent with research conducted by Fails, Smith (Tipton & Tiemann, 1993) which showed a high satisfaction of the students after using film in learning activities. Complacency will encourage the students to follow the lessons with joy resulting increased level of active participation of students. In the activities carried out, the teacher uses a short film combined with a discussion of activities to provide opportunities for students to understand the material in their own way.

When compared to the results of studying between control classes and experiment classes, also showed different results. Results of independent samples t-test result of -2.914 with significance at 0.004 ( $t = -2.914$ ;  $p < 0.05$ ) in which there is a difference between the experimental class and control class.

Table 4. Differences between Control and Experiment Classes on Post Test

	Levene's test for equality of variances		t-test for equality of means						
	F	Sig.	t	df	Sig. (2 tailed)	Mean Diff.	Std. Error Diff.	95% confidence Interval	
								Lower	Upper
<b>Equal variances assumed</b>	5.977	.016	-2.914	118	.004	-.966	.331	-1.623	-.309
<b>Equal variances not assumed</b>			-2.914	108.96	.004	-.966	.331	-1.624	-.309

It is strengthened by an average of correct answers out of 15 items were higher in the experimental class (mean=9.950) than the control class (mean=8.916). The results showed that the experimental class learning outcomes better than a control class, so that the short film used as a medium for the delivery of the material showed a good contribution in improving student understanding.

**CONCLUSION**

Sociology in high school is one of the important lessons that teach students how to be and interact with the community. These subjects have characteristics that are difficult to study because it is an abstract science. However because of the importance, understanding the materials delivered to students is part of the way students understand the community. The material submitted must be able to bridge the social reality with the theory that there is relevance of subjects taught. The short film is one way to bridge the material with a social reality with a different approach in its delivery to students. The short film which is expected to become a popular medium that fit to teach sociology with more fun.

Short film is a live picture story that tells a case/life story in brief. Short films in the learning process become case studies for students closer to the

actual reality. Short film <5 minutte that provide audio visual experience to the students. Building a real experience to be part of the sociological imagination to better deliver real fantasy dive students in sociology as part of the knowledge that exists in society.

The use of short films in the learning process encourage increased student learning outcomes. An average of correct answers students in the experimental class (which uses a short film) higher than in class control (mean=9.950> mean=8.916). Using independent samples t-test between the experimental class and control class, which concluded there was a difference between the experimental class and control class ( $t=-2914$ ;  $p < 0.05$ ). Pre and post test results also showed an increase in learning outcomes. Paired t-test showed that there are differences between the experimental class before and after the learning with short film ( $t=7.690$ ;  $p < 0.05$ ). Short film became one of the factor to drive student to enjoy the learning activities so that learning motivation, understanding students can be improved which leads to good learning outcomes and joyfull learning activities.

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# ‘REFORM’ Magazine: A Medium in Reforming Student-Author’s Motivation in Writing English

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## ABSTRACT

AEC brings vast and ambitious era for ASEAN countries to compete with each other in work fields. This demands all people to be able to communicate in English, the worldwide language, productively. Particularly, universities are expected to equip the students with English language skills as a precursor to their study and career growth. Language Center of University of Muhammadiyah Malang (LC UMM) creates ‘REFORM’ English magazine as a medium to train the students’ life skills in writing. Specifically, all rubrics in the magazine are competitively selected through editors and mostly addressed to the students as the author. The contributor distribution is inspired by the student-centered learning and collaborative writing between the students and the lecturers. The study is aimed at portraying on how ‘REFORM’ English magazine bridges both English and non-English department students’ interest in writing. Moreover, the real-life instructions are expected to afford them an opportunity to be more competitive in language learning process. The result showed that there was an increasing number of students who participated and successfully published their articles in the magazine observed from different editions.

*Key Words:* ‘REFORM’ English magazine, English writing

## 1. Introduction

The Language Center of University of Muhammadiyah Malang (LC UMM) has a responsibility to prepare the freshmen from all departments to be proficient in English through English for Specific Purposes (ESP) classes separated in four language skills for two semesters. However, the students who major in different study programs have different English level of mastery from their former senior high school as well. It was seen from the evaluation of Test of Academic English Proficiency (TAEP) held by LC UMM. Therefore, ESP lecturers should be able to develop the students’ competency in listening, speaking, reading, and writing. The first two skills, reading and listening, belong to receptive skills, while speaking and writing belong to productive skills. As stated by Riggenback and Lazaraton (1991, cited in Widiati & Cahyono, 2006: 269, in Kusumaningrum, 2011), language learners are considered successful if they can communicate effectively in the language. It means that language learning success is evaluated by the fluency of the language they produce.

As one of productive skills, writing is said to be the most complicated skills among all four language skills (Hinkel, 2004: 4, cited in Nurjanah, 2011: 81). Students, as the agent of language learners, need an apt condition to explore their ability to write. In fact, students formerly had little exposure to writing activities in senior high schools since they were merely taught by a lot of grammar and theory of writing as stated in Alwasilah (2001). Due to the situation, the students encounter difficulties when they take a compulsory subject, Writing class. Moreover, they have limited access to practice as they are only required to write when the lecturer gives assignment and

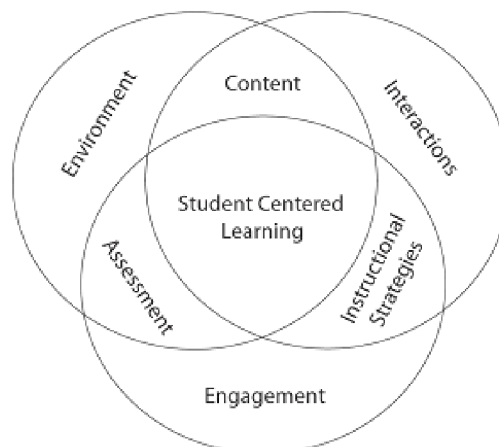


activities in class. Writing needs not only the knowledge on the linguistic organization of written discourse but also the creativity of the writers to put the concepts, thoughts, and ideas altogether into words (Richards, 1990: 100). It becomes more complex for the students to learn if they rarely practice.

Empowering real practice for ESP students, LC UMM has brought 'REFORM' magazine to facilitate their potential in putting various ideas and thoughts into written texts. It is the only English magazine published by LC UMM in every semester. The magazine has been applied as one of the learning sources in ESP classes. From time to time, 'REFORM' has faced evolutionary changes of topics and contributors in the magazine. Formerly, the ESP lecturers were the only organizers and authors who manage, distribute, and produce the various articles. Looking at the importance of writing exposure and real practice, ESP lecturers in LC UMM shift the focus on giving beneficial access for the students to contribute as the author as well as the organizer. This innovation is inspired by both the active and collaborative learning between the students and the lecturer adopted from student-centered approach. Student-centered approach in writing will include active and collaborative learning which help students develop productive writing habits and revision strategies (Anonymous, 2015).

This chapter portrays on how 'REFORM' magazine bridges both English and non-English department students' interest in writing before they take Writing ESP class.

## 2. Student-centered Learning Method



**Figure 1.** Student-Centered Learning Method

The figure showed that student-centered learning environment can include students' responsibility for their own learning, independent work, and solve authentic problems (Active Learning) and interpersonal interactions to the educators (Collaborative Learning) as stated in Marcussen (2013).

## 3. 'REFORM' English Magazine Writing Process

In 'REFORM' magazine, there are several stages before all the articles are published and distributed. Firstly, the articles from both students and lecturers will be reviewed by Editor 1. The editor reads and marks several mistakes like putting the squiggles and cryptograms decorating the papers. The corrections are emphasized on the title, sentence structures, punctuation, coherence,

vocabularies and etc. As soon as the corrections are finished, the students revise under the lecturer's guidance. It opens the students' eyes on how to arrange a good piece of writing. It also demands the coordinator of rubric/editorial staff (lecturer) to prove whether the articles are originally written by the students themselves or not by searching from related sources.

The next step, the articles will be selected based upon the result of revision. This stage enforces a great deal of challenging competition among students from different departments. Indeed, the authors are not restricted from particular study programs since ESP classes cover all thirty five departments. Once the articles have passed Editor 1, those pieces of writing are further submitted to Editor 2 and Editor 3. This step involves more consultations between the students and the coordinator of rubric. By consulting their freshly finished writing and gaining some feedback, the students are introduced by several common mistakes done by beginners which usually includes punctuation, capitalization, coherence of paragraphs, etc. It stimulates them to know how to revise their own work better and avoid such common errors in writing more carefully. Eventually, it reduces repetitive mistakes in English writing due to their active learning experience.

By conducting advisory style to boost students' writing in 'REFORM' magazine, rubric coordinator implements collaborative writing with the students by putting their different ideas and thoughts into mutually cooperative writing product. It is also seen during the article completion, in which 'REFORM' editorial staff involves the students in collecting the actual information to one of the selected places together. For instance, on *Malang Spot* rubric, the students along with the coordinator of rubric conducted a fieldtrip to Ngantep Beach in order to update the content of their writing. In the visit, both the lecturers and student help improvise the authenticity of the article based on what they have observed. More importantly, it enables the authors to add and perfect their work under constructive guidance of their lecturer. Hence, the collaborative learning style in writing becomes a significantly advantageous experience for both the author and the lecturer.

On the systematic stages above, all 'REFORM' magazine contributors especially the students are benefited by building English environment. They often read sources and intensively listen to their lecturer's exposure in English during conversations in the draft making. Indirectly, the students will be habituated to utilizing the receptive skills. Besides, the authors activate their productive skills by responding and even criticizing the feedback from the lecturer. They will orally reply when their lecturer initiated to open the talk about the revision. Naturally, they will ask further when they do not understand what the written feedback means because they want to revise better. By listening to the lecturer's concise explanation, the students personally takes some note in English in order to ease their way of their articles. In short, the consultations result to mutual advantage on developing communicative English learning between students and lecturers.

#### **4. Areas of Topics in Writing**

Besides building English environment, the students are benefited to express their ideas in writing based upon their interests and cultural background due to the variety of interesting rubrics. Approximately, there are more than forty pieces of writing which are included from different rubrics, they are *Student World*, *Intermezzo*, *Sportvaganza*, *Culture Corner*, *Short Story*, *Poem*, *Book Review*, *Everything for Laugh*, *Science and Tech*, *Insight*, *Traveling*, *English Corner*, *Movie Review*, etc. Those topics can be a wide range of scope for the students to write, in which they are free to choose which rubric interests them. For instance, English Department students who are interested in arts of language like prose or poetry can focus their writing on *Poem* or *Short Story* rubrics. While Psychology students who love reading in particular genre of books related to their discipline are able to choose *Book Review* rubric as well as Engineering students who prefer *Science and Tech* rubric to write about innovations in scientific research.

Moreover, students who are interested in cross theme rubric are still upheld in order to provide them with wider space for real English writing practice. It is because the main goal of LC UMM in publishing 'REFORM' magazine is not bridging them to their major of study exclusively;

the concern is more likely on how LC UMM can build writing habit among the students. Take an example on Medical Science students who have experienced adventurous traveling around the nation. Undoubtedly, *Traveling* rubric suits him well to share the fascinating places with visually stunning photographs in it. It is also possible for Sharia Economy students to compete with other authors in *Sportvaganza* although their discipline and hobby in sport are not correlated to each other. In short, the students are provided by a lot of choices in both related-discipline topics and cross theme topics.

In another perspective, writing in 'REFORM' reveals the fact that students are able to proactively maintain their culture from the place they were born. From several published *Culture Corner* and *Traveling* rubrics, such as 'A Fantastic Resort of B29', 'Finger Amputation in Papua', 'Sembah Sigeh Pengunten in Lampung', and 'Indonesian Traditional Beverages from Yogyakarta' were originally written by the native students from those different places. They were randomly selected from different departments. From their masterpieces of writing which were made by small observation or little research upon their islands, the magazine reflects on how real student life is in UMM. It shows the true environment of campus which consists of native speakers around the nation, from Aceh to Papua. The authors have experienced to show their hometown in public factually and collect the source of information more easily because can collect the data whenever they are home. More importantly, the readers which are basically the students themselves are able to learn not only the cross theme rubrics but also the cross culture understanding within different places.

The publication of the essay writing in 'REFORM' magazine can be categorized as a form of reward showing that they have productively created a good piece of writing. The magazine which is regularly printed more than 9,000 copies that covering all freshmen in 35 departments, several units including rector office, and other benefactors in every semester opens the chance for the students to expose what they have struggled for. In addition, the magazine publication boosts their confidence that they can communicate English fluently through their piece of writing. The more articles they produce, the more comfortable they feel from writing activity is. Moreover, their piece of writing is used as authentic reading materials in ESP class.

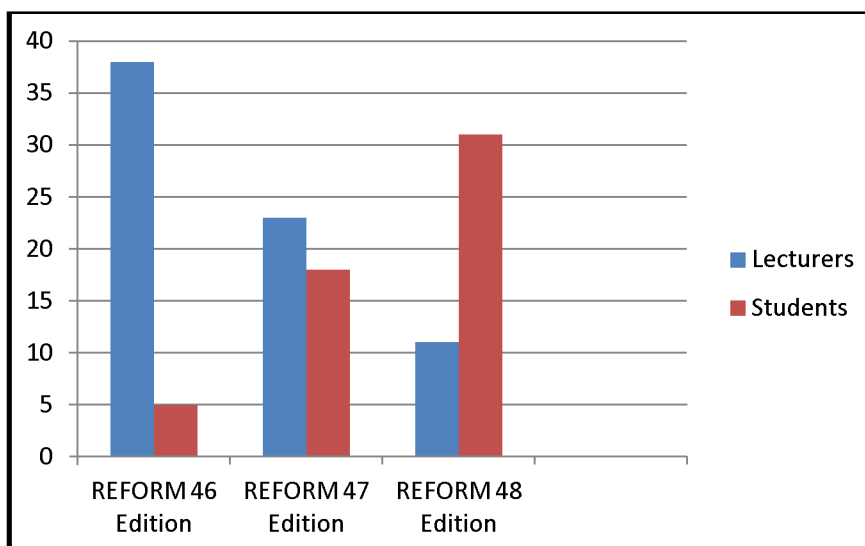
On the other hand, due to the tight selection, there will be some articles rejected by the Editor 1. Those rejected articles, then, will still be guided to join the next selection in the next edition. Presumably, ESP lecturers thought that the participants in the magazine will only be dominated by English Department students. It is because the lecturers put high estimation that English Department students perform better since they take English as their study major. In fact, several English students' articles were rejected when compared to other participants' writing. It means that both English and non-English Department students at UMM are all potential in which they need equal chances to develop their English skills from time to time. Thus, creative and innovative learning opportunities should be more widely equipped for them.

No doubt, the actual learning that the students acquire during 'REFORM' magazine process is significantly different from the learning environment they obtain in Writing class. In class, on the other hand, the papers are read, returned, and the class moves to another assignment. The teacher hopes that the students will comprehend the numerous corrections he made in the paper. Yet, the students have rarely responded to reply to a teacher's remarks or to go to him and ask a question, at least not on any regular basis. As a consequence, they rarely understand how or why the students made errors, not surprisingly, the same errors and problems would appear on the next paper.

By comparing two different environments in 'REFORM' magazine writing process and ESP Writing class, it is not supposed to be judged that ESP Writing class is less effective than the other one. 'REFORM' magazine more likely relies on challenging competition which employs limitless active learning for students whereas ESP Writing class demands on the cognitive skill performance to be evaluated and accumulated into Grade Point Average (GPA). However, the existence of both learning chances above is significant to be maintained in order to explore the hidden potential of the students.

## 5. Students' Motivation in Writing at REFORM Magazine

Knowing the beneficial active learning style which adopts student-centered learning method, LC UMM found out that there has been an increasing number of motivation from the students in 'REFORM' magazine writing based on the increasing number of the students who participate as the authors. From the last three editions in 'REFORM' it was revealed in the following diagram.



**Chart 1.** REFORM contributors in three editions

On Chart 2., in 'REFORM' 46 Edition, there were 38 lecturers including ESP and English Department lecturers who dominantly wrote in the magazine compared to the students who were only 5 people. The students were from academic year 2010/2011 until 2013/2014. It showed that the students' participation was still low. In that edition, LC lecturers primarily emphasized on teacher-centered guided materials for academic purposes and pleasure. Moving to 47 Edition, the lecturers' contribution was still dominant; there were 23 people consisting of English Department and ESP lecturers. Meanwhile, the students' participation was three times higher, which was achieved by 18 people. In that edition, LC lecturers have set higher portion of rubrics for students to write. Successfully, the number of students has increased. Still, LC UMM considered the number of students participating in 'REFORM' need to be enforced. Through several 'REFORM' workshops held by LC lecturers, the students have been empowered to produce their own writing which can be used as one of teaching and learning sources in ESP classes. Besides, they were boosted to confidently contribute since there would be intensive consultations with the lecturers. It was, then, seen from the 48 Edition result that there were only 11 lecturers who contributed in particular rubrics. On the other hand, there was surprisingly high number of authors from students, achieving up to 31 people. Setting wider scope of writing topics for students and limiting the lecturers' contribution in particular topics has been significantly proven that there is high interest among students to write.

It was shown that the student-centered learning, collaborative writing, and positive reward empowerment upheld in 'REFORM' magazine writing process resulted to positive response from the students which can be from the increasing number of students who enthusiastically submitted their essay writing and successfully published it until this upcoming edition.

## 6. Conclusion

The students' potential in writing can be optimized well if the teacher or lecturer facilitates the learning experience which enables students to do a lot of practice in writing based on their personal interest as well as challenge them to become model of learning in class through their piece of writing. REFORM English magazine, a medium of ESP language teaching, would be a beneficial tool for students to experience real practice of writing in various interesting topics. In addition, the active and collaborative writing during the process of writing will help students succeed in writing activities, in which students know how to enforce their writing behavior, strategies, and quality. On this matter, the complexity in writing would not discourage them to be competent in writing since the students have broadened their knowledge upon language through intensively constructive feedback.

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# “Let’s Speak!”: Utilizing *Voxopop* to Enhance Speaking Skill

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## ABSTRACT

In the era of globalization, people are challenged to have the ability to communicate in worldwide language. English, as worldwide language, should be acquired by all people to encounter open competition in the communication era. English language teaching, therefore, becomes appropriate field to equip students with the ability to communicate in English. Rapid development of technology can be used as an alternative strategy to teach English. Some researchers have proven that internet based tool, such as *podcast* and *edmodo*, have successfully improved students’ English skills. Therefore, this paper describes the use of *Voxopop* as teaching medium to enhance students’ speaking skill. In the age of 21<sup>st</sup> century, it has become imperative to develop speaking skill. The best possible way one can do is to create speaking classroom activities to be more interactive and attractive. Through *Voxopop*, students are more motivated to learn how to speak English in more creative way rather than traditional way. It is interesting, fun, learning oriented, entertaining, catchy to use, and can help the students in improving their speaking skills. By utilizing *Voxopop*, the students will not only motivated to speak English but also be confident by having more practices.

**Key words:** *voxopop, speaking skill, communication.*

## 1 Introduction

In the age of advance technology, the use of technology in English language teaching and learning has become more popular. Brown (2007) states that there are a number of benefits of using technology in the classroom such as opportunity for learners to notice language forms, multimodal (visual, auditory, written) practice, and variety in the resources available and learning style used. Technology gives learners a chance to engage in self-directed actions, opportunities for self-paced interactions, privacy, and a safe environment in which errors get corrected and specific feedback is given. Hence, the use of technology is helpful for students in English language teaching and learning, particularly speaking skill.

Although using technology and media in a classroom is so helpful, many teachers are not aware of the important of making use of any kinds of teaching media. One of teaching media that could be an alternative to improve students’ speaking skill is *Voxopop*. *Voxopop* is a Web application program that can be used by teachers and trainers as an online learning tool to create forums where questions are asked using voice recordings instead of text. It can be used to help students develop their oral speaking skills by having students reply to questions using voice recorded answers and by hearing the recorded answers from other students. This online language learning tool is particularly useful in language teaching, where a teacher can post a question in the language they are teaching and have students respond orally to the question in the same language.

*Voxopop* offers some attractive features that will make students comfortable in enhancing their speaking skill. Through interaction point, teacher can create a conversation where he/she can listen to different students introducing themselves and talking about their hobbies or families by looking at the other students’ recording. It is a good way to generate more speaking opportunities and to maximize exposure to the language. Teacher also can record some words with different

intonation and ask the students to listen and try to pronounce them with the correct intonation. Another feature is narrative building and comprehension check. Teacher can record the first sentence of a narrative and then ask students to listen to the thread and add a sentence each to the story. Besides, teacher can check students' comprehension by record a story or something else and some questions related to it and ask the students to answer those questions.

Concerning to the development of students' speaking skill, this paper offers an idea in using Voxopop as teaching aid which be able to improve students' speaking skill. Some related definitions, the importance of technology in English language learning, types of classroom speaking performance, the use of Voxopop to enhance speaking skills, and the teaching procedures are given bellow as a theoretical basis to comprehend the technique implementation.

## 2 Teaching Speaking

Among all skills (listening, speaking, reading, and writing), speaking seems intuitively the most important. This is due to people who want to say something, express their ideas and knowledge, and involved in communication must through an action that called speaking. Speaking in a second language has been considered the most challenging of the four skills given the fact that it involves a complex process of constructing meaning (Celce-Murcia and Olshtain, 2000). This process requires speakers to make decisions about why, how, and when to communicate depending on the cultural and social context in which the speaking act occurs (Burns and Seidlhofer, 2002). Hence, speaking is needed by EFL learners. Many language learners are mainly interested in learning to communicate orally. Most learners feel that being able to communicate orally is an important goal in a foreign language learning (Graham, 2007, cited in Cahyono & Mukminatien 2011).

Richard and Renandya (2002) state that effective oral communication requires the ability to use the language appropriately in social interactions that involves not only verbal communication but also paralinguistic elements of speech such as pitch, stress, and intonation. Moreover, nonlinguistic elements such as gestures, body language, and expression are needed in conveying message directly without any accompanying speech.

Speaking is "the process of building and sharing meaning through the use of verbal and non-verbal symbols, in a variety of contexts" (Chaney, 1998). Teaching speaking has been undervalued and English language teachers have continued to teach speaking just as a repetition of drills or memorization of dialogues. However, today's world requires that the goal of teaching speaking should improve students' communicative skills, because, only in that way, students can express themselves and learn how to follow the social and cultural rules appropriate in each communicative circumstance.

According to Nunan (2003), teaching speaking means teach English as Foreign Language learners to:

- Produce the English speech sounds and sounds patterns.
- Use word and sentence stress, intonation patterns and the rhythm of the second language.
- Select appropriate words and sentences according to the proper social setting, audience, situation and subject matter.
- Organize their thoughts in a meaningful and logical sequence.
- Use language as a means of expressing values and judgments.
- Use the language quickly and confidently with few natural pauses, which is called as fluency.

## 3 Types of Classroom Speaking Performance

Brown (2007) stated that there are six categories of oral production that are expected from learners in the classroom. They are imitative, intensive, responsive, transactional, interpersonal, and extensive. The explanation for each of the categories is given bellow.

### 1. Imitative

A limited speaking practice may be spent on generating tape recorder speech. For example, learners practice an intonation contour or try to pronounce particular speech sounds. An activity of this kind is carried out to focus on some particular language elements.

2. Intensive

Intensive speaking includes any speaking activity to practice some phonological or grammatical aspect of language. This activity can be self-initiated, or forms of pair-work activity in which learners go over certain forms of language. The forms of language learned can be of passive voice or causative.

3. Responsive

Responsive requires replies; replies to teacher or to fellow students. This may take the form of comments to the teacher's or other learners' explanation. These replies are usually sufficient and do not extend into dialogs. The example below is taken from Brown (2007).

**T:** How are you today?

**S:** Pretty good, thanks, and you?

**T:** What is the main idea in this essay?

**S:** The United Nations should have more authority.

**T:** So, what did you write for question number one?

**S:** Well, I wasn't sure, so I left it blank.

4. Transactional (dialogue)

Transactional is an extension of responsive. In this activity, learners make dialogs in which they communicate their feelings or opinions or specific information. The following is an example how a responsive is extended into transactional, taken from Brown (2007)

**T:** What is the main idea in this essay?

**S:** The United Nations should have more authority.

**T:** More authority than what?

**S:** Than it does right now.

**T:** What do you mean?

**S:** Well, for example, the United Nations should have the power to force a country like Iraq to destroy its nuclear weapons.

**T:** You don't think the UN has that power now?

**S:** Obviously not. Iraq is still manufacturing nuclear bombs.

5. Interpersonal (dialogue)

Interpersonal dialogs are carried out to maintain social relationships among the participants/interlocutors. In this activity, the dialogs do not merely ask for information. There are factors that should be taken into account such as what register will be used, whether colloquial language is used rather than formal one, if sarcasm is involved and so forth. The following example is taken from Brown (2007).

**Amy :** Hi Bob, how's it going?

**Bob :** Oh, so so.

**Amy :** Not a great weekend, huh?

**Bob :** Well, far be it from me to criticize, but I'm pretty miffed about last week.

**Amy :** What are you talking about?

**Bob :** I think you know perfectly well what I'm talking about.

**Amy :** Oh, that... How come you get so bent out of shape over something like that?

**Bob :** Well, whose fault was it, huh?

**Amy :** Oh, wow, this is great. Wonderful. Back to square one. For crying out loud, Bob. I thought we'd settled this before. Well, what more can I say?

Learners need to learn how such features such as the relationship between interlocutors, casual style, and sarcasm are coded linguistically.

6. Extensive (monologue)



An extended monologue is carried out by intermediate and advanced learners. The forms may take in oral reports, summaries, short speeches, or presentation. In an extensive monologue, learners can either prepare this earlier or not.

#### **4 Technology in English Language Learning**

In the 21<sup>st</sup> century, rapid development of technology has been affected to English language teaching and learning. The use of internet, for instance, has increased significantly in education world, including English language teaching and learning. According to Ur (2012), the internet used in the classroom generally has two main purposes which are dominant today: communication through email, which enables teachers and students to interact outside the classroom; and information gathering through the World Wide Web.

More recently, interactive tools such as blogs, web tools, and podcasting have provided a range of possibilities for teaching different language content and skill. Furthermore social networking tools like *facebook* and *twitter* can be used as teachers–students and students–students interactions outside classroom. The teachers can send assignments to the students through e-mail and can also take online exam. Many other software are also available on internet that students can use free of cost. Spelling Bee, for instance, is one of an internet resource, which helps the students to spell English words. The teachers can also choose the level of difficulty that he/she wants to train to his/her students.

Technology is the usage and knowledge of tools, techniques, systems, and methods (Chanthiramathi, 2011). Technology in language learning has become the mainstream of educational innovation. Therefore, teachers will be able to develop new and innovative approaches for the second language learners. Nevertheless, to be able to speak competently is not an easy task. That makes developing speaking skill for students might also be a complex task as well. For that reason, teachers should be aware for that phenomenon. Very often, teachers are completely trapped within the situation that would allow one particular issues and rejected to consider other issues in developing students speaking skill. This, in the end, will make the designed speaking activities tends to be slightly imbalance. Since the development of the communicative language teaching, speaking is not only producing correct pronunciations, accurate vocabularies and grammars, but also how to achieve fluency, that is speaking without pauses and the ability to keep going without hesitation.

#### **5 Practical Steps in Utilizing *Voxopop* to Enhance Speaking Skill**

Voxopop is a Web application program that can be used by teachers and trainers as an online learning tool to create forums where questions are asked using voice recordings instead of text. It can be used to help students develop their oral speaking skills by having students reply to questions using voice recorded answers and by hearing the recorded answers from other students. This online language learning tool is particularly useful in language teaching, where a teacher can post a question in the language they are teaching and have students respond orally to the question in the same language.

Voxopop is actually a voice-based e-learning tool that aims for engaging talks in talk-groups with more fun and pleasure. Users would be able to record his/her voice and create a group and can use for development purpose. The best part of this tool is users can use it anytime, anywhere, from home or office, just with the use of internet. There are simple procedures in using Voxopop:

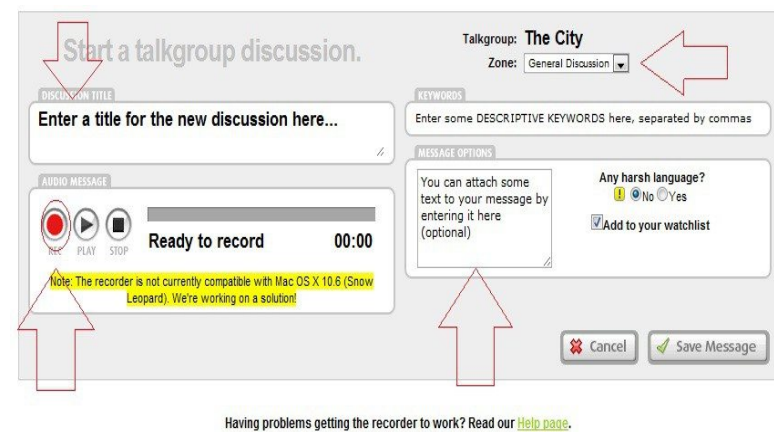
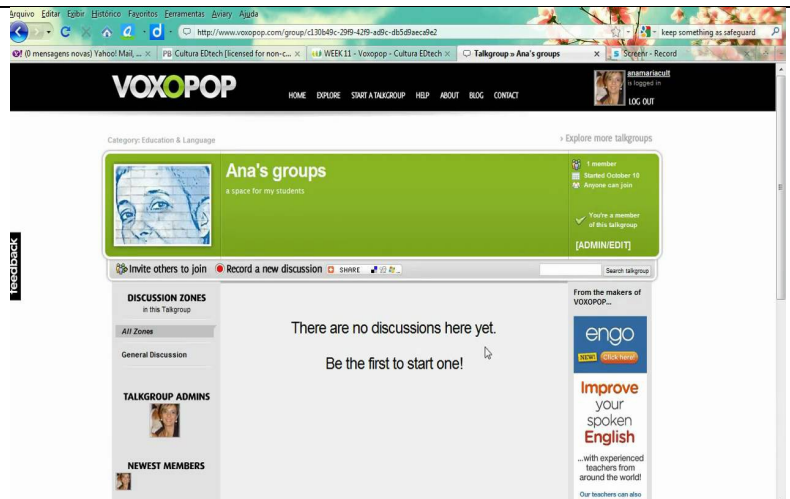
Step-1 Sign up on <http://www.Voxopop.com/> and make an account.



Step-2 Fill in the box to register

Step-3 Create a talk-group and fill the group description

Step-4 Record your voice invite others to join your talk-groups and reply to discussions



Step-5 Create a discussion



The advantage of using Voxop is that students could use to develop their oral ability by starting a forum and getting answers from students on the same time. Many times what we speak and what we think are two different things. Voxop, here, helps users to record their own recording and have self/peer-assessment about how and what must to change in their speaking skills. Another advantage is listening to and comparing with others' tasks so it can correct each others and make their speech better.

The best art of learning this tool is recording a user's audio and practicing it. The more a user practice the more he/she gets acquainted with the usages and benefits of the tool. The recording process is very easy and common like other audio-recording tool.

There are some interesting features that can be used by teachers and students in exploring Voxop. These interesting features are:

1. Interaction point

As a teacher, you can create a conversation where you can listen to different students, for example, introducing themselves and talking about their hobbies and families by looking at the

other students' recording. It is a good way to generate more speaking opportunities and to maximize exposure to the language.

2. Intonation.

You can record some words with different intonation and ask the students to listen them and try to pronounce them with the correct intonation.

3. Pronunciation

Record some sentences including words which have a little bit similar pronunciation and ask them to listen and try to repeat them with correct pronunciation.

4. Narrative building

You can record the first sentence of a narrative and then ask students to listen to the thread and add a sentence each to the story.

5. Comprehension check

You can record a story or something else and some questions related to it and ask the students to answer those questions.

Although Voxopop is very practical and offers many advantages, there are some limitations that might be encountered by teachers and students in using this tool. Students might be unfamiliar with the method of using Voxopop. Hence, the teacher should persuade and convince them about the benefit of it and perhaps the teacher must give a demo twice or more. Students might experiment recording their tasks twice, thrice or more times rather than once to get the best quality of their recording. Then, by having a discussion in a talk-group, some students might not be confident to record their speech because others could listen to their voices and they are afraid others will give negative feedback. However, some of the aforementioned limitations can be solved by the cooperation between the teacher and the students. Besides, the teacher should have enough preparation to implement teaching learning activities by using Voxopop so it can be an effective method to enhance students' speaking ability.

## 6 Conclusion

Teaching speaking means teaching the students to use the language in real communication. The English teachers should encourage them to produce English speech sound and oral production in appropriate contexts. Voxopop, as a teaching aid of English language teaching, would create fun and entertainment activities in a speaking classroom. It is beneficial for both teachers and students in English language teaching and learning. For teachers, it can become an innovative and interesting teaching media in teaching speaking. Meanwhile, for the students, Voxopop helps them to learn oral skill in a more creative way rather than using a traditional way. It can encourage their motivation in improving their speaking ability with the use of fun and attractive features. English teachers are suggested to apply Voxopop or other internet resources to make English teaching more effective and interesting. Nowadays, students are rather crazy about exploring such online tools and experiment with their own learning. Therefore, language teachers should try to utilize students' craziness for using social networking sites and other tools in a productive way.

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# “Let’s Write a Caption!”: Utilizing *Instagram* to Teach Generation Y

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## ABSTRACT

Innovative social media-based teaching has been widely conducted for both EFL (English as a Foreign Language) and ESL (English as a Second language) learners. Some researchers also have proven that social networking applications, such as *Facebook*, *Tumblr*, and *Twitter*, have successfully improved students’ writing skills. However, there are not any researches conducted to use *Instagram* as a medium to teach writing. Generation Y living in the 21<sup>st</sup> Century, in fact, cannot live apart from this most popular social networking application in the world, for either posting photos or merely checking their timelines. Posting photos on *Instagram* enables students to write captions to describe their photos. Unlike *Twitter* in which the students only have 140 characters, spreading words with pictures on *Instagram* is unlimited. A good caption which follows each photo can grab their followers’ attention and increase a number of likes. Therefore, writing captions in *Instagram* becomes a concern among the students living in this generation. As a lecturer who knows students’ interest on *Instagram*, it is beneficial to utilize this application to teach paragraph writing. The students are more motivated to learn how to write a good paragraph, including organization, logical development of ideas, style and quality of expression, grammar, spelling, punctuation, and capitalization in order to make their posts more attractive. By implementing writing captions activity on *Instagram*, the students will not only be more confident to exist in the virtual world but also improve their writing.

**Key Words:** teaching writing, classroom activity, innovative social media-based teaching, social media

## 1 Introduction

Innovative social media-based teaching currently has attracted researchers and practitioners. There are some studies conducted to investigate the effects of the innovative social media-based teaching towards EFL (English as a Foreign Language) students’ writing skills. A classroom action research done by Cahyono (2011), for instance, reveals that the use of *Facebook* enhances the skill in writing English essays. This study combines the traditional face-to-face mode of teaching with the innovative social media-based teaching. Twenty two second-year students of the English Department of State University of Malang, the sample of the study, are required to post their six types of essay on their *Facebook* accounts after they conduct some steps of writing in the classroom. The performance of the students over the six types of essays shows that all of the students achieve score over 77%, which means that they are considered successful. Moreover, most of the students find out that the essays they publish on *Facebook* are responded positively because they are encouraged to do their best in writing as their essays can be read by other *Facebookers*.

In the same rhythm with Cahyono (2011), Ilonasbonia and Syafei (2013) conduct a classroom action research on the innovative social media-based teaching in order to overcome teachers’ problems dealing with students, media, and technique of teaching when they are teaching writing for EFL students. Genre based approach is applied in this research. In Building Knowledge of Field (BKoF), the teacher explains the topic the students are going to write. Next, the teacher gives an example of a tweet containing the topic that has been discussed before and asks the students to do so with their own sentences on their *Twitter* accounts in Modeling of Text (MoT). The teacher also asks the students to tweet a particular *hashtag* (#) with their sentences. In Joint Construction of Text (JCoT), the teacher has the students work in groups to write a paragraph and tweet it on their

*Twitter* accounts. The last step is Independent Construction of text (ICoT) where the students tweet their own paragraph. Tweeting their writing on their *Twitter* accounts, the students feel more motivated in learning English, especially writing, so they can improve their writing in English.

If Ilonasbonia and Syafei (2013) conduct a classroom action research using *Twitter* as a medium to teach writing, Ahmed (2015) conducts an experimental research with a pretest-posttest design to investigate the effect of *Twitter* on EFL writing and whether *Twitter* has an effect on ideas, content, organization, voice, and style. The level-four students of English writing class studying in the college of Science and Arts in a female branch of Qassim University are the sample of the study. The class is divided into two groups: Experimental and Control Groups. The students in the experimental group are taught using *Twitter*. On the other hand, the students in the control group are taught using the traditional method of teaching writing. The study shows that the experimental group outperforms the control group on the post-testing of writing.

In addition, Yunus and Salehi (2012) conduct a study on the innovative social media-based teaching for ESL (English as a Second Language) students. This study examines the use of *Tumblr* that is a micro blogging website allowing its users to post texts, images, videos, links, quotes and audios to their “tumbleblog” as a medium to improve secondary school students’ writing skills. Validated questionnaires are distributed to thirty teacher trainees from TESL undergraduate students in Universiti Kebangsaan Malaysia. The majority of the surveyed respondents state that *Tumblr* can be utilized as a medium to teach writing to enhance students’ writing skills. *Tumblr* helps the students to organize idea before they start writing, and it gets them to be involved in creative and critical thinking. The students can share ideas, thoughts, and some other materials via sharing link. Given a task to write essays on *Tumblr*, the students are also encouraged to have independent learning outside the class.

Regarding the results of the studies that have been mentioned above, it can be concluded that social media like *Facebook*, *Twitter*, and *Tumblr* can be utilized to improve the students’ writing skills. The students, moreover, feel more motivated to do their writing activities with their social media account since they more exist in the virtual world. However, there are not any researches conducted to use *Instagram* as a medium to teach writing. Generation Y living in the 21<sup>st</sup> Century, in fact, cannot live apart from this most popular social networking application in the world.

*Instagram* is a social networking application allowing its users to post their photos. It becomes more popular than other social networking applications because *Instagram* provides filters used by the users to transform an ordinary photo into something worth sharing without much effort. The users, moreover, can share their photos with their other social media accounts. A caption can also be composed in *Instagram* to describe a photo. Unlike *Twitter* allowing its users to tweet not more 140 than characters, the caption of *Instagram* is unlimited. A photo supported by a representative and informative caption triggers other users of *Instagram* to tap the photo twice, and it means that they like the photo.

Considering the strengths of *Instagram*, *Instagram* continues to grow in popularity. Generation Y cannot spend a day without posting one photo or more on their *Instagram* accounts. To attract their followers or other users to give like to their photos, they provide their photos with a good caption. Therefore, writing captions in *Instagram* becomes a concern among the students living in this generation. As a lecturer who knows students’ interest on *Instagram*, it is beneficial to utilize this social networking application to teach writing.

Teaching writing by utilizing *Instagram* can be implemented for the students of the English departments when they are taking the Paragraph Writing course or the Writing I course since the course has a role in introducing the students to writing paragraph. If the students are good in writing a paragraph, it will be easier for them to write an essay so then they are prepared as well as ready to write long academic texts such as term paper or thesis. In addition, writing a text larger than a paragraph as a caption of a photo in *Instagram* makes viewers reluctant to read the caption. A paragraph is sufficient to attract other users of *Instagrams* to give double taps on the photo because the caption describes the photo well.

## 2 Teaching Writing

One of ways to observe student's development in language learning is by asking them to produce, or in another word, use the language. When they produce the language, their lecturer will know the improvement as well as their weakness in learning process. Productive skills in language learning include speaking and writing. Speaking activity will promote the students' abilities to use the language verbally, while writing activity can show how the students perform the language in a written form.

This paper suggests some teaching writing activities which are conducted using process-based approach proposed by Sebranek, Kemper, and Meyer (1999) and utilizing *Instagram* as a medium to teach writing. This approach contains five stages: prewriting (planning), writing (writing the draft), revising, editing, and publishing. By focusing the class activity on the process instead of the product of writing, the students' difficulty can be identified directly. Harmer (2007:326) supports this notion by stating that implementing process-based approach in teaching writing will help students to achieve various writing skills, including organization, content, grammar, vocabulary, and mechanics.

In the implementation of process-based approach to teach paragraph writing, *Instagram* is applied in the publishing stage following the other stages. The students are required to post a photo and write a caption in the form a paragraph based on types of paragraph their lecturer has decided. In each of the stage in process-based approach, the lecturer should carefully design activities which eventually draw good results on the students' writings. For example, the lecturer assists the students in brainstorming the topic during pre-writing task or gives feedback in each editing and revising phases. Lecturer's involvement will also help the students to overcome problems they encounter during the process.

In addition to employ the process-based approach in teaching writing, a lecturer who has a writing class should also set several writing tasks throughout a semester. The tasks should have clear objectives and are meaningful for the students. Ur (2012:157) suggests some criteria in planning or selecting writing task which are:

- **Interest.** The task should be motivating and stimulating.
- **Level.** The language required should be appropriate to the level of the class.
- **Relevance.** At least some of the tasks should be similar to the kinds of things students may need to write themselves or in the future.
- **Simplicity.** The task should be easy to explain. Often the provision of a model text can help to clarify.

Using *Instagram* as a part of class activity is indeed one of ways to get the students' interests. By taking advantages from this widely known platform, the lecturer can help the students improve their writing skills as well as trigger their creativity to make their writing matches well with the picture it is attached to. Also, the Paragraph Writing course has yet required the students to make complex writing thus the language use is still at the basic level. Since this course aims at improving students' ability in making correct sentences and building coherent within a paragraph, asking them to make a paragraph accompanied with a relevant picture will make it suit the objectives. The ability to make cohesive and coherent paragraph will help the students in making longer essay later on. Moreover, writing a paragraph and finding a good picture to accompany it are generally easy and fun.

## 3 Practical Steps In Using *Instagram* To Teach Paragraph Writing

In the Paragraph Writing course, *Instagram* is applied only in the last stage of teaching writing, which is the publishing stage. Therefore, to apply the previous stages of teaching writing,



traditional face-to-face mode of teaching is also conducted. Prewriting (planning), writing (writing the first draft), revising, and editing are done in the classroom. In other words, the course combines the traditional face-to-face mode of teaching with the social innovative media-based teaching.

Since the Paragraph Writing course commonly has 4 credits and is given for 16 weeks containing 32 meetings, a lecturer teaching the course has to divide the meetings for some topics before implementing teaching writing paragraph. The topics that can be applied in the course are basic writing knowledge (types of sentences and sentence problems), theories of writing (topic sentence identification, paragraph structure, unity and coherence, and types of supports), and types of paragraphs (descriptive, narrative, process, comparison-contrast, and cause-effect paragraphs). The lecturer, moreover, needs to determine class activities in each meeting, whether they will apply the traditional face-to-face mode of teaching or the innovative social media-based teaching.

At the beginning of the course, the lecturer can teach basic writing knowledge to the students including Subject Verb Agreement and Types of Sentences. After mastering how to make correct sentences, the students learn how to write a good paragraph. In this meeting, the lecturer introduces the organization of paragraph, and the students have to be able to identify main idea, supporting details, and conclusion of a paragraph as well as arrange sentences in a paragraph in a logical order and a smooth connection at the end of the meeting. Next is the time for the students to practice writing a paragraph. They have to write a paragraph according to a type of paragraph required by the lecturer. Writing the paragraph, the students have to do the five stages of writing a paragraph one by one by. Following are the five stages of writing a paragraph that illustrate the combination of the traditional face-to-face mode of learning and the innovative social media-based learning.

### **3.1 Stage 1: Prewriting (Planning)**

The first stage of writing a paragraph is making an outline. This stage is done in the classroom. The lecturer should share knowledge about the generic structure and the language feature of a type of paragraph the students are going to write before asking the students to make an outline of a paragraph. A particular theme, furthermore, should be given to the students so that they will not be confused of what they should write. It is suggested to give a familiar theme because it can quickly activate the students' abundant background knowledge which can help them in making the outline. The familiar theme also makes the students easier to capture a photo which is later posted with their writings in their own *Instagram* account. For instance, the lecturer can have the students write a paragraph about family when the topic of the meeting is Descriptive Paragraph.

### **3.2 Stage 2: Writing the first draft**

During the next meeting, the students develop their outlines to be a paragraph. This activity is conducted in the classroom with the monitor of the lecturer. Besides monitoring the students' works, the lecturer is ready to help the students whenever they find any difficulties. In addition, the lecturer should check whether or not the generic structure and the language feature used by the students are correct. When the students are developing their outlines to be a process paragraph, for example, the lecturer checks if they students use sequencing words to show a process or not.

### **3.3 Stage 3: Revising**

After composing a paragraph in the previous meeting, the students need to let others review their works. It is the lecturer or their peer the one who reviews the students' writings in the classroom. Since Boas (2011: 29) states that peer review brings some advantages for the students since it makes the writing process interactive and collaborative, gives the writer a sense of audience, allows feedback that is different from the teacher's, and orients the students to accept constructive criticism, it seems like the peer review is worth conducting in this stage. However, the peer review

still needs guidance and monitor from the lecturer so that the students obtain correct feedback helping the students to have a better writing.

Peer review can be done by giving a checklist sheet containing information that should be observed when the students read their friends' works. The checklist sheet may also be the simplified version of scoring rubric used by the lecturer. Brown (2004:277) suggested some guidelines that should be paid attention to in implementing peer review or peer assessment. The first important guideline is that telling students the purpose of the assessment. Some students may feel uncomfortable if they are asked to review or assess their friends' works. By showing the purpose in advance, they will have time to adjust with the activity. Brown also states that teachers or lecturers should define the task(s) clearly and make sure that students know exactly what they need to do. In addition, review or assessment criteria should be clear to obtain objective results. The last instruction which Brown has suggested to follow is to ensure that there is a follow-up task after the peer review or peer assessment is conducted. The peer review activity will not be any help if there is no meaningful activity after they are finished giving the review.

### 3.4 Stage 4: Editing

In this stage, the students are ready to edit their writings by considering the feedback they have obtained from their peers. This activity is a traditional face-to-face mode of teaching which means that the activity is conducted in the classroom. When the students have finished editing their writings, the lecturer can have the students to prepare to post a photo supporting their writings and write their writings as a caption in their *Instagram* account.

### 3.5 Stage 5: Publishing

The last stage of writing a paragraph is publishing. It is the only stage that conducts the innovative social media-based teaching, and it is time for the students to post a photo and write the caption of the photo with the paragraph the students have composed in the previous stages in their *Instagram* accounts. In order to make easier to find the students' writings, the lecturer can sign up a new account for the class and ask the students to tag the class account on their photos. In the class account, furthermore, the lecturer can post an example of assignment or repost some students' works which get a good score. Reposting the students' works on the class account can motivate the students to write the best paragraph because they want their works to be reposted so that they become more famous in *Instagram*. The other way to find the students' works is by using *hashtag* (#). *Hashtag* is a word or phrase preceded by a hash mark (#) used on social network to identify a keyword or topic of interest and facilitate a search for it. Before the students post their works, the lecturer requires the students to write a particular *hashtag* at the end of their caption. For example, the lecturer asks the students to write #ParagraphWritingFamily and #ClassC at the end of their captions. The lecturer only writes those *hashtags* on *Search* feature in *Instagram*, and they will easily find the students' works. All in all, the categories of topics, activities, and modes of learning for the Paragraph Writing course are shown in Table 1 below.

**Table 1. Topics, Activities, and Modes of Learning in Paragraph Writing Course**

Meetings	Topics	Activities	Mode of Learning
1	Subject Verb Agreement	Lecturing	Face-to-Face
2	Types of Sentences	Lecturing	Face-to-Face
3	Organization of Paragraph	Lecturing	Face-to-Face
4-6	Descriptive Paragraph	Drafting	Face-to-Face
7		Publishing	Online/ <i>Instagram</i>

8-10	Descriptive Paragraph	Drafting	Face-to-Face
11		Publishing	Online/ <i>Instagram</i>
12-14	Narrative Paragraph	Drafting	Face-to-Face
15		Publishing	Online/ <i>Instagram</i>
16-18	Narrative Paragraph	Drafting	Face-to-Face
19		Publishing	Online/ <i>Instagram</i>
20-22	Process Paragraph	Drafting	Face-to-Face
23		Publishing	Online/ <i>Instagram</i>
24-26	Compare-Contrast Paragraph	Drafting	Face-to-Face
27		Publishing	Online/ <i>Instagram</i>
28-30	Cause-Effect Paragraph	Drafting	Face-to-Face
31		Publishing	Online/ <i>Instagram</i>
32	Free Paragraph	Publishing	Online/ <i>Instagram</i>

#### 4 Assessment

Since this paper proposes teaching paragraph writing by referring to process-based approach, detailed assessment should also be conducted in order to identify which skill in writing that students find it difficult. Analytic scoring rubric suits best with this objective because it scores the major elements in writing. There are five categories of writing given by Brown (2004:244), and each category is rated from 1 – 20. Thus, the maximum score of the combined categories will be 100. Some adaption is made to match the writing categories suggested by Brown with the activities given in this paper. The categories are:

- **Organization.** The assessment criteria include introduction, body, and conclusion of the paragraph.
- **Logical development of ideas.** The assessment includes the presentation of each topic in the paragraph (content).
- **Grammar.** The assessment includes the use of correct grammar, articles, verb forms, preposition, and so on.
- **Punctuation, spelling, and mechanics.** The assessment includes the correct use of English writing conventions: capitals, punctuation, and spelling.
- **Style and quality of expression.** The assessment for this category includes the use of precise vocabulary, e.g. sequence words for process text, or simple past for narrative text.

Table 2. Scoring Rubric for Paragraph Writing

Criteria	20 – 16 Excellent	15 – 11 Good	10 – 6 Fair	5 – 1 Unacceptable
<b>Organization</b>	Main idea is stated, leads to supporting details, and is completed with concluding sentence.	Main idea is stated, but it does not lead to supporting details. However the writer states the concluding sentence.	Main idea is not clearly stated thus it leads to unorganized supporting details. However the writer still concludes the paragraph with concluding sentence.	Main idea is not stated thus it is unclear which sentence is the topic sentence and which is the supporting, and there is no concluding sentence.
<b>Logical development of ideas</b>	The topic is expressed thoroughly in the paragraph; the coherent and cohesive	The topic is addressed but misses some points; the ideas can be more developed;	Development of ideas is not compete and the paragraph is somewhat off topic; the coherent	Ideas are incomplete and the paragraph is written in hurried; no effort to show

	among sentences are clear.	the coherent and cohesive among sentences can still be identified.	and cohesive among sentences are unclear	coherent and cohesive among sentences.
<b>Grammar</b>	Grammar is used perfectly: correct use of tenses, preposition, modals, articles, and verb forms.	Proficiency of grammar is good, and some grammatical problems do not influence the flowing of ideas although readers are still aware of them.	Ideas can still be delivered to readers, but the grammatical problems interfere the communication, and grammar review is needed.	There are severe grammar problems which interfere greatly on the flowing of the ideas, and sentences are difficult to understand.
<b>Punctuation, spelling, and mechanics</b>	English writing conventions are used correctly: all needed capitals, punctuation and spelling.	There are some problems with writing conventions or punctuation, and occasional spelling errors.	General writing conventions are used, but some errors still occur. Spelling problems distract readers and punctuation interferes with ideas.	There are serious problems with writing conventions, severe spelling and punctuation problems as well as obvious capital missing.
<b>Style and quality of expression</b>	There are language features related to the topic and precise usage of vocabulary and.	It shows attempts to use varied vocabulary, and language features still related to topic.	There are some vocabulary misused and some errors in language features related to topic.	There is poor expression of ideas due to lack of vocabulary, problems in vocabulary, not showing any language feature related to topic.

Another point that should also be taken into account during the assessment is the photos posted by students in *Instagram*. Although it is not specifically scored in the scoring rubric, the picture should represent the paragraph that has been written. The relevance between the paragraph and the picture posted may increase the presentation point of the *Instagram* posts.

## 5 Conclusion

This paper has proposed a possible teaching medium that can be implemented in teaching paragraph writing. *Instagram* is one of some well-known social networking applications enabling its users to post photos and attach a short text to describe the pictures. There are also other possible social media that can be utilized to teach different genres of writing, e.g. *Facebook*, *Twitter*, *Tumblr*, and blogs. Nevertheless, using *Instagram* as a learning medium can show that writing class is not only benefitted the students academically but also virtually. Lecturers and other teachers can get an inspiration from this paper to vary their teaching media by using online platforms to teach writing. It is essential for educators who live in a modern era to maximize the use of technology. Besides making it simpler and more flexible, utilizing technology in the classroom will make the teaching learning process more interesting and challenging.

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# The Study of Ruthenium Dyes Endowed with Alkyl Chain for DSSC Sensitizer

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## ABSTRACT

Two kinds of ruthenium dyes endowed with alkyl chain, TG6 and Z907 have been used as sensitizer for dye sensitized solar-cells (DSSCs). The cells composed of nanoparticle ZnO which has rod-like structure as a photoelectrode and were coupled with two kinds of redox shuttle: triiodide/iodide and cobalt-bipyridyl(II)/(III) as electrolyte composition. The cell that was sensitized by TG6 and coupled with triiodide/iodide redox shuttle show a better result (reached a Power Conversion Efficiency (PCE) of 2.69%) rather than one that was sensitized by Z907 and coupled by the same redox shuttle (reached a PCE of 2.16%). On contrary, for the cells that were coupled by cobalt-based redox shuttle, Z907 sensitizing shows a better result (reached a PCE of 1.72%) compare to TG6 one (reached a PCE of 1.32%). The absorption measurement in the UV-Visible range shows that the TG6 has a boarder spectrum compare to that one of Z907. This result explains that TG6 cells show a better performance compare to that one Z907 when coupled with triiodide/iodide redox shuttle. But the orientation of alkyl chain on TG6 makes a hindrance for cobalt species to diffuse through the semiconductor pores.

**Keywords:** dye sensitized solar-cell, ruthenium dye, TG6, Z907, ZnO

## 1. Introduction

Dye sensitized solar cells (DSSCs) still attract the researchers to study since its phenomenal result on 1991 by Grätzel et. all., who have prepared the cell with 79% of efficiency. Grätzel cell composed of mesoporous TiO<sub>2</sub>, sensitized by ruthenium dye, as semiconductor and coupled with I<sub>3</sub><sup>-</sup>/ I<sup>-</sup>. Nowadays, many modifications have been carried out to the DSSC components to get a better performance. For instance, performing structure modification of oxide semiconductor to have large pores so they can facilitate large surface area for dye adsorption [1], the large pores of oxide semiconductor is also beneficial for DSSCs that are coupled with cobalt-based electrolyte to facilitate the diffusion of redox couple [2]. The other modifications are focus on the sensitizer dyes. For

instance, performing structure modification of the dyes to have a boarder absorption spectrum in UV-visible region [3,4], co-sensitization by two or more dyes also has been carried out in order to broaden the absorption spectrum and make them more panchromatic [5]. The highest cell efficiency was reached by the device that was prepared by Mathew et. al. The device composed of TiO<sub>2</sub> sensitized by porphyrin dye as photoelectrode and coupled by cobalt based electrolyte. The cell reached efficiency of 13% . They substituted the I<sub>3</sub><sup>-</sup>/I<sup>-</sup> redox-couple with Co<sup>2+/3+</sup> due to the reason that the use of I<sub>3</sub><sup>-</sup>/I<sup>-</sup> redox-couple will provoke the corrosion. Moreover, potential redox of I<sub>3</sub><sup>-</sup>/I<sup>-</sup> has limited the value of open circuit voltage (V<sub>oc</sub>) of the cell [6].

The utilization of cobalt redox-couple as redox shuttle in DSSC requires a sensitizer that have a long alkyl chain to restrain charge recombination at the semiconductor and electrolyte interface [7-9]. Two kinds of ruthenium dyes have been studied to be used as sensitizer for DSSCs. They are TG6 and Z907. Both of them have long alkyl chain so has a promising potential to be used as sensitizer for cobalt-based DSSC. The previous report has shown that Z907 was suitable for sensitizing TiO<sub>2</sub> photoelectrode coupled with cobalt-based electrolyte [8]. TG6 also showed the best performance for ZnO-based DSSC in couple with I<sub>3</sub><sup>-</sup>/I<sup>-</sup> redox-couple. The efficiency was reported at the value of 5.3% [10]. The high value of coefficient extinction molar of TG6 is one of the reasons that TG6 show good performance as sensitizer for DSSCs [11]. In this study we compared the utilization of both dyes for ZnO-based DSSCs. We want to elaborate the cell performance that sensitized by both dyes and coupled with I<sub>3</sub><sup>-</sup>/I<sup>-</sup> and [Co(bpy)<sub>3</sub>]<sup>2+/3+</sup>. We also performed the computational study to figure out the structural optimization of the dyes in order to support our experimental results.

## 2. Experimental Section

### 2.1 Film preparation and their characterization

ZnO nanoparticle were obtained from the *Laboratoire des Sciences des Procédés et des Matériaux, Université Paris 13, Villetaneuse, France*, with the synthesis procedure as mentioned in Ref [11,12]. 1 g of ZnO, 4.06 g of terpeneol, 5 mL of ethanol were mixed together under vigorous agitation. Ethylcellulose solution in ethanol then was added into TiO<sub>2</sub> solution. For TiO<sub>2</sub> paste, ethylcellulose solution composed by 281 mg of ethyl cellulose (EC) powder (5–15 mPa.s), 109 mg of EC (30–50 mPa.s) and 4.5 mL of ethanol. The two solutions were then mixed and sonicated several times using an ultrasonic horn. Ethanol and water were subsequently removed from the solution in a rotary-evaporator at an initial temperature of 58 °C in order to create a viscous paste.

The photoelectrodes were prepared by spreading the paste on FTO glass substrate. The FTO glass substrates (TEC15, Pilkington) were treated before they

used. They were cleaned with soap and rinsed with distilled water. They were then treated in acetone in an ultrasonic bath in acetone for 5 min and in ethanol for 5 min. The substrates were dried and placed in furnace at 450°C for 30 min.

A ZnO oxide paste was spread on the FTO glass substrates by the doctor blading technique relaxed under an ethanol atmosphere for at least 5 minutes and dried at 125°C for 5 min. The step was repeated several times in order to achieve the desired film thickness. No scattering layer was used for all the investigated cells.

The film morphologies were examined with a high resolution Ultra 55 Zeiss FEG scanning electron microscope (SEM) at an acceleration voltage of 10 kV. Their thicknesses were measured with a Dektak 6M stylus profiler. For the film structural characterizations, a high-resolution X-ray diffractometer Siemens D5000 operated at 40 kV and 45 mA using the Cu K $\alpha$  radiation with  $\lambda = 1.5406 \text{ \AA}$  was used. The FTIR curves were measured with a Tensor 27 apparatus from Bruker. The investigated samples were mixed with dry KBr, pressed as a pellet and measured in a transmission mode. The optical film properties (total transmission and total reflection) were recorded with a Carry 5000 UV-Vis-NIR spectrophotometer equipped with an integrating sphere.

## **2.2 Solar cells preparation and their characterizations**

The composite layers were immersed upon cooling in a sensitizer dye. They were two kinds of sensitizer dyes: (1) 0.3 mmol.L<sup>-1</sup> Z907 dye in acetonitrile and (2) 0.3 mmol.L<sup>-1</sup> TG6 in CH<sub>2</sub>Cl<sub>2</sub>. For the counter electrode preparation, FTO glass substrates were cleaned by ultrasound in acetone and ethanol for 5 min each. Then, they were treated in a furnace for 30 min at 450°C to remove organic contaminants. The Pt catalyst was deposited on the FTO glass by coating with a drop of H<sub>2</sub>PtCl<sub>6</sub> solution (6 mg Pt in 1 mL ethanol) subsequently heated at 400°C for 20 min. This step was repeated once. The two electrodes were sealed with a 50  $\mu\text{m}$  hotmelt spacer (Surlyn, DuPont) and the internal space was filled with the electrolyte through a hole drilled in the counter electrode, which was subsequently sealed with Surlyn and an aluminum foil. The electrolyte employed was a solution of 0.6 mol.L<sup>-1</sup> 1,2-dimethyl-3-propylimidazolium iodide (DMPII), 0.1 mol.L<sup>-1</sup> LiI, 0.05 mol.L<sup>-1</sup> I<sub>2</sub>, 0.10 mol.L<sup>-1</sup> guanidiniumthiocyanate and 0.5 mol.L<sup>-1</sup> 4-tertbutylpyridine in a mixture of acetonitrile and valeronitrile (85/15 volume ratio).

The I-V curves were recorded by a Keithley 2400 digital sourcemeter, using a 0.01 V.s<sup>-1</sup> voltage sweep rate. The solar cells were illuminated with a solar simulator (Abet Technology Sun 2000) filtered to mimic AM 1.5G conditions. The illuminated surface was delimited by a black mask. The power density was calibrated to 100mW.cm<sup>-2</sup> by the use of a reference silicon solar cell.



### 2.3 Computational section

To figure out the molecule orientation, we performed the structure optimization using the Gaussian 09 program package [13] with the B3LYP exchange-correlation functional [14-16] and the 6-311G\* basis set for C, H, O, N and S atoms [17,18] together with the Los Alamos effective core potential LanL2DZ for Ruthenium and Cobalt [19,20]. Solvation effects were evaluated by the conductor-like polarizable continuum model (C-PCM) [21,22], using acetonitrile as a solvent for Z907; and dichloromethane for TG6.

### 3. Results and Discussion

The I-V measurement results of the cell are presented in Table 1. We did the test of four kinds of cell, TG6\_I; TG6\_Co; Z907\_I and Z907\_Co.

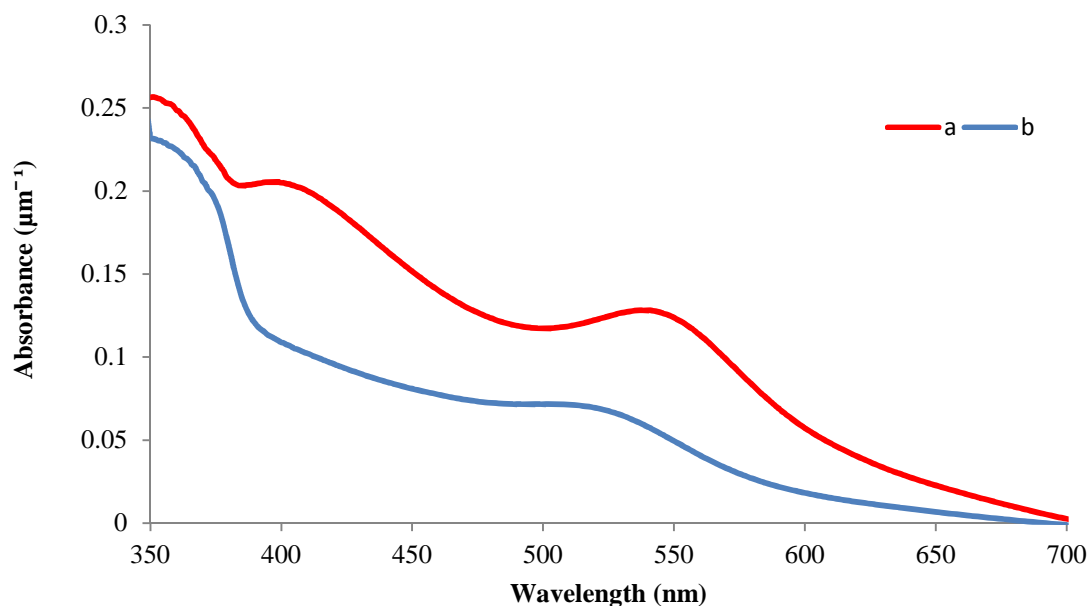
**Table 1.** The I-V measurement result of the cells

Cell	Sensitizer	Redox shuttle	Thickness / $\mu\text{m}$	$V_{oc}$ / V	$J_{sc}$ / $\text{mA.cm}^{-2}$	FF	$\eta$ / %
TG6-I	TG6 in $\text{CH}_2\text{Cl}_2$	$\text{I}_3^-/\text{I}^-$	10.7	0.50	7.24	70.0	2.69
TG6-Co	TG6 in $\text{CH}_2\text{Cl}_2$	$[\text{Co}(\text{bpy})_3]^{2+/3+}$	10.6	0.35	5.86	64.6	1.32
Z907-I	Z907 in acetonitrile	$\text{I}_3^-/\text{I}^-$	10.8	0.54	5.72	70.50	2.18
Z907-Co	Z907 in acetonitrile	$[\text{Co}(\text{bpy})_3]^{2+/3+}$	9.3	0.40	7.05	60.86	1.72

Table 1 presents that TG6-I cell has a better PCE compare to that of Z907-Co. The  $J_{sc}$  of TG6-I cell is higher compare to Z907-I, on contrary its  $V_{oc}$  is slightly lower. The higher of TG6-Co  $J_{sc}$  compare to Z907 one can be explained by the result of absorption spectrum measurement. The spectrum of TG6 compare to Z907 is shown in Figure 1. Their absorbance spectrum shows that TG6 has a broader spectrum compare to Z907. This result is supported by the results of the dye adsorbed concentration on the layer for both systems that confirm the amount of adsorbed dye on ZnO for both dyes are almost the same. The adsorbed concentration of TG6 and Z907 are 56 and 52 mM, respectively.

When both cell were coupled with  $[\text{Co}(\text{bpy})_3]^{2+/3+}$ , the I-V measurement as shown in Table 1 show a different trend results. The Z907-Co cell has a  $J_{sc}$  and  $V_{oc}$  higher value than TG6-Co lead to a higher PCE. Moreover Z907-Co  $J_{sc}$  value is significant higher compare to TG6-Co one. We have already confirmed that the dye concentration of both dye on the ZnO layer are about the same and TG6 have a boarder absorbance spectrum in UV-Vis area compare to that of Z907. By considering (1) both cell has an about the same of layer thickness, (2) the potential

standard reduction of TG6 (1.02 V [11]) and Z907 (0.93 V [23]) are not different a lot, we suggest that the higher  $J_{sc}$  of Z907-Co cell is influenced by the ease of redox-coupled transport on Z907-Co cell compare to TG6-Co cell.

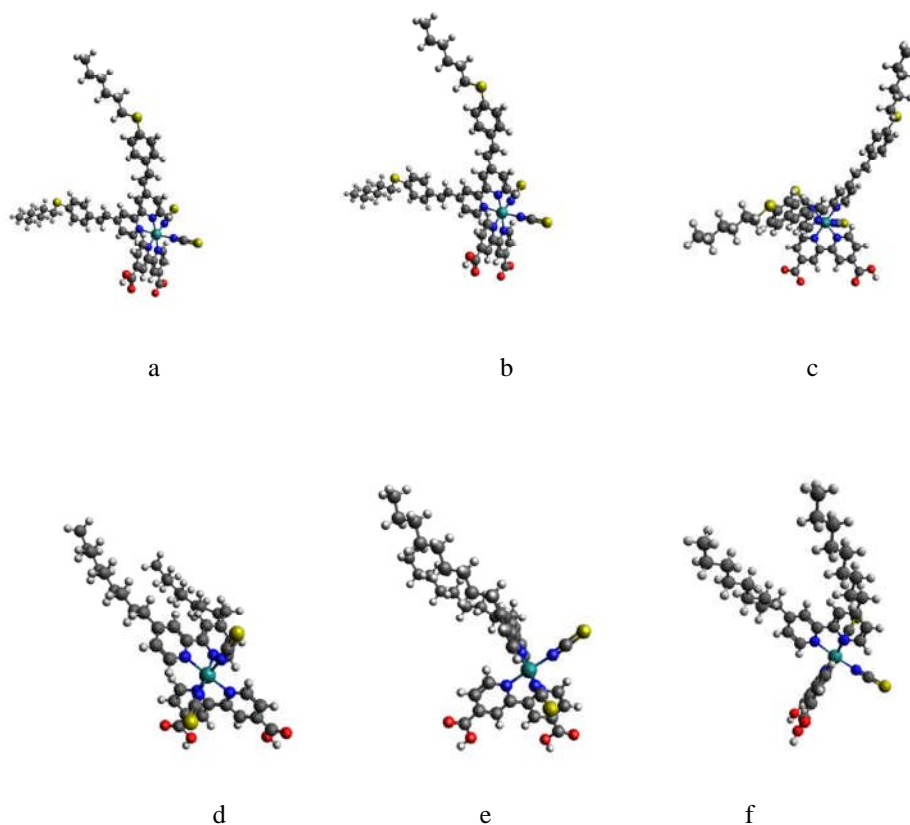


**Figure 1.** Absorption spectra of TG6 and Z907 sensitized layer of ZnO in visible range

To support this suggestion we did the computational simulation to figure out the geometry orientation of both dyes. To have a lower computational cost, we did not simulate the dye adsorption on the ZnO surface, but we fixed the geometry of the anchoring sites of the dyes. The optimization geometry results for both dyes in several points of view are present in Figure 2.

Figure 2 clearly point out that TG6 have structure more bulky compare to Z907. The alkyl chains on TG6 tend to separate each other in opposite direction, while ones on Z907 have an orientation in the same direction. The molecule orientation of TG6 makes a hindrance for cobalt redox species to diffuse through the sensitized oxide pores. The alkyl chains attached to the dye have an important role in cobalt based DSSC. They have a role to avoid charge recombination between redox species and oxide surface [2]. But, supported by our results we point out that we have to consider carefully the alkyl chain geometry. Too long alkyl chain gathered for instance, with bulky side group or less flexible will make the electrolyte species difficult to transport through the sensitized oxide pores. As a result, the electron transport will decrease and observed by the  $J_{sc}$  decrease of the cell.

The more accurate computational study are overt to support the results, for instance the finding out the optimization geometry of both dye on the ZnO, more over the dynamical simulation will be interesting to observed the electrolyte species travel and interaction through the sensitized pores.



**Figure 2.** The optimized geometry of (a-c) TG6 (d-f) Z907

#### IV. Conclusions

Employing TG6 and Z907 as a sensitizer for DSSC has different result in  $I_3^-/I^-$  based- and cobalt based electrolyte. When coupled with  $I_3^-/I^-$ , the electronic properties of the dye make an important consideration to explain the cell performance. Whereas when coupled with  $[Co(bpy)_3]^{2+/3+}$ , the molecule geometry in this case the alkyl chain orientation on the molecule can be another consideration to explain the cell performance.

#### V. Acknowledgements

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# Using Animation Clips to Improve the Listening Ability of the Tenth Grade Students Majoring in Animation

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## ABSTRACT

A classroom action research was conducted to address the problems in listening faced by tenth grade students from Animation department in a vocational high school in Malang. Listening is a receptive skill which is needed to support students' productive skills, speaking and writing. However, in this vocational high school, tenth graders mostly face difficulty in listening skill because of the time limitation and the fact that listening is a new thing for them. Especially in animation department, most of the students are visual learners who feel it hard to listen without having body language or other clues. Reflecting upon the problem found in the preliminary research, this study to improve students' listening ability through animation clips was conducted in a collaborative classroom action research. Referring to Dale's Cone of Experience, animation clips is believed to be able to help them due to the applicable visuals in it. Through well-prepared media and procedures, the results does not only show that animation clips could improve students from animation department listening ability but also show that the students gave a good response toward the employment of animation clips.

*Key Words:* listening ability, Animation Clips, vocational high school.

## 1. Introduction

The students in this classroom action research showed poor listening ability and low scores in their listening. The students' listening scores in the preliminary study proves the statement before since from 33 participants, only ten students got mark above the minimum standard set by the school. Various reasons have been stated about why students feel that listening is difficult. The first reason is that the fact that they were still in the tenth grade. Listening activity can be considered as new thing for them since not all of them got the listening materials before in their junior high schools. In short, it happens because English is not their first language, so they have to deal with a lot of difficult input, such as speakers' expression, volume and speed in speaking, diction, and the culture background that is inside the listening material (Sumiarsih, 2011:3). Time limitation also becomes one of the problems. Because of the changing of curriculum from curriculum 2006 to curriculum 2013, the students only have a meeting (2 x 45 minutes) for English subject in a week which is clearly hard to cover all skills at once especially listening skill which needs to be well prepared and lot of practice. In addition, it is the nature of Animation department students that they are visual learner. Thus having no visual to support their learning process will be hard for them.

Audio-visual media like animation clips can be a good media to help students to improve their listening ability. According to Dale's Cone of Experience (cited in Bilash, 2009), in passive learning, students tend to remember only 20 percent of what they hear while they will remember 50 percent of what they see. Therefore, it is good to use audio visual media, which is media that can be seen and listened, to introduce listening activity to the students. Here, animation clips used as an alternative medium in listening activity to help

students to improve their ability in listening skill because it offers a fun way in introducing listening for beginner. Animation clips is a short film which contains a moving pictures in it. It can be found easily through the Internet from *YouTube*, *Dailymotion*, *vimeo*, and many others. Since the vocational high school where the researcher conducted the study is SMKN 4 Malang which is an IT school, animation clips can be used easily in the teaching and learning process. Students do not need to go to the language laboratory to do a listening activity because each class already has its LCD projector to make it easy for teacher to use this media in the class. Moreover, there are Wi-Fi connections available inside the school which enables teacher to get the material anywhere and anytime.

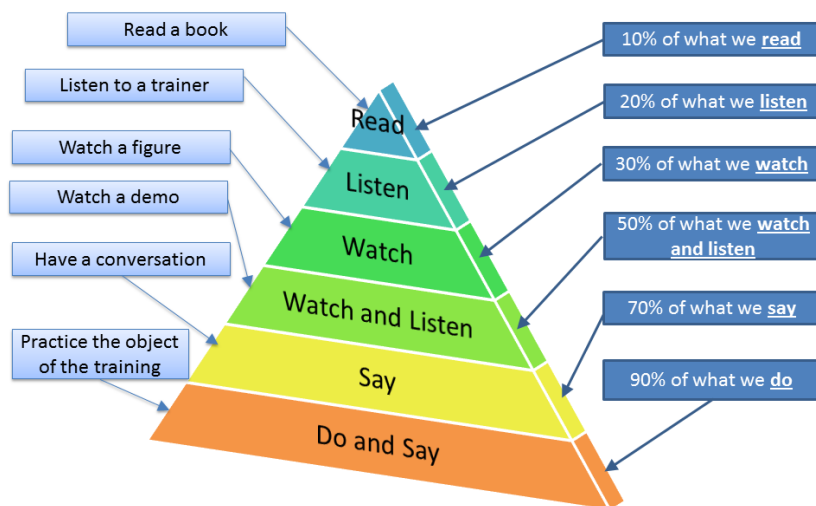


Figure 1 Dale's Cone of Experience

According to a previous study which is conducted by Stiviani (2012) on Using Animation Clips to Improve the Listening Ability of the Eight Graders of SMP Negeri 21 Malang, animation clips can be used as alternative media to improve students' listening ability which has positive feedback from the students. Another research done by Yassaei (2012) on his article entitled Using Original Video and Sound Effects to Teach English concluded that audio and visual media is a well-known way to create meaningful context for teaching English. Therefore, integrating audio visual media such as animation clips into lessons creates enticing visuals and a special interactive environment in the classroom. Considering the advantages of animation clips proved in the two studies, the researcher attempt to employ animation clips to improve the listening ability of tenth grade students majoring in animation in SMKN 4 Malang. In its attempt to employ animation clips, the study aimed to answer the following research question. "How can *Animation Clips* be used to improve the learners' listening ability?"

## 2. Research Method

Thirty-one tenth graders majoring in Animation participated in the study conducted at a vocational high school in Malang. The number of the students who became the subjects of this research was not the same as when the researcher conducted preliminary study which is thirty-three students. It happened because two of the subjects had a problem and barely went to school. The design of the study was a classroom action research. Classroom action research consisted of four stages: planning an action, implementing the action, observing the action and reflecting the action (Latief, 2012:145).

In planning the action, there were four steps done by the researcher. They were preparing research instruments, lesson plans, media, procedure in using animation clips, and

criteria of success. Since the tenth graders students in SMKN 4 Malang used the new curriculum, the lesson plans were arranged based on 2013 curriculum. The researcher decided that the success of this research would be gained if students' mean score had to be higher than 85 and if students' response toward the implementation was good enough or more than 61% of the students showed positive reaction toward the implementation of animation clips.

In the implementation stage, the researcher implemented the action and the real teacher of the class acted as the observer who observed the action. The implementation was done in two meetings on 5 March 2014 for individual activity and 19 March 2014 for group activity. The media used were animation clips of Indonesian and Western folktales. *Malin Kundang* (Indonesian folktale) was used for students' individual activity while *The Little Dutch Boy* (Dutch folktale by Peter Miller) was used for students' group activity.

The researcher used three-phase technique in implementing animation clips. In the pre-listening, the students' background knowledge about a narrative text and its language features was activated by question and answer section. Then, the teacher explained the difficult words that might be found in the animation clips. In the while-listening activity, the students listened the audio of animation clips only to get general idea of the animation clips. Then, students viewed and listened to the animation clips while doing the worksheet individually in the first meeting and in group in the second meeting. In the post-activity, the students discussed and reviewed the content of the animation clips.

The researcher had prepared some instruments to collect the data. The research instruments consisted of the listening test, observation checklist, and field notes. The listening test was used to know the progress of the students' listening ability after using animation clips in the listening activity. The test was conducted on 26 March 2014 after the implementation. The observation checklist was used to check students' response toward the implementation of animation clips. The field note was used to give comments and suggesting for improvement in the future.

After observing the action, things that researcher needed to do were analyzing, reflecting and interpreting the data. After analyzing the data, the researcher came to data interpretation where the researcher could see whether the criteria of success have been achieved or not. Here, the mean of the students' score were compared and the researcher could see the improvement.

### 3. Research Findings

#### 3.1 The Result of Students' Listening Test

The students' listening test was administered at the third meeting of the Cycle. The test was intended to know the progress of the strategy applied, to know how well the students' listening ability was after the implementation of animation clips. The test consisted of 30 items. Those items were divided into three parts: WH-questions (5 items), true and false (20 items) and cloze test (5 items). The session of the test took 45 minutes. Forty-five minutes were considered sufficient time to answer 30 items of the listening test.

The students' answers were scored by one of the English teachers in SMKN 4 Malang, Dra. Wiwik Niarti, to prove the liability of the test.

**TABLE 1** The Result of Listening Test Compare to Preliminary Test

Description	Preliminary test score	Listening test
The highest score	85	99
The lowest score	35	61
The mean score	65.2	85.4



Table 1 shows that students' score increase from the preliminary test to the listening test. The mean score in preliminary test was 65.2 while the mean score in the listening test was 85.4. It means that students' mean score increase 20.27 point greater than the previous score in the preliminary test.

In addition, there was also improvement in students' scores. There were 25 students (80.65%) who achieved scores in the good category ( $\geq 75$ ) and 6 students (19.35%) who achieved score in the "poor" category ( $< 75$ ) compared to the preliminary study showing that there were 10 students (30.30%) who got scores in good category ( $\geq 75$ ) and 23 students (69.70%) who got scores classified as "poor" category ( $< 75$ ). It can be analyzed that most of the students got higher scores than the previous score that they obtained in the preliminary study.

### 3.2 Students' Response to the Employment of Animation Clips

From the data presented in the observation checklist, it was found that in the first and second meeting most of the students showed a good response in pre-, while-, and post- of the listening activity using animation clips. The indicators of the positive response are presented in table 2.

**TABLE 2** Students' Response to the Employment of Animation Clips

Lesson Stages	Indicators Shown in Meeting I	Indicators Shown in Meeting II
Pre-listening	<ul style="list-style-type: none"> <li>- Around half of the students gave good response during the class discussion on difficult words in animation clips.</li> <li>- Most of the students understood the instruction on how they would do the listening activity using animation clips.</li> <li>- Around half of the students answered enthusiastically the question from the teacher to show that they got the general idea from the audio of the animation clips.</li> </ul>	<ul style="list-style-type: none"> <li>- Most of the students gave a good response during the class discussion on difficult words in animation clips.</li> <li>- Most of the students understood the instruction on how they would do the listening activity using animation clips</li> <li>- Around half of the students answered enthusiastically the question from the teacher to show that they got the general idea from the audio of the animation clips</li> </ul>
While-listening	<p>Students looked comfortable and seemed to enjoy viewing animation clips. It was indicated by students attitude as follows:</p> <ul style="list-style-type: none"> <li>- Most of the students understood the content of the listening material through animation clips</li> <li>- Around half of the students were less distracted when they did the listening activity (they were not drawing during the listening activity).</li> <li>- Around half of the students worked independently in individual activity.</li> </ul>	<p>Students looked comfortable and seemed to enjoy viewing animation clips. It was indicated by students attitude as follows:</p> <ul style="list-style-type: none"> <li>- Most of the students understood the content of the listening material through animation clips.</li> <li>- Most of the students were less distracted when they did the listening activity (they were not drawing and doing other stuffs during the listening activity).</li> <li>- Around half of the students were able to work in group in group activity.</li> </ul>
Post-listening	<ul style="list-style-type: none"> <li>- Most of the students gave positive feedback to the implementation of animation clips in the discussion section.</li> </ul>	<ul style="list-style-type: none"> <li>- Most of the students gave positive feedback to the implementation of animation clips in the discussion section</li> </ul>

All in all, the percentage of the students' response toward animation clips in the first and second meeting is 70%. From Table 3, it can be concluded that the response of students toward the implementation of animation clips was always good from the first to second meeting.

**TABLE 3** The Percentage of Students Response to the Employment of Animation Clips

Meeting	Acquired Score	Percentage	Description
1	28	70%	Good
2	28	70%	Good

## 4. Discussion

### 4.1 The Employment of Animation Clips in Improving Students' Listening Ability

Visual learners use their right brain. Right brained learners have to draw images of what they heard in their head in order to remember the information (Sword, 2001). In listening activity, teacher can help them visualize what they heard through explanation, which is hard to do. However, bringing the real things of what they heard to the classroom seems impossible. Moreover, it would be time-consuming either for the preparation or the implementation. Therefore, the researcher used animation clips to bring that picture in their mind to reality so that it was easy for them to process the audio into their mind without losing their enjoyment in listening to the audio. It proves that listening actually requires visual back-up to facilitate visual learners and help them to translate the information into their primary visual mode (Sword, 2001).

In scoring the students listening ability, since the listening activity using animation clips belong to selective listening according Brown (2001), the researcher used information transfer technique which is one of the test for selective listening. Selective listening is a listening activity where the students are listening to something while getting some specific information, in this research is information from animation clips. Meanwhile, *information transfers technique* is a technique where the students should transfer the information gotten from visual representation, for example, in this research, identifying an element in a picture (Brown, 2001:127). To be more specific, bottom-up and top-down processing were also involved in the test as suggested by Harmer (2007:201). Bottom-up processing which refers to use the incoming input as the basis for understanding the message was reflected in the True and False section while top-down processing which refers to the use of background knowledge in understanding the meaning of a message was reflected on the WH-question section. This, in line with Richards (2008:4-7) who said that those two different kinds of process should be involved in understanding spoken discourse to improve students' listening ability especially their comprehension on it.

By considering the explanation above, it can be concluded that implementing animation clips has been proven as a good way to improve the students' listening ability. It can be shown in the result that there was an improvement of the mean score from 65.2 to 85.4 and also the fact that, 80% of the students passed the standard score after the implementation of animation clips. All in all, the result had achieved the criteria of success made before only in one cycle even though two students had been omitted from this research because they had hardly attended the class.

The improvement of students' listening ability after the implementation of animation clips was in line with the surveys made by The Learning Assistance Center from City College of San Francisco (Campbell, 2011: 67) which concluded that the poor listener focuses on the speaker's voice, clothes, or looks and, in so doing, discounts whatever they might say due to a critical stance on the speaker. Therefore, helping them by giving visualization of the audio through animation clips is a good choice to make their listening ability improve so that they will be a good listener.

Students' improvement was also because the animation clips used in this research was able to fulfill students' need. Attending to need satisfaction is a primary method of keeping students interested and happy (Harris, 2012). As visual learners, students from animation department find it hard to understand things through audio only. Harris (2012) also said that "even before young people were reared in a video environment, it was recognized that memory is often connected to visual images". Therefore, using animation clips as an audio visual media to teach listening is a good thing to do. Hawkins and Leung (2011:349) agree that video data, animation clips, able to give something which cannot be gotten through audio

recording only. Even “from an applied linguistic point of view, meaning is made not just from speech alone, but from all of aspect such as the extra linguistic, or paralinguistic, cues that always accompany speech” (Hawkins & Leung, 2011:349). All in all, students will put up with substantial immediate unpleasantness and do an amazing amount of hard work if they are convinced that what they are learning actually meets their needs (Harris, 2012).

At last, students’ improvement was also because animation clips are in line with students’ interest. Since almost all of the students in animation department loves cartoon very much, it is better to use something which was still related to cartoon to engage the students with the material. Cartoon is especially useful because it can create a stimulating and joyful language learning environment (Rochman, 2013). The moving picture in animation clips is similar with cartoon. Therefore, students will be much more committed to the learning activity.

## **4.2 Teaching and Learning Process**

In this research, the researcher used animation clips to attract the students during the teaching and learning process and to help them in visualizing a narrative story. This could be seen from their attitudes during the teaching and learning process. Those were proven by the result of the observation checklist which shows that there were 70% of the students giving a good response toward the employment of the animation clips.

Some points of the observation checklist in both meeting had the same result. All of the students did the worksheet based on the animation clips. Moreover, most of the students understood about what will they do with animation clips in the teaching and learning process; most of the students understand the content of listening material through animation clips; most of the students give positive responds towards animation clips; most of the students look comfortable and seem to enjoy in viewing animation clips; most of the students shows enthusiastic and interest during the whole teaching and learning process.

From the field notes, it was shown that students attitude during individual activity was not good enough. Some of them cannot do the worksheet individually. Students asked and disturbed others to get the answers. It happened because poor students still hard to understand the listening material while others were lacked confidence. Harris (2012) stated that one of the major keys to motivation is the active involvement of students in their own learning. Therefore, it is better to get students involved in activities, group problem solving exercise and working with each other as done in meeting II. In end of this research, fortunately, the students were able to work individually in the final listening test.

## **5. Conclusion**

Animation clips can be used as a medium to improve learners’ listening ability because it can be used to address learners’ need for visual. Yet, it is not a type of media that should be used on its own. It has to be used in combination with a well sound system, computer/laptop and projector. Its use in language teaching and learning context also requires efforts from teacher in selecting the appropriate animation clips to maintain the good teaching and learning process.

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## **INFLUENCE PERCEIVED OF USEFULNESS OF SELF-EFFICACY WITH ATTITUDE TO MEDIATION APLICOM**

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### **ABSTRACT**

In the accounting profession required the ability to has information technology competency (accounting computer applications). To establish the ability of the information technology competency then in accounting department of SMK (Vocasional) be learned myob applications. To determine the competency of information technology related to accounting, this study examines attitudes towards mediating influence on the Perceived of the usefulness of self-efficacy. This study uses a quantitative research explanatif design. The target population is vocational students majoring in accounting school has gained ISO 9001 in 2008 with the number of 433 students. The research sample using proportional random sampling technique over 208 vocational students majoring in accounting, using path analysis techniquetest (Path) and Sobel test (mediation test). The test results of mediation produces a pattern of relationships that is the Perceived of the usefulness of the self-efficacy can be explained either directly or through the mediation of attitude towards the use of accounting computer applications (myob). Based on the results and discussion of the study concluded that the attitude is interpreted in the context of cognitive, affective and conation able to mediate the relationship between the Perceived of the usefulness of the self-efficacy. For the wider interest not only in the field of education alone, future research can be directed to the use of public information system applications, by adding a dependent variable costs and benefits as well as the actual use of the independent variables.

**Keywords:** Perceived in myob, myob attitude, self efficacy in myob

To foster competence in the field of accounting, the need for self-efficacy. Individual self-efficacy is the belief in the ability or competence to perform a task (Brown, 2010: 4). Perceived about ease of use, perceived usefulness and accounting mastery of the self-efficacy with the attitude to its use as a mediation on the use of information technology in the form of a computer application that MYOB accounting at Vocational High School is important for the study. The first is because regarding the competencies that must be mastered by Vocational High School students majoring in accounting in accounting with mastery of subject areas such as information technology accounting computer applications either as a provision in the face of the competency test as well as the world of work. Both with this study will be known pattern of consistency of the students, so as to prevent the onset of cognitive dissonance in accounting learning, because students will later worked in finance, which of course requires consistency in attitude. The third self-efficacy can affect students in performing a task, effort, perseverance, and achievement. Learners who have high self-efficacy will increase the use of cognitive. Learners who are able to master a skill or execute a task would be ready to participate, work harder, more resilient in the face of adversity, and achieve a higher level.

This is in line with the curriculum for vocational or other equivalent forms are expected to incorporate life skills education. Life skills education as mentioned include personal skills, social skills, academic skills, and vocational skills, knowledgeable in their field and have knowledge of technology (SNP PP No. 19/2005). The mapping of the problems in vocational

found that there are limitations within the control of IT and existing facilities (DG Dikdasmen SMK). Therein lies the gap between the mission and the reality. So therefore the importance of using MYOB accounting computer applications in growing mastery of skills in information technology for vocational students majoring in accounting.

In the accounting profession are required for the technical skills of accounting include verbal and written communication, interpersonal, relationship building and leadership and mastery of Information Technology (IT) and the ability to understand, as well as using the latest technology into the main skill for the accounting profession that modern (Broad, 2011: 109 ) and (Herath, 2011: 16). Broad study results (2011: 109) suggests that the use of IT in accordance with the needs of the accounting profession is able to develop and improve the ability of IT to accounting graduates. This study makes a significant contribution in the development of accounting education in the use of IT in order to improve the technical skills of the accounting profession (Broad: 2011: 109). Results of the study Brazel showed that the auditor-auditors with expertise CAS (computer assurance specialists / a software application to audit) have expertise in assessing and controlling and planning the tests substantively higher than the auditor-auditing without having the ability to master CAS (Brazel: 2004, 15-16). Study conducted Chang also pointed out that the use of IT can bring benefits for 4 KAP (The Big Four) in addition to the use of IT is able to create efficiency and effectiveness in conducting the audit (Chang, 2011: 38) and (Zong, 2010: 44).

Based learning computer applications (SPUD) can improve the mastery in the intermediate accounting, (Bezik, 2000: 22). Research Hess (2005: 15-16) spreadsheet integration into the teaching of financial accounting, will achieve two goals at once that the students easier to understand financial concepts and become more able to do financial accounting such as when they take valuable skills in the world real, (Hess, 2005: 15-16) and (Grant, 2009: 157). With the provision of computer skills, accounting, students are expected to prepare financial statements using a computer program. In this era of globalization, graduates. In connection with the use of information technology, especially computer applications then known as the theory of Technology acceptance model (TAM) proposed by Davis (1989: 320 and 1991: 482). Based on the theory Technology acceptance model (TAM) proposed by Davis (1989: 477) Perceived of usefulness will affect the attitude of users of information technology, and this attitude will affect actual use of the user. While the attitude according to Bandura's theory of social cognition in Feist (2010) and (1986: 59) is a source of self-efficacy. This is confirmed tripartite theory models Rosenberg and Hovland (1960) in Anwar (2011) that the attitude has always been mediation or intermediary between objects perceived by the response in the form of cognition (beliefs), affective (emotional) and conation (behavior). Through the attitude (affective) these users according to Bandura (1989: 59) will have an impact on the confidence of individual estimate how far his ability in executing a task or a task that is required to achieve a particular outcome (self-efficacy). Empirical research on the acceptance of information technology by Teo (2007: 136) found that the Perceived of the usefulness (Perceived usefulness) of an information technology a significant predictor for attitude in use (Attitude Toward Using) an information technology (Chuttur, 2007: 10), (Gardner, 2004: 8) and (Porter, 2006: 1003). While attitudes in the use of information technology is also a significant predictor for self-efficacy (self-efficacy) (Brown, 2010: 5), (Khorrami, 2001: 24), (Abbitt, 2005: 36-37) and (Torkzadeh, 2006: 546-547). Another study conducted Noiwan (2005: 8), shows that attitudes toward the use of an information technology is not a significant predictor for the efficacy of self (Sam, 2005: 212-213).

Research carried out previously limited only to examine the relationship between variables either partially or simultaneously just so it is not certain attitude role in mediating the relationship between dependent and independent variables. This raises a research gap that encourages the empirical testing of the Perceived of ease of use, perceived usefulness of accounting information technology and mastery of the self-efficacy with an attitude on the use of information technology as a mediation on the use of information technology in the form of accounting computer applications. Besides According to empirical research Setiyani (2009: 70) to be able to operate the computer application of accounting required the mastery of accounting Based on the theory Technology acceptance model (TAM) of Davis (1989) states the premise that a person's Perceived of something, will determine the person's attitude, and attitude will affect actual use of the user. TAM model actually adopted from the model The Theory of Reasoned Action (TRA), the theory of reasoned action developed by Fishbe and Ajzen (1975). TAM theory only aims to explain and predict the attitude of acceptance (acceptance) the user to an information system. TAM explain the causal relationship between faith (the benefits of a system of information and ease of use) as seen from the actual use of the user.

Bandura (1986) in social cognition theory states that self-efficacy is the source of the emotional (affective). And this was confirmed by the Rosenberg and Hovland (1960), which advocated the view of the attitudes of the so-called Tripartite theory models. Only difference Tripartite theoretical models put all three components, namely the affective (emotional), cognition (beliefs) and conation (behavior) as a factor the first step in a hierarchical model. All three are defined separately and then in a higher abstraction form factor concept attitude as a single person's attitude ter-hadap an object has always served as an intermediary (mediation) between the object and the response is concerned .. Rosenberg and Hovland (1960) put forward the theory of the interaction of the components attitude, these three components are aligned and consistent when confronted with an object of the same attitude. Based on social cognitive theory Bandura (1986) self-efficacy rooted in attitudes (affective), where in theory Tripartite model of Rosenberg and Hovland (1960) consisting of components affective attitude, cognition and conation. Attitudes also have consistency, referring to the correspondence between the statement put forward by the response to the attitude of the said object. Consistency can also be indicated by the absence of doubt in attitude. The opposite of consistency is inconsistency. According to Anwar (2011: 27) consistency between the trust as a cognitive component, affective component with a feeling as behavioral tendencies as conative components form the basis for concluding business attitude that is reflected by the answers to the attitude scale. Azwar Theory (2011: 28) states that if any one of the three components of attitude is not consistent with the others, there will be disharmony causing an attitude change mechanism such that consistency is achieved. According to Anwar (2011: 46) when two cognitive elements that are relevant but not inconsistent with one another will cause cognitive dissonance.

Furthermore, according to the theory stance Technology acceptance model (TAM) of Davis (1989) was influenced by the Perceived of usefulness and ease. Thus it is clear that the use of self-efficacy variables replace the actual use of user variables in theoretical concepts Technology acceptance model (TAM) is based on the theory of social cognition and theory Tripartite models. Modification of the independent variables and the dependent variable is the addition on the advice of the research results Davis in 1991, in order to further research to further develop the theory TAM Technology acceptance model (TAM). This modification is due, firstly that in the context of accounting learning using computer applications of accounting according to the theory of social cognition Bandura (1989) states that human beliefs about self-efficacy

influences the kind of action they would choose to do, how much effort they would give into these activities, as long as what they are going to survive in the face of obstacles and failures. Learning is a process of interaction of learners with educators and learning resources in a learning environment. Learning is the assistance provided educators to be a process of knowledge acquisition and knowledge, mastery of skills and temperament, as well as the formation of attitudes and beliefs on students. In other words, learning is a process to help students to learn well. According to Bandura (in Wijaya, 2012), academic self-efficacy refers to beliefs related to a student's ability and the ability to achieve and accomplish tasks with the study results and the targets specified time, especially in the fields of study accounting.

Academic self-efficacy refers to the consideration of how much a person's beliefs about the ability to pass a number of learning activities and the ability to complete learning tasks. Academic self-efficacy is a person's belief in the ability of completing academic tasks based on self-awareness about the importance of education, values and expectations of the results to be achieved and learning activities. Secondly, Confidence on Bandura's self-efficacy according to (1989) is the cornerstone of the essence of humanity. self-efficacy to encourage perseverance in the search for solutions, the development of cognitive skills and intrinsic interest in the academic material that accounting material according to Bandura and Schunk (1981) in Myers (2010). Third, the weakness of the theory lies in the variable TAM endogennya the actual use of user variables are only limited to the acceptance of the presence and use of information technology. TAM did not see the suitability of information technology with its characteristics, competence and confidence in self and behavior arising from the use of information technology. Fourth, Mann (1969) in Anwar (2011: 24) states among the aspects of attitude that is cognitive, affective and conation the aspects afektiflah rooted most in as a component of an attitude and an aspect that most resist the influences that may change a person's attitude. Fifth, the actual use of user variables in TAM merely intended to explain and predict the acceptance (acceptance) the user to an information system. TAM explain the causal relationship between faith (the benefits of a system of information and ease of use) to the behavior seen from the actual use of the user. TAM theory looked at attitudes only bring behavior (conation), while according to the theory of social cognition and theory of attitudes led tripartite model of cognitive, affective and conation. Therein lies the research gap arising from the standpoint of each theory. This arises because the concept of attitude in defining construct a model tripartite theory of cognition, affection and conation as fused directly into the conception of attitude. further stated that by looking at any one of the three forms of the response is the attitude of someone already known.

Empirical research on the acceptance of information technology by Teo (2007), Lederer (2000) and (Maholtra: 1999) found that the Perceived of usefulness or usefulness of information technology is a significant predictor for attitudes toward the use of an information technology this is in accordance with findings Porter (2006), Gardner (2004) and Chuttur (2007). Attitudes toward the use of an information technology a significant predictor for self efficacy (Brown: 2010), (Khorrami: 2001), (Abbitt: 2005) and (Torkzadeh: 2006). According to Brown (2010) acceptance of the presence of the use of information technology will increase the confidence and the ability of users of information technology.

### **Research Method**

This study is an explanatory quantitative research. This research is oriented to explain the theory of Technology acceptance model (TAM) by including self-efficacy variable replaces the variable actual use of the user, because the actual use of variables in TAM theory only aims to explain



and predict the acceptance (acceptance) the user to an information system. Population of this research that vocational students majoring in accounting in Surabaya who are getting lessons MYOB accounting computer applications class XII in semester 1. The target population is half of vocational students majoring in accounting school has gained the recognition of ISO 9001 in 2008, because the school has gained the recognition of ISO 9001 has the quantity and quality of adequate computer labs. So that the facilities and infrastructure that support the use of accounting computer application software is not an obstacle to this study, the total population is 433 students. The research sample using proportional random sampling technique sample size was 208 students. For the purpose of data analysis and hypothesis testing, test used Path Analysis (Path Analysis) and Sobel test.

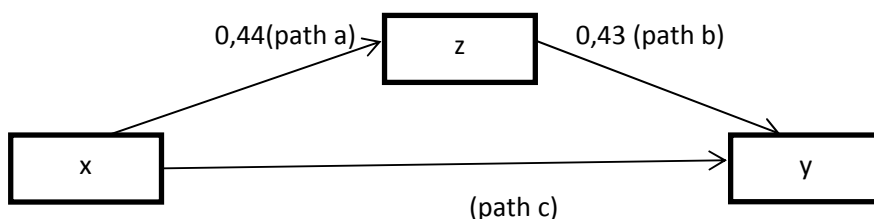
**Results and Discussion**

In this study, we discuss some related variables that Perceived usefulness/benefit accounting computer applications and the dependent variable Self Efficacy, using mediating variables Attitudes on Use of Information Technology. Here is a description of the study variables influence Usefulness Perceived of the Self Efficacy, using mediating variables Attitudes Usage Accounting Computer Applications (myob). So beland analysis of test results obtained the following lines:

**Table 4: 19 Path Coefficients mediation attitude toward the Perceived of usefulness with self-efficacy**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics ( O/STERR )
Percvof usefulness ->Efikasi	0,404514	0,409346	0,060376	0,060376	6,699857
Percvof usefulness ->attitude	0,441125	0,438886	0,076577	0,076577	5,760515
attitude -> Efficacy	0,430102	0,421839	0,066850	0,066850	6,433804

Perceived of usefulness/benefit to the attitude of the significance of T Statistics figures obtained by 5.760515 is greater than the significance value >1.96 thus Perceived of usefulness has a direct influence on attitudes. Pattern mediation attitude toward us ability with self-efficacy Perceived shaped Partial mediation, then the value is based on the Direct and Indirect Origin Value (Ghozali: 68-69). Direct and Indirect The value can be calculated as follows:



**Figure 1. Value of direct and indirect influence**

Based on Figure 1 can be explained: Variations on the independent variables, Perceived usefulness able to explain the significant variation in mediator variable (patha) the attitude towards the use of computer applications accounting for T Statistics  $5.8 > 1.96$ . Variations in attitudes towards the use of a mediator variable accounting computer applications are able to explain significant variation in the dependent variable (pathb) that self-efficacy of  $6.4 > 1.96$ . Controlled mediator variable (patha and pathb), the relationship between the independent variables and the dependent variable usefulness Perceived of self-efficacy significantly (pathe) that is equal to  $6.7 > 1.96$ .

**Perceived of usefulness/benefit accounting computer applications**

Perceived of usefulness according to Davis (1989: 320), Teo (2007: 130), Lederer (2000: 270) and Maholtra (1999: 5) definition of the Perceived of usefulness is the interpretation of vocational students majoring in accounting that use computer applications accounting myob will contribute to acquire knowledge and mastery of computer applications keterampilan about accounting. Acceptance of a technology information according to (Teo 2007:136), Lederer (2000: 277) and (Maholtra, 1999:8) found that the Perceived of usefulness or usefulness of information technology is a significant predictor for attitudes on the use of an information technology it is appropriate the findings of Porter (2006: 1003), Gardner (2004: 8) and Chuttur (2007: 10). The following table perceived level of usefulness of computer applications (myob) each indicator:

**Table 1. The level of Perceived of the usefulness of a computer application (myob) each indicator**

Scale	SD	D	N	A	SA	%
continuum	0-208	209-416	417-624	625-832	833-1040	
Usefulness/usability MYOB, include dimensions: it becomes easier to understand accounting, rewarding, increase productivity				767		74%
MYOB effectiveness, covering the dimensions: enhancing effectiveness, expand the job performance				761		73%

Based on Table 1, according to the first indicator perceived students have a tendency to agree that the accounting computer applications (myob) have uses in making tasks become easy, useful in helping to understand the accounting and able to increase the productivity of the student. The second indicator tendency perceived students agree that the accounting computer applications (myob) effective and able to help develop the student's performance.

**Attitude on the use of computer applications of accounting (myob)**

Attitude as a combination of affective reactions, behavioral, and cognitive against an object (Anwar: 2011). construct cognitive, affective, and conation as fused directly into the conception of attitude. This view, called tripartite model proposed by Rosenberg and Hovland (1960 in Anwar: 2011), placing three components affect, cognition, and conation as a factor the first step in a hierarchical model. All three are defined separately and then in a higher abstraction form the concept of attitude as the sole factor ter-hadap an object a person's attitude has always served as an intermediary (mediation) between the object and the response is concerned. Attitude on the use of conceptualized as an attitude toward the use of the system in the form of acceptance or rejection as a result of when someone uses a technology in its work (Davis, 1991: 479). The level of students' attitudes toward accounting computer applications (myob) diagramed as follows:

**Table 2. Level of students' attitudes toward computer applications Accounting (myob)**

Scale	SD	D	N	A	SA	%
continuum	0-208	209-416	417-624	625-832	833-1040	
Z				729		70,09%

Based on the table 2, the vocational students majoring in accounting in Surabaya as a whole has a tendency to agree and accept the attitude of the accounting computer applications (myob) in an attempt mastery of information technology in learning accounting. The number of respondents who agree that the easy accounting computer application to be used is equal to 70.09%. Here is presented the level of students' attitudes toward the use of computer applications of accounting (myob) each indicator:

**Table 3. Level of students' attitudes toward the use of computer applications Accounting (myob) each indicator**

Scale	SD	D	N	A	SA	%
continuum	0-208	209-416	417-624	625-832	833-1040	
Cognition on myob				781		75%
Affection on myob				708		68%
Conation on myob				693		67%

Based on Table 3, according to the first indicators of student cognition has a tendency to be agreed to receive accounting computer applications (myob). The second indicator is the tendency of students' affective agreed to receive accounting computer applications (myob). In the third indicator conation students agreed to receive accounting computer applications (myob).

**Self Efficacy**

Bandura (1982: 122-123) through social cognition theory put forward on Self Efficacy. Self-efficacy refers to the belief of individuals estimate how far their skills in performing a task or a task that

is required to achieve a particular outcome (feelings of self-efficacy in a task) or a trust in the competence of yourself. Self-efficacy (self-efficacy) in using MYOB is defined as a belief or conviction of individuals over capability (ability) or competence himself to use computer applications MYOB accounting in the fulfillment of tasks (Brown, 2010:4), (Khorrami, 2001:18) and (Torkzadeh 2006: 542).

Table 4 The level of self-efficacy of students based on each indicator

Scale	SD	D	N	A	SA	%
continuum	0-208	209-416	417-624	625-832	833-1040	
Confidence has knowledge of MYOB				704		68%
Confidence has skills in using MYOB				781		75%

Based on Table 4, according to the first indicator of students have a tendency to agree to have confidence will have knowledge in using computer applications of accounting (myob). The second indicator tendency of students have a tendency to agree to have confidence will have skills in using computer applications of accounting (myob).

**Research Hypothesis Testing**

Results of the analysis of the path between Perceived Usefulness (X) of the Efficacy of Self (Y), with the mediation of the attitude of the computer application of accounting as follows: research hypothesis first reads: Perceived of usefulness / utility computer application Accounting (MYOB) affect the attitude on the use of computer applications accepted accounting. It can be concluded that the attitude towards the use of computer applications accounting influenced by Perceived of expediency. The second research hypothesis reads: The attitude on the use of computer applications accounting effect on Self Efficacy accepted. It can be concluded that self-efficacy is influenced by the attitude towards the use of computer applications of accounting. The third research hypothesis reads: The attitude on the use of accounting computer applications will mediate Perceived influences the ease of use of the self-efficacy, acceptable. Due to the pattern of the relationship between the dependent variable and the independent variables can be directly or indirectly (through the mediating variables), then the case of partial mediation.

**Discussion**

Based on the results of data processing through path analysis, the Perceived of usefulness / utility accounting computer applications owned by vocational students majoring in accounting in Surabaya has an influence on the attitude on the use of computer applications of accounting (myob). So the findings in the study is the Perceived of vocational students majoring in accounting agreed that accounting computer applications (myob) have usefulness / benefit more dominant that the positive effect on the acceptance of the use of computer applications of accounting (myob). This means that the more useful / beneficial accounting computer applications (myob) according to the Perceived of vocational students majoring in accounting, the greater the acceptance of users, namely the vocational students majoring in accounting. Therefore it is proven and confirmed the theory of Technology Acceptance Model (TAM) of Davis is the more useful an information technology to help an individual or individuals to

improve their performance, the greater the acceptance of a person or people to the information technology (1989: 320 and 1991: 482) , According to Davis, the Perceived of the usefulness of a positive influence on the attitude of the use of information technology. Findings indicated a Perceived of the usefulness of accounting computer applications (myob) positive influence on the attitudes on the use of computer applications of accounting (myob) among vocational students majoring in accounting in Surabaya. In a study Venkatesh and Davis (2000) adds variables influence the process of social and cognitive processes as variables that influence the Perceived of usefulness. Based on the results of data processing through path analysis, the attitude on the use of computer applications of accounting (myob) has the effect of self-efficacy terhadap. Attitude theory is defined as a construct tripartite model of cognition, affect, and conation as fused directly into the conception of attitude. This view, called tripartite model proposed by Rosenberg and Hovland (1960 in Anwar: 2011), placing three components affect, cognition, and conation as a factor the first step in a hierarchical model. All three are defined separately and then in a higher abstraction to form the concept of attitude. Bandura (1986) suggested efficacy in the theory of cognition social theory of self-efficacy Bandura states there are important sources that individuals in the form of self-efficacy, one of them is Physiological and emotional state, where anxiety and stress that occur in a person when performing a task often interpreted as a failure. So the findings in the study is the attitude of vocational students majoring in accounting who agreed to receive accounting computer applications (myob) is more dominant that the positive effect on confidence will have knowledge and skills in using computer applications of accounting (myob). This means that the students receive attendance accounting computer applications (myob) in learning, the growing confidence will have knowledge and skills in using computer applications of accounting (myob). Therefore it is proven and confirmed the theory Efficacy Bandura (1986: 59) states there is an important resource that individuals in the form of self-efficacy, one of them is Physiological and emotional state (attitude / affection), and the results of this study also confirmed the findings stating, stance on the use of an information technology a significant predictor for self efficacy (Brown, 2010: 5), (Khorrami, 2001: 24), (Abbitt, 2005: 36-37) and (torkzadeh: 2006: 546-547). According to Brown (2010: 2-5) acceptance of the presence of the use of information technology will increase the confidence and the ability of users of information technology. Special training in using software SIA is able to reduce anxiety in the use of computers and will improve the quality of learning.

Furthermore, the findings in this study also showed the attitude of vocational students majoring in accounting who agreed to receive accounting computer applications (myob) is more dominant that the positive effect on confidence will have knowledge and skills in using computer applications of accounting (myob). This means that the students receive attendance accounting computer applications (myob) in learning, the growing confidence will have knowledge and skills in using computer applications of accounting (myob). So the easier application of accounting computer (myob) is used, according to the Perceived of vocational students majoring in accounting, then students increasingly being receptive to the use of computer applications of accounting so that the growing confidence (self-efficacy) will have the knowledge and skills in using computer applications of accounting (myob).

These findings confirm the theory of Davis (1989: 320 and 1991: 482) in the theory of Technology Acceptance Model (TAM) using attitude to mediate the Perceived of usefulness and perceived ease of use on information technology to actual use of information technology. And strengthen research (Teo: 2007), Lederer (2000) and (Maholtra: 1999) which found that the Perceived of the ease of use of an information technology a significant predictor for attitude

towards the use of (Attitude Toward Using) an information technology. And support the findings (Brown: 2010), (Khorrami: 2001), (Abbitt: 2005) and (Torkzadeh: 2006) who found empirically stance on the use of an information technology a significant predictor for self efficacy. The onset of full mediation pattern occurs because of the attitude of positive Perceived of the ease of use of computer applications of accounting (myob) in accounting learning, able to strengthen / add positive attitude of students toward acceptance of the presence of accounting computer applications (myob). Here the students' Perceived of the ease of use of computer applications of accounting (myob) consistent with students' attitudes toward acceptance of accounting computer applications (myob), as well as the positive attitude of the students are consistent with self-efficacy. Based on the results of data processing through path analysis and test Sobel, the attitude on the use of accounting computer applications are able to mediate partially (partial mediation) influence Perceived of usefulness / utility of the self efficacy. This means that the Perceived of the usefulness of the use of computer applications of accounting (myob) can directly affect the efficacy of self-esteem, and Perceived of usefulness influence students' attitudes on the use of computer applications of accounting (myob), then the attitude of the students on the use of computer applications of accounting (myob) affect the incidence of self-efficacy students. So stance on the use of accounting computer applications in mediating the effects of self-efficacy Perceived of the usefulness of the mapping based on the above five had partial pattern mediation. According to Anwar (2011) attitude is none other than an individual or as a response consistency probability of recurrence of the same behavior in similar situations. Even the attitude of many determining how individuals act, but an attitude and concrete actions are often far different. According to Anwar (2011) this is because the real action is not only determined by attitude alone, but by other external factors. Besides, for the kind of action alone there are many relevant patterns of attitude. Because of disharmony attitude is more a matter of individual orientation of the existing situation. Attitudes also have consistency, referring to the correspondence between the statement put forward by the response to the attitude of the said object. Consistency can also be indicated by the absence of doubt in attitude. The opposite of consistency is inconsistency. These findings confirm the theory of Davis (1989: 320 and 1991: 482) in the theory of Technology Acceptance Model (TAM) using attitude to mediate the Perceived of usefulness and perceived ease of use on information technology to actual use of information technology. And strengthen research (Teo: 2007), Lederer (2000) and (Maholtra: 1999) which found that the Perceived of the ease of use of an information technology a significant predictor for attitude towards the use of (Attitude Toward Using) an information technology. And support the findings (Brown: 2010), (Khorrami: 2001), (Abbitt: 2005) and (Torkzadeh: 2006) who found empirically stance on the use of an information technology a significant predictor for self efficacy. The first difference that arises with the theory of Technology Acceptance Model (TAM) is the independent variable.

### **Conclusion**

The theoretical implications of the results of research consistently shows the construction of the model is constructed through mediation pattern of attitudes on the use of computer applications of accounting (myob). The theoretical implications of this research relates to the theory of Technology Acceptance Model, tripartite model and social cognition. During this time the theory of Technology Acceptance Model conation attitude only meant to be, but in this study the attitude includes cognitive, affective and conation. The next theoretical implications of self-efficacy in social cognition theory, according to Bandura's self-efficacy is influenced by the

attitude, but in this study self-efficacy can be affected directly by the Perceived of usefulness. The practical implications particularly for the organizers and executors of learning accounting computer applications (myob), that the role of attitude in mediating the Perceived of ease of use, usability and control of accounting with self-efficacy has expanded meaning. Attitude is not only cognition, but includes affection and conation, meaning the expansion of these need to be understood by the organizers and executors of learning accounting computer applications. In addition, the practical implications of the following is the organizer and implementer of learning accounting computer applications need to know the consistency of the students in learning by using a software application.

### Suggestion

For the wider interest not only in the field of educational one, future research can be directed to the use of public information system applications, by adding a dependent variable costs and benefits as well as the dependent variable actual use. This is to evaluate the effectiveness and efficiency of public information systems applications. So it can be used to consider whether the public information system applications still worth used.

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# What have the teachers learnt from CLIL?

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## Abstract

In 80s and 90s, many experts develop and implement various approaches and method in English language teaching. They have vigorous debate in deciding which one is the best approach or method to be applied. This article reviews Content and Language Integrated Learning (CLIL), one of the modern approaches in English Language Teaching (ELT). It provides a brief description of CLIL, its theoretical background, and its implementation.

Keywords: *approach, method, ELT, CLIL*

## 1. Introduction

English is the most important language in the world. It is used in various field; e.g., bussiness, media, technology, diplomacy, trade, industry, etc. It links one country to another one. In worldwide, English has been introduced into classes and considered to be the first foreign language in Indonesia. It helps the progress of the state and the nation, builds relations with other nations and up-date the growing of science and technology. Therefore, English as Foreign Language (EFL) is taught in almost level of schools, from kinder-garten until university levels.

To face the global competitive world, the students should have English competence whether they choose English subject or other fields. The students' success is influenced by the teacher. In addition, many researchers regard that the teacher as a dominant and key factor to optimize education processes (Marinković, Bjekić, and Zlatić, 2012). A good teacher should have preparation before teaching; such as materials, methods and approaches, media, etc. Among those, methods and approaches shold be concerned by the teacher. The teacher of modern times has to place an appropriate model and adopt the apt teaching approach and methodology to impart language learning habits among the learners. Among the many approaches and methodologies, One of UNICEF study (2009) in School of Quality in Lao PDR has found that the teachers' use of proper methods and approaches have great impact on students' learning and teaching qualities.

Jack Richards and Theodore in their book "Approaches and Methods in Language Teaching" and Gültekin Boran in his writing "Methods and Approaches in Language Teaching in Brief" classified approaches/methods into nine categories, namely the Oral Approach and Situational Language Teaching, the Grammar Translation Method, the Audio-Lingual Method, Communicative Language Teaching, the Total Physical Response Method, the Silent Way, Community Language Learning, Suggestopedia and the Direct Method.

- *The Oral Approach and Situational Language Teaching* emphasized on spoken language teaching in the beginning. The target language is the language of the classroom. New language points are introduced and practiced situationally.

- *The Grammar-Translation Method* emphasized on teaching grammar and understanding literature of target-language through translation. The students firstly analyze the grammar rule and followed by completing the task of translating sentences and text into and out of the target language.
- *The Direct Method (DM)* persuades the students to use the target-language actively in the classroom. The meaning of target language is perceived through demonstration and action and the translation is not allowed. Besides, grammar is taught inductively.
- *The Audio Lingual Method* is based on the behaviorist belief that language learning is the acquisition of a set of correct language habits. This method emphasizes on repetition. Repetition and correction of patterns will allow the students to produce them spontaneously.
- *Total Physical Response (TPR)* engages the students to respond language acquisition process non verbally (physically). This approach places primary importance on listening comprehension, emulating the early stages of mother tongue acquisition, and then moving to speaking, reading, and writing.
- *The Silent Way* is developed by Gattegno which is teachers remain silent much of the time. The students must develop their own learning. Initially, the teachers act as model then give the students the chance to try to reproduce what has been modeled. All four skills reading, writing, speaking, and listening are taught from the beginning.
- *Community Language Learning (CLL)* psychological counseling techniques to learning, which is known as Counseling-Learning. Community Language Learning represents the use of Counseling-Learning theory to teach languages.
- *Suggestopedia* is Lozanov's method wants to help learners eliminate psychological barriers to learning. It uses drama, art, physical exercise, music, and so on to make them relax. Students just relax and listen to them being read and later.
- *Communicative Language Teaching (CLT)* has the main goal for the learners to become communicatively competent. They usually work with authentic materials in small groups on communicative activities.

English as language which dominate the world demand the qualification of English language in every aspect. Therefore the need of learning language is also in all aspects and subject contents. A great change of global demand cause some new approaches rise. CLIL is a of a new method found to answer the global need and offer a challenge for the teacher In what follows, the theoretical background of CLIL is presented by pointing out its the definition, CLIL framework, and its implementation.

## 2. Theoretical Background of CLIL

### 2.1 Defining CLIL

CLIL is abbreviation of Content and Language Integrated Learning, as an approach which is arised by David Marsh in 1994, and launched in 1996 by UNICOM, the University of Jyväskylä and the European Platform for Dutch Education. Dalton-Puffer (2007) define CLIL as “educational settings where a language other than the student’s mother tongue is used as medium of instruction”. It means that the foreign language is used as a tool to learn content subjects. In addition, Marsh (2006) defines CLIL as,

a generic ‘umbrella’ term to refer to diverse methodologies that lead to dual-focused education where attention is given to both topic and language of instruction. It is used to describe any educational situation in which an additional (second/foreign) language is used for the teaching and learning of subjects other than the language itself.

CLIL stresses on understanding content subjects through foreign language and it can be applied in primary, secondary, tertiary, and university level. Although CLIL is a new

approach, but it roots in immersion education from the 1970s and 1980s. The most influential source has probably been Canadian Immersion, designed to foster the acquisition of the second national language French by speakers of the other (dominant) national language English in the 1960s. CLIL widespread greatly in Europe and has supported by European Union (EU) policymakers. Finland is the first nation to adopt this approach.

CLIL lessons at school are usually planned as content-lessons (e.g. biology, music, geography) while the target language also continues as a subject in its own right in the shape of foreign language lessons taught by language specialists. Sometimes, it can also be construed as a foreign language teaching method (Richards & Rogers 2001), especially in primary education contexts. In essence, CLIL resembles non-language content teaching that entails a foreign language enrichment measure (cf. Torres-Guzman 2007: 50).

Currently CLIL is famous and is being implemented in a variety of contexts both in Europe and internationally. Therefore, CLIL adapts the approach suitable with various contexts and philosophies. As a result, there are numerous models of implementation which are included under the “umbrella term” of CLIL.

## 2.2 CLIL Framework

Content and Language Integrated Learning (CLIL) is a new pedagogical approach for second or foreign language education, growth in Europe in the mid-1990s. This approach initially carry out from the success of Canadian immersion model that began in the mid-1960s. At that period the curriculum content (e.g. Chemistry) is taught through the medium of the students’ non-native language (e.g. French). As Krashen (1984, p. 61) has argued: Canadian immersion is not simply another successful language teaching program—it may be the most successful program ever recorded in the professional language-teaching literature. Nationally, Victoria has been a leader in Australian bilingual education initiatives, establishing the Victorian Bilingual Schools Program in 1997, based largely on principles underpinning the Canadian immersion approach. As at 2011, there were 14 bilingual programs running across 12 Victorian government schools, catering for 1727 students at primary level. Languages include Chinese, French, German, Greek, Indonesian, Japanese, Macedonian, Vietnamese, and Auslan (Sarwo Rini, 2011).

CLIL is a flexible approach however it need a certain rules to ensure the high quality of CLIL. Coyle, Holmes, and King (2009) propose four key ‘building blocks’ known as the 4Cs Framework:

### **Content:**

- CLIL provides learning contexts which are relevant to the needs and interests of learners
- CLIL supports the integration of language into the broader curriculum
- CLIL can be explicitly linked to literacy, forming conceptual and linguistic bridges across the curriculum. This should involve first and second language learning and EAL

### **Communication**

- CLIL involves using language in the here and now to construct new knowledge and skills
- CLIL offers direct opportunities to learn through language and to make meanings that matter
- CLIL offers genuine opportunities to interact face to face and through the use of new technologies e.g. internet, video-conferencing, international projects.

### **Cognition:**

- CLIL promotes learner progression in both language skills and knowledge construction
- CLIL helps to redefine the curriculum, sharpening the focus on the interconnections between cognition and communication – between language development and thinking skills
- CLIL accelerates creativity in taking independent control of language using; a process leading to refining thinking and applying skills.

### **Culture:**

- CLIL is particularly relevant in classrooms where learners bring diverse language and cultural experiences

- CLIL is an appropriate vehicle for exploring the links between language and cultural identity, examining behaviours, attitudes and values
- CLIL involves contexts and content which enrich the learners' understanding of their own culture and those of others
- CLIL strengthens intercultural understanding and promotes global citizenship.

The correlation of each dimension can be seen in the Figure 1.

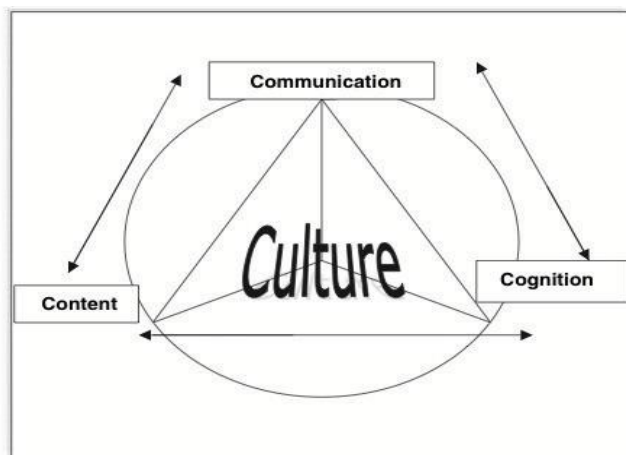


Figure 1. The CLIL 4Cs Framework (Coyle, 2006 in Coyle, 2007, p. 551).

As a pedagogy, CLIL provides a comprehensive framework that recognizes the complex but necessary interrelationship between language and content for genuine language development. It does this together with a theoretically rich and robust set of principles to help guide teachers on how this can actually be achieved in practice, across a range of educational settings.

### 2.3 The Benefits and Challenges of CLIL

CLIL students have been found to be typically more engaged than students in regular second language programs, due to the authenticity of the content that drives the learning experience (Coyle, Hood, & Marsh, 2010; Mehisto, Marsh, & Frigols, 2008). Likewise, CLIL students do better on tests of second language competence compared to students in regular second language programs (Wesche, 2002). Academically, CLIL students cover the same curriculum content as those in a corresponding monolingual program, with a focus on grade-equivalent/age-correspondent knowledge, skills, and concepts, rather than ‘dumbed-down’ units of work (Coyle et al., 2010).

Muñoz (2002, p. 36) offers an explanation for why CLIL tends to produce so many positive outcomes for learning. The key reasons include:

1. Learners benefit from higher quality teaching and from input that is meaningful and understandable.
2. CLIL may strengthen learners' ability to process input, which prepares them for higher-level thinking skills, and enhances cognitive development.
3. In CLIL, literacy development takes place in the first language, which is cognitively beneficial for the child. Later, literacy skills will transfer to the additional languages.
4. In CLIL the learners' affective filter may be lower than in other situations, for learning takes place in a relatively anxiety-free environment.



5. Learners' motivation to learn content through the foreign language may foster and sustain motivation towards learning the foreign language itself.

#### In the *CLIL-Compendium*

- develop intercultural communication skills
- prepare for internationalisation
- provide opportunities to study content through different perspectives
- access subject-specific target language terminology
- improve overall target language competence
- develop oral communication skills
- diversify methods & forms of classroom practice
- increase learner motivation

[www.clilcompendium.com](http://www.clilcompendium.com)

As presented previously, although CLIL has various benefits this approach has challenges for teachers and learners. University Cambridge ESOL Examination (2008) mentions challenges in CLIL as following. Firstly challenges for teachers, as subject teachers, they need to have qualification in English language. It will help them to present and explain concepts in their subject area. Besides, they need to check pronunciation of subject-specific vocabulary. Last, they have to use appropriate classroom language to present new concepts, to clarify, encourage and manage their classes in English.

In addition as language teachers, they may be asked to teach content subjects. Therefore, they need to know how to explain content subject concept and application of content subjects in meaningful and creative ways that will help the students to grasp the subject area. Then, they have to prepare to answer questions about content subjects concepts which may be unfamiliar for the students. Last, they have to widen their knowledge of content subjects and its pronunciation.

The barriers are also faced by the students. The students are all different even they are from the same subject. Some students may need more help to understand subject concepts, while some other need more help to communicate ideas about subject concept. They students need different times to understand the subject contents.

The other challenge is the using of L1. Using L1 by students or teachers is quite common in CLIL. This is known as codeswitching. The use of L1 happens to clarify teachers' instructions, developing ideas for curricular content, group negotiations, encouraging peers, or off-task social comments. Moreover, the teachers should be clarify when the students are able to use L1 or not.

The last challenge is lack of materials. The teacher sometimes difficult to find appropriate materials for their classes. To face the problem, the teacher should be active to find online material from website and from subject-specific course books.

### 3. The Implementation of CLIL

The 4Cs is as foundation to implement CLIL. Cognition (the thinking skills and problem-solving approaches specific to that particular topic), community (the development of the self-awareness of the learner with respect to the content, him/herself as a learner, and the purpose of learning in the wider environment be it at school, university or the surrounding society), communication (interaction with others and the language domains specific to the topic), and culture (how the learner engages with the language and content and the discourse features required to both learn and communicate) are all interlinked. ([www.pi.ac.ae/metsmac/proceedings/2006/Marsh-D-METSMaC-2006.pdf](http://www.pi.ac.ae/metsmac/proceedings/2006/Marsh-D-METSMaC-2006.pdf))

Besides, language skills are usually combined; listening (it is an input activity, vital for language learning) reading (it is the major source of input, using meaningful material), speaking (it focuses on fluency, accuracy is seen as subordinate), writing (it is a series of lexical activities through which grammar is recycled). (<https://www.teachingenglish.org.uk/article/clil-a-lesson-framework>).

AECLIL (Assessment and Evaluation in Content and Language Integrated Learning) (2012) promotes the steps that can be followed in implementation of CLIL.

These are the steps implemented:

1. compare and develop ways of implementing and sharing CLIL projects and experiences in the schools of the participant countries;
2. plan CLIL pathways (by using online resources) in some disciplines to be chosen from the field of science and technology and from the arts and humanities, in collaboration with the different partners involved;
3. design and implement monitoring and evaluation tools;
4. produce learning units through the methods of cooperative learning, using the ICT tools available;
5. test the material produced in class, using monitoring devices;
6. compare and disseminate the results through the social web;
7. provide assessment and evaluation feedback.

#### 4. Conclusions

Students' success in learning process is determined by many factors, such as students' motivation, material, media, and appropriate selection methods and approaches. The past decades coin many innovative methods which lead teaching process practices. CLIL as one of the new approaches in language teaching offers the students to develop their foreign language while they learn the content subjects.

The assumption in this paper is there is no best method or approach. Each method or approach will have best result in different circumstances. CLIL is as a new approach focus on understanding the content subject through medium of foreign language. To implement CLIL, school or teacher should consider elements dealing with CLIL.

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# Implementing Inquiry-Based Instruction In a Indonesian Snack and Beverage Management

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## ABSTRACT

This study examined the influence of implementing inquiry-based instruction on two cognitive abilities; higher order thinking and science-learning motivation in Indonesian Snacks and Beverages Management. The participants included students from S1 Tata Boga 13 (N-54). We predicted that implementing inquiry-based instruction would influence both on higher order thinking and science-learning motivation. This study was engaged in an action research study as explored how could use inquiry-based instruction to encourage higher order thinking and science-learning motivation among students of Indonesian Snack and Beverage Management. This study was through two cycles of action research. In cycle one focus was on introducing inquiry-based instruction into lessons. The focus of cycle two was on improving the student ability to improve their higher order thinking and science-learning motivation. The results indicated that after participating in the implementation of inquiry-based instruction, higher order thinking and science learning motivation were both increased. Preliminary analysis of the data indicated that the before and after treatment had similar mean scores as evaluated with a pre-quiz and post-quiz. However, after treatment had a 16% increasing in the number of students receiving perfect scores on the quiz.

*Keywords: Indonesian Snack Beverage Management, Inquiry-based-Instruction, Higher Order Thinking, Science-learning Motivation.*

## Introduction

An effective learning process requires a professional teacher. Professional teachers have a set of science as the foundation of a number of techniques and procedures that can attract students' interest and understanding and able to use a variety of learning models. The use of various learning models, can improve the quality of students' thinking. The quality of the learning process is determined by the variety of learning that develops students' higher-order thinking which includes the activities of observing, formulating relevant questions, evaluating the book, sources and other sources of information critically, planning inquiry or investigation, reviewing, conducting experiments to collect, analyze and interpret the data, and make hypotheses and communicate the results (Holil, 2008). Inquiry means inquiry, or examination, investigation (Gulo, 2002: 84). Inquiry is a method used in learning to question, seek knowledge or information, or learn a symptom (Evan, 2011). Wayne Welch identified five nature of the proceedings namely: observation, measurement, experimentation, communication, and mental processes.

Inquiry is based on theories of learning and behavior. Inquiry is a way of teaching students how to learn using the skills, processes, attitudes, and knowledge of rational thinking (Cindy E et al, 2006). Inquiry is one of the strategies used in process-oriented classes. Inquiry is a student-centered teaching strategy which encourages students to investigate problems and find information. The process is similar to the procedures used by social scientists whose investigate problems and find information (Pinkwart, 2009). Inquiry is a process that varies and includes the activities of observing, formulating relevant questions, evaluating the book, sources and other sources of information critically, plan investigation or investigation, reviewing what is already known, carry out experiments or experiments by using a tool to obtain data, analyze and interpret the data, and make predictions and communicating the results (Bell, 2010: 7).

The key features of Inquiry Based Instruction of the study covered four aspects involving: 1) classroom lesson introduction, 2) investigation, 3) conclusion explanation, and 4) communication. A brief description of these features is displayed in Table 1.

**Table 1** Key features of Inquiry-Based Instruction

<b>Instructional Process</b>	<b>Descriptions</b>
Lesson Introduction	1. Inquiry process begins with question(s) that students are interested in and/or curious about.
Investigation	2. Inquiry process begins with scientifically oriented question(s). 3. Scientifically oriented question is answered by scientific investigation. 4. Students, the teacher, or both parties design(s) an investigation. 5. Students conduct an investigation and collect data
Conclusion/ Explanation	6. Students, the teacher, or both parties analyze(s) data gathered from an investigation 7. Students formulate a conclusion/explanation from evidence.
Communication	8. Students communicate and justify their conclusion/explanation with other students. 9. Students evaluate their conclusion/explanation in the light of alternative ones.

### **Inquiry-Based Learning and Higher Order Thinking**

Problem solving, inferring, estimating, predicting, generalising and creative thinking are all considered to be higher order thinking skills (Miri et al, 2007). The idea is that some types of learning require more cognitive processing than others. The lowest three levels of cognition in Bloom’s taxonomy are knowledge, comprehension, and application and are considered to be lower-order thinking skills. The highest three levels are analysis, synthesis, and evaluation and are thought to be of a higher order, and require different learning and teaching methods than the learning of facts and concepts (Krathwohl, 2002). In order to assess levels of higher order thinking in students’ work it is important to examine the relevant framework. This model can be used to effectively measure different kinds of cognitive learning outcomes within a wide range of subject areas (Kanuka, 2005 and Atherton, 2011). The five levels are as follows, in increasing order of structural complexity is displayed in Table 2.

**Table 2** SOLO taxonomy

<b>No</b>	<b>Level in the SOLO Taxonomy</b>	<b>Description</b>
1.	The Pre-Structural Level	The student does not have any kind of understanding but uses irrelevant information or misses the point altogether.
2.	The Uni-Structural Level	The student can deal with one single aspect and make obvious connections.
3.	The Multi-Structural Level	The student can deal with several aspects but these are considered independently and not in connection.
4.	The Relational Level	The student understands relations between several aspects and how they might fit together to form a whole.
5.	The Extended Abstract Level	The student shows profound understanding and can apply this understanding to wider contexts and new applications.

Adapted from Biggs & Collis, 1982, p.17-31 and Kanuka, 2005.

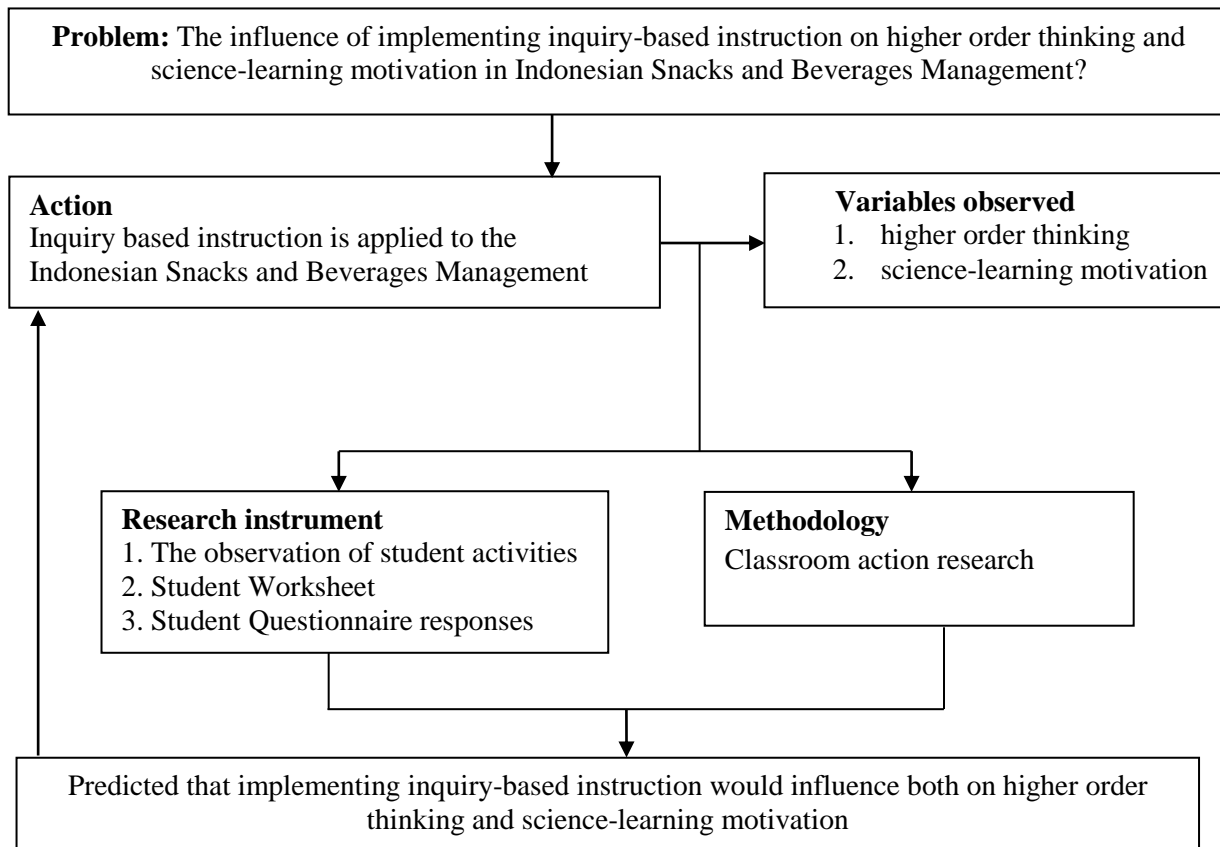
### Inquiry-Based Learning and Science-Learning Motivation

Self efficacy is commonly defined as the belief in one's capabilities to achieve a goal or an outcome. Students with a strong sense of efficacy are more likely to challenge themselves with difficult tasks and be intrinsically motivated. These students will put forth a high degree of effort in order to meet their commitments, and attribute failure to things which are in their control, rather than blaming external factors. Self-efficacious students also recover quickly from setbacks, and ultimately are likely to achieve their personal goals. Students with low self-efficacy, on the other hand, believe they cannot be successful and thus are less likely to make a concerted, extended effort and may consider challenging tasks as threats that are to be avoided. Thus, students with poor self-efficacy have low aspirations which may result in disappointing academic performances becoming part of a self-fulfilling feedback cycle.

Clearly defined learning goals/outcomes contribute to a structure that surrounds a course and can aid in selecting appropriate graded and ungraded assessments, selecting relevant content for the course, and enhancing the assessment or grading practices. Learning goal in inquiry based instructions are students can analyze and explain problem of Indonesian snack decorations and development, understand concept snack decorations and are able to distinguish it from common misconceptions and can use their understanding to solve problems or develop a perspective. Learner goal orientation is an individual's disposition toward a level of achievement or target for accomplishment in a given learning situation.

### Research Design and Implementation

The research design for this study is action research to be a reflective, highly rigorous approach to research. Detailed in figure 1



**Figure 1** Research Design and Implementation

## Participants

The participants included students from S1 Tata Boga 13 (N-54). This class is chosen with consideration that this class is a class that has an authentic problem to improve the skills of students to higher level thinking and science-learning motivation.

## Description of Instruction

Planning Phase Action that setting up the Events Unit Class were used that refers to the inquiry model that would apply to students with cookery Course Learning Outcomes (CLO) is able to design the art of innovative decorating Indonesian cakes. Further drafting learning activities form activities are inquiry and preparing evaluation instrument form task and doing quizzes related to the research results. Observations conducted during the learning takes place and every observer can observe groups of 3-4 or 9-12 students. It is intended that the accuracy of the assessment can be better. Through this reflection will be known strengths and weaknesses are conducted in classroom action research, the data from the observation of action is analyzed and assessed carefully in order to know what should be eliminated and what should be improved and maintained. Research Instruments is questionnaire on Motivation in Science Learning. In this study, the authors use guided inquiry learning model on the grounds that the inquiry model Tourism vocational students is still relatively new so we need intensive guidance. This approach is used primarily for students who are not familiar or inexperienced learning by inquiry. With the guidance of the teacher, the student is expected to be able to think and find a way proper research (Joyce and Weil, 2000) in Dimiyanti et al (2002: 175).

## Data Analysis

The data collected for this study were analyzed using SPSS software. The statistical analysis included descriptive statistics, calculations of the mean (M) by the Student's t-test

## Research Results

### Cycle One

#### Higher order Thinking

In the proceeding lesson the students shared their individual questions with each other and offered constructive criticism to each other. Peer interactions are beneficial to assist students to clarify and focus their statistical questions (Allmond & Makar, 2010; Chin & Osbourne, 2008; Chin, Brown, & Bruce, 2002 and Lowrie 2002). There were several problems with their questions. Overall the quality of research questions that the students came up with was poor and there was very little evidence of higher order thinking. A brief description of these features is displayed in Table 3

**Table 3** Higher Order Thinking Cycle one

No	Level in the SOLO Taxonomy	Mean	Value
1.	The Pre-Structural Level	1	33,3%
2.	The Uni-Structural Level	1	
3.	The Multi-Structural Level	1	
4.	The Relational Level	1	
5.	The Extended Abstract Level	1	

Based on observations of the first cycle students are still many activities students get less value and moderate (33.3%). This is reasonable because the students still in the process of adaptation did prose skills, among others: (1) The Pre-Structural Level (2) The Uni-Structural Level (3) The Multi-Structural Level (4) The Relational Level (5) The Extended Abstract Level. It can be concluded that the observation of the activity of students in a class derived from two observers, the student activity assessment, is 33.3% is still relatively less, so we need further observation on the second cycle in order to obtain better results. Research conducted by Cindy E (2006: 4) through the implementation of learning-based inquiry that students can learn new content and challenging and the concept of the real, is actively engaged in finding and identifying answers to complex to important questions, and is involved in planning, reflection and evaluate, the process of investigation proved to help develop students' thinking process. Inquiry learning makes students think critically and be familiar with the activities reflect a new concept.

### **Motivation of Science Learning**

Self efficacy on motivation of science learning shows that the completeness of the indicators in the first cycle has not been achieved, because the percentage of completeness indicator is still below the product 65%. Mastery learning indicators amounted to 70.8%. This indicator is relatively easy, but there are some students who are less scrupulous in distinguishing dry ingredients and wet ingredients, so there are still some students who are not exactly finished. Some students have a good understanding of the materials used in fruit preservation process. The other indicators not yet completed, analysis of data obtained from observations of the first cycle can be concluded that the new students get to know the skills in observation process preserved.

Learning goals on the first cycle indicator showed only 14.2% completeness, students still occur because students gain new experience in working sheet activities based on research results. In the next cycle the student should learn independently evaluate the results of their research based on observations that have been made. In addition, students must study independently with the institute on the MFI has been previously learned and apply it to the next matter. No progress expected learning outcomes of students in the second cycle learning model that can support the students in conducting the research process. Research conducted by Pinkwart (2010) indicates that the inquiry learning is proven effective to support students understand a concept as they investigate the real topic of observations. Research carried out involving group study with a small scale in some of the early meetings is done either individually or in groups. Then the results of these observations are discussed in a larger study group.

### **Reflection on Cycle One**

Based on observations of student activities in the first cycle, students still tend to use the old way of doing the observation process, so that the process is carried out to be inefficient, because it has not been adequately supported MFIs in research activities. Then it needs to be continued into the second cycle aims to improve every aspect still classified category by means of student assessment is being given MFI support research activities. Additionally in the second cycle, the lecturer should also play a role in facilitating the students in doing the MFI. In addition, students must be self-sufficient in determining the formulation of the problem to be studied in the next material. Besides lecturers should also motivate students to ask and to train students ability to find answers to the observations of activities that have been done so that the student be understood according to the suit which has been found based on research results.



**Cycle Two**  
**Higher order Thinking**

The objective of the lecturer observations on the implementation of inquiry learning model in the third cycle was to enhance the student's understanding with regard to the activity of systematically examining the application of the inquiry model. Observations made by 2 observers, namely observer 1 of peers while the observer 2 is a lecturer in question. Observations carried out during the learning takes place and any observer can observe groups of 3-4 or 9-12 students. It is intended that the accuracy of the assessment can be better. The observations of the student activity observation implementation of the first cycle can be seen in Table 4.

**Table 4** Higher Order Thinking Cycle Two

No	Level in the SOLO Taxonomy	Mean	Value
1.	The Pre-Structural Level	4	87,5%
2.	The Uni-Structural Level	3	
3.	The Multi-Structural Level	3	
4.	The Relational Level	3	
5.	The Extended Abstract Level	4	

Base on observation of student activity in cycle two with inquiry based instruction model obtained by two observers showed a significant increase in accordance with the expected success criteria. This happens because students are getting used to the process of systematically examined. It can be concluded that no further observations need to be done on the next cycle. Research conducted by Alastair (2010) through the implementation of learning-based inquiry that students can learn new content and challenging and the concept of the real, is actively engaged in finding and identifying answers to complex to important questions, and is involved in planning, reflection and evaluation, the investigation proven to help develop students' thinking process. Inquiry learning makes students think critically and be familiar with the activities reflect a new concept.

**Motivation for Science Learning**

Activity of students in the application of the inquiry model observation third cycle is in conformity with the expected success criteria. The data above observations show no significant development of student activities with the implementation of inquiry model. At cycle two students are able to develop a more detailed formulation of the problem by reducing the role of professor, so that students are able to develop independently and discover new information based on observations that have been made already as expected and in accordance with the criteria of success.

Learning goals on the second cycle obtained by the students in the classical meets the criteria of success expected although individually there are still some students who have not been completed, because the student is still in the process of learning how to do process skills is good and true, but it is caused by constraints students are still difficulties in formulating the problem, formulating hypotheses and determine the control variables, still need a more detailed explanation and delivered slowly. Amir Ruddinillah (2011) examined the inquiry approach skills of the students, the results showed that the process of inquiry approach can be implemented on the subjects of productive groups in Vocational High School.

**Reflection on Cycle two**

Based on observations of student activities in the second cycle, showed that 87% of students feel attracted to component (teaching materials, Instructional Materials, MFI, learning atmosphere, and the way professors teach) can be improve higher order thinking and motivation of science learning. Students expressed less interest because they never learn the

same material when the high school at 14%. Based on this, it can be said that in general students are interested in the components inquiry learning model.

Student response to the renewal of the components shows that 79% of students feel new. While 23% students stated otherwise. The response majority of students expressed a component is new. Student response to the renewal of the component states that the process skills 90% of students declare new things. While 10% of the students stated is not new. This indicates that the student has never gain skills during the process of teaching and learning activities, so almost all of the students stated components is a new process skills.

Students respond by 35% that the components are easy to follow process skills for learning activities take place. While 65% of the students stated that the components of skill difficult process, even though most of the students stated that the components of process skills is something new to them and still difficult to implement.

Student response to the interest in the use of inquiry learning model when applied to the subject matter further and applied to other subjects was 90%. Students expressed less interest in the amount of 10. This shows that the majority of students feel more interested in learning innovative compared to traditional learning. Students want to be directly involved in the learning process.

The response of students during explanation and guidance lecturers took place during work on the MFI stated that 100% is clear. This is due to carry out the teaching faculty in accordance with SAP that has been made, thus helping professors to deliver skills as a gradual process and provide feedback to the student during a lecture in progress.

## **Conclusion**

The results of data analysis and discussion, it can be concluded that the implementation of inquiry based instruction to improve higher order thinking and science learning motivation succeed. The formulation of the problem that has been set, it can be summed up as follows: Based on the research that has been done, observations of student results in inquiry learning model in the first cycle showed as much as 14.2% were completed. In the second cycle increased to 59.1% were completed. It can be concluded that further observations on the third cycle can describe the learning outcomes of students who applied to the model of inquiry learning increases and managed in accordance with the expected success criteria. Students responded positively to improve higher order thinking and motivation of science learning, developed the learning process skills are trained. Student response of the interest component 86% categorized as very interested, renewal the components 79% with a fairly new category and understanding the component 35% to the category is not easily caused still not used to implement process skills.

Based on the conclusion, researchers gave the following advice: Keep the exercises oriented process skills to get students thinking to solve the problem in addition to lecturers provide wider opportunities for students in applying various approaches according to the characteristics and the contents of the subject matter, so that the use of the approach the right will be able to assist students in achieving optimal learning results. Students are expected to develop the principle of inquiry in many subjects and read about the structure of foodstuffs other than teaching materials that have been provided as well as the media outside material taught in class because it will greatly help solve the problems that commonly occur in the field. Based on the student's response to the implementation of inquiry learning model, similar studies should be conducted because of the need to competence culinary expertise to the inquiry method is still lacking.

Field constraints encountered during inquiry learning is not yet accustomed to the skills of students who are in the process of inquiry learning model. Need a longer time in the implementation of inquiry learning model so that students become accustomed to the process skills.

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# The Intercultural Sensitivity of Vocational High School English Teachers

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Coping with the globalization era demands English teachers to always improve their teaching skills to give their best to the students. Furthermore, in associating with the coming of Asean Economic Community, students of vocational high schools, especially, should be well prepared to be able to interact globally with people from different groups. In relation to this, English teachers have to remember to teach the students not only the language but also the culture as well. This is because language is interrelated to culture. Teaching language also means teaching the cultures. Therefore, how the process of teaching cultures is done depends on teachers' intercultural sensitivity level. Concerning the matter, this study analyzed the extent of intercultural sensitivity of vocational English teachers, including how the intercultural sensitivity insinuates the process of their teaching. The instruments used to gain the data in this study were in the form of questionnaire and interview guide. The subject of this qualitative study were five English teachers of vocational high schools in Situbondo. The results of the study is expected to be beneficial for the teachers to give more insight, improvement, and correction for their current view of intercultural sensitivity.

**Key Words:** *intercultural sensitivity, vocational high school, English teachers, teaching process*

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# **BE SOMEONE ELSE GAME FOR TEACHING SPEAKING IN JUNIOR HIGH SCHOOL**

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## **ABSTRACT**

Speaking is a process of communication between at least two people. Some students are difficult to practice it. It caused shyness, nervousness, and feeling affraid. Making students are interested to speaking. It needs solution. Game is one of them. Be Someone Else is interesting game for teaching speaking. The research aims to know the significant of the games and the response of the students. Quasi-experimental non randomized was used. The population was MTS Roudlotul Ulum Jombang and the sample was 7A class for experimental class and 7B as control class. The instrument to collect the data was oral test. T-test was used for analyzing the data. On the statistical calculation for post-test using t-test. It found that  $df\ 60$  was bigger than  $t\text{-table}\ (4.113 > 1.67)$  at the significance  $0.05$ . from the data, it indicated that there is significance. The gained score of Experimental class was higher than score of control group. And the result of questionnaire showed that 90% of the student's response really good. Increasing students' achievement can be used game. Be Someone Else game is alternatively for teacher teaching speaking in Junior High School.

Keywords: *Be Someone Else Game, teaching speaking*

## **A. INTRODUCTION**

As a subject, English is not only learning about vocabulary and grammatical pattern but also learning about the use of it in the daily activity. Many people learn English because they think it will be useful in some way for international communication and travel. (Harmer, 2007:11). Based on the Harmer above it indicates that one of the significant objectives of teaching English is to make learners easily in communicating using the language in the form of oral and written. The aim of teaching foreign language is to provide the students skills which enable them to communicate orally with the speakers of other nationality who have also learned the language. That is why, it needs teacher skills to create an interesting method and technique so that the students obtain a good result and ovoid them from boredom. In the terms of language skills in teaching and learning English that should be mastered are listening, speaking reading and writing.

Speaking ability is refers to the students' ability to speak based on the situation given and to create their own utterance in order to describe their words (Competency Based Curriculum, 2004). In other words, speaking here means the ability to use English in communication such as how to begin, to develop, to end a conversation, and to know what topics can be talked about and how to speak to different people with different status and situation. According by Harmer (2003: 269) speaking ability is the ability to speak fluently presuppose not only language features, but also the ability to process information and language on the spot.

In Indonesia, English is learnt and taught to junior high school, Senior high school even at university. English means that something important for the student to be taught at school based on situation and condition of the object area. Teaching and learning process of English in junior high school is based on the school based curriculum KTSP (2006) stated that English subject has some purpose such as, improving the communication capability in the form of spoken and written to gain infromational literacy level. The students should have the awareness about the essence and important English to improve nation competition in the global society. And the students have to develop the understanding in relation between language and culture to gain the information of culture. Moreover, the students have to master English language skills and English components such as, vocabulary, grammar and pronunciation. But, Speaking is still one of the focuses of English (BSNP, 2006).

One of the language skills that have to master by students in learning a foreign language like English is speaking. Many students find difficulties in speaking English. Speaking has some problems that faced by the students. There are many students at the seventh grade find difficulty and still harder to be a good speaker. Another reason is because of the lack of motivation to practice the second language in daily conversation. Other aspect that is caused by daily habit, the effect is they feel difficulties in speaking such as shyness, the students feel ashamed and afraid to speak English, so they never practice and use target language and they prefer use mother tongue in the classroom. foreign language immediately useful (Lewis and Bedson 2002:12). Related to the Lewis and Bedson, game has an essential tool in creating students' motivation and understanding in learning English. Games divided into some characteristic based on its style. such as; movement games, card games, board games, dice games, drawing games, guessing games, role play games, team games, word games.

There are some reasons of the researcher in choosing the topic can be formulated as follows:

1. Based on the aim of language speaking is one of important skills which have to be mastered for communication in over the world.
2. Because the same characteristics between speaking and Be Someone Else Game so students can practice speaking a lot.
3. Be Someone Else game is an interesting game, because it is kinesthetic movement game, so the students can express their skills freely and it can avoid boredom in the process of teaching and learning.

Based on the background above and the difficulty that was faced by students of junior high school in speaking skills, the article concerned to find out whether Be Someone Else Game could significantly increase the students speaking ability and What the students' response to the teaching by using "Be Someone Else" Game is.

**B. METHOD**

**1. Design**

The article used Quasi-Experimental design which use nonequivalent pre-test and post-test design control group. This approach is used because the researcher is permitted by the school to conduct the research based on the class which is selected and without random.

Creswell (2003:160) said that the nonequivalent pre-test and post-test control group is Quasi-Experimental which is group A and group B are selected without random assignment. Added by Latief (2013: 95) in educational settings, very often it is not possible to select the sample randomly out of all the population students. However, to divide the experimental class and control class the researcher used random assignment by using lottery to determine which of the class will be the experimental class and which of will be the control class.

The research design is in the table below:

**Table. 3.1  
Nonrandomized Control Group, Pretest-Posttest Design**

Group	Pretest	Independent Variable	Posttest
E	Y <sub>1</sub>	X	Y <sub>2</sub>
C	Y <sub>1</sub>	-	Y <sub>2</sub>

Where:

- E = Experimental group  
(The group which is taught by using Be Someone Else Game)
- C = Control group  
(The group which is taught by using Be Someone Else Game)
- Y<sub>1</sub> = The measurement of the dependent variable  
(Y<sub>1</sub> is the measurement of the students' speaking skills before giving treatment.)
- Y<sub>2</sub> = is the measurement of the students' speaking skills after giving treatment)
- X = Treatment

(The treatment in this research is using Be Someone Else Game)

(Adopted from Ary, 2010:316)

**2. Population and Sample**

1. Population

The population of the research was the seventh grade of MTs RU Mojoduwur academic year 2013/2014 which consisting 3 classes. And each class consists of thirty students. The total of population was 90 students.

2. Sample

The sample was experimental research, so the article needs two classes one as experimental class and another as control class. Because of the recommendation of the institutional school, the article used 7A and 7B to be observed by using Be Someone Else Game.

**3. Variables**

This article used Be Someone Else as a method in teaching speaking descriptive text, it has two variables. Those are:

**Table. 3.1**

**Independent and Dependent Variable**

Independent Variable	.	Dependent Variable
Be Someone Else Game Speaking		Achievement

**4. Instrumentation**

Instruments is a judgment tool in this article, the instrument is used in this research to collect the data which can measuring the research and answer the research problem. That statement is supported by Latief (2013:1 00) He said that the instrumentation effect may interfere in the process of measuring the result of experiments.

- a. Test
- b. Trying Out

**5. Validity test and Reliability test**

a. Validity test

The validity of this research will be tested by the expert. In this case, the expert judged whether the draft of the instrument suitable to the instrument and to defend adequate sample to be measured (See appendix 3 and 4). In the other hand the researcher also look for validity using r table, where r value > r table. And the result of this research shows that r value > r table. Using significance 5% the researcher found that r table is 0.349 with 30 respondents. So it can be concluded that the questions is valid.

**Table. 3.4**

**Validity of trying out**

No	Aspect	r value	r table 0.349	Remark Valid
1	Pronunciation	0.768		
2	Grammar	0.732	0.349	Valid
3 4	Vocabulary Fluency	0.648	0.349	Valid
0.588	0.349	Valid		

Based on the data above, it shows that the result of speaking aspect is valid with the 30 respondents.

b. Reliability test

Reliability is the degree of consistency with which it measures whether it is measuring. (Ary.et.al 2006:236). This research finds out the reliability test by using SPSS ver. 2.0 for windows.

By this software the researcher will know the Cronbach ‘s Alpha. The test is called reliable if r Alpha > 0.60. And the result can be seen below:

**Table. 3.5**  
**Reliable of trying out**  
**Reliability Statistics**

Cronbach's Alpha	N of Items
.625	4

Based on the reliability test by using SPSS, it indicates that the data is reliable because coefficient of ALphe Cronbach > 0.60

**c. Pre-test**

Pre-test is the first test before the writer applies the method teaching speaking by using “Be Someone Else” Game. Pre-test is given to both of the classes, experimental class and control class.

**d. Post-test**

Post-test is test which is given to experimental and control group. The aims of this test is that to know how far distinction of developing student’s mastery in speaking.

**e. Questionnaires**

The article used the close questioner which is adopted from Arikunto (See appendix 15). The questionnaire is for the students, where the aim to know how far the relationship among methods and the students’ enthusiasm.

**6. Data Collection Method**

Data collection is a process to get the data which they are relevant with the research. It uses to evaluate and to know the students’ speaking ability. In collecting the data, the researcher uses the steps below:

- a. Preparing Instrument
- b. Testing Validity and Reliability
- c. Pre-test
- d. Giving treatment
- e. Post-Test
- f. Calculating

**7. DATA ANALYSIS**

According to the Ary et.al, (2006:95) Data analysis indicated how you will analyze the data to test the hypothesis and/or answer the research question. Data analysis presents the way to analyze data. It is used to find out accurate answer from the research problem.

**C. FINDINGS AND DISCUSSION**

**1. FINDINGS**

**a. The Result of Test**

Pre-test and post-test were given to experimental class and control class. So the score of the students is taken twice. The score of Pre-test is taken before teaching speaking using Be Someone Else Game and the score of post-test is given after the students’ get treatment.

After reaching the data, then the researcher calculate the data using SPSS program verse 20 for windows. Because the aim of this study is to compare the mean of pre-test and post-test in experimental class and control class so the researcher used t-test in calculating the data.

**Table.4.1**  
**Group Statistics**

Group	N	Mean	Std. Deviation	Std. Error Mean



experiment		30	84.80	5.359		.978
score						
Control		30	78.63	6.223		1.136

**Independent Samples Test**

		Levenes Test								
		for Equality of								
		Variances		t-test for Equality of Means 95% Confidence interval of the Difference Sig. (2- Mean Std. Error T Df tailed) Difference Difference Lower Upper						
		F	Sig.							
Score	Equal variances assumed	.656	.421	4.113	58	.000	6.167	1.499	3.165	9.168
	Equal variances not assumed			4.113	56.751	.000	6.167	1.499	3.164	9.169

The analysis tables are:

1). In table (Group statistic)

After calculating the data using SPSS, we can see that the students who are taught by using Be Someone Else Game is 84.80 while the mean score of the students who are not taught by using Be Someone Else Game is 78.63. From the data, it shows that the students who are taught by using Be Someone Else Game achieve better score than students who are not taught by using Be Someone Else Game.

b). In table (Independent sample test)

From the table of SPSS above, we can find that  $t_{value}$  is 4.113 within (2-tailed) 0.00 where  $df = n_x + n_y - 2 = 30 + 30 - 2 = 58$  so  $t_{table} = 1.67$  with significance level 5% [ $\alpha = 0.05$ ].

Based on the statistical value above ( $4.113 > 1.67$ ), the researcher can conclude that  $t_{value} > t_{table}$ . So  $H_a$  was accepted and  $H_0$  rejected. It means that there is significance effect of using Be Someone Else Game in teaching descriptive text of the students' achievement.

The significant data of this research is gained score from pre-test and post-test from the experimental class and control class. Between Experimental class and control class both of them got increasing score, although the control class did not get treatment. There are two things which are caused it. This is the flaw of this research which is used quasi experimental design in which extraneous variable cannot be controlled. The data from t test obtained that t value is higher than t table. So it can be concluded that the use of Be Someone Else Game has significant effect on students' speaking skill.

For more detail of the data score for experimental and control class as follow:

Table.4.2

The result of Pre and post-test at class VII I or experimental class

No	Name	Pre-Test	Post-Test
1	ANH	75	88
2	CG	75	88
3	DP	63	81
4	ENR	69	88

5	FA	69	88
6	IK	75	94
7	LR	63	75
8	LNS	69	88
9	MAR	69	81
10	M.FS	56	81
11	M.NI	69	88
12	M.R	56	88
13	NP	88	94
14	NK	75	81
15	NS	88	81
16	NLF	75	88
17	RS	88	75
18	RS	75	88
19	RTA	75	88
20	SHA	88	88
21	SM	75	88
22	SA	88	81
23	STR	88	75
24	VU	81	88
25	WAP	75	88
26	WK	69	81
27	YNR	63	88
28	YK	69	75
29	YW	94	88
30	ZL	81	88
	SUM	2243	2551

Table4.3

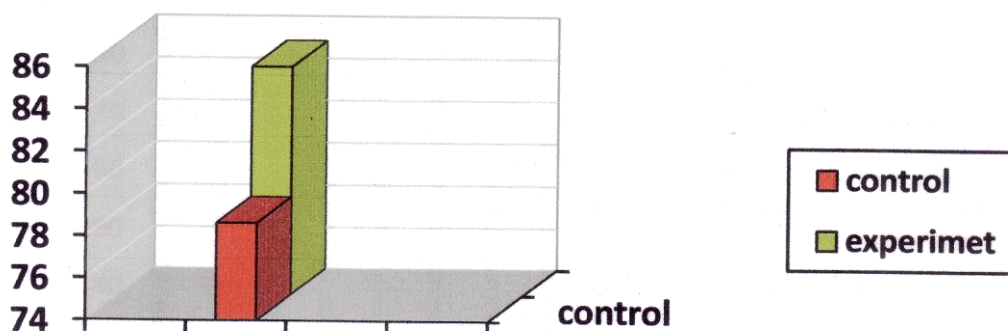
The result of pre and post-test at class VII A or control class

No	Name	Pre-Test	Post-Test
1	A.F	81	81
2	AI	75	75
3	ASF	75	75
4	AB	75	75
5	BF	69	75
6	DES	75	75
7	DAS	69	75
8	EK	69	75

9	FM	69	75
10	HN	75	75
11	JD	69	75
12	KW	75	81
13	LKMN	88	88
14	M.BM	75	75
15	M.FS	88	88
16	M.NR	75	75
17	M.RA	88	88
18	MS	75	75
19	MA	75	69
20	MUV	88	88
21	PUT	75	75
22	RT	88	88
23	RIZ	88	88
24	SAL	81	75
25	SH	75	75
26	SIN	69	75
27	SIY	63	75
28	SUG	69	75
29	SYA	75	81
30	TTK	81	94
	SUM	2292	2359

For further description of the result of post-test on students' speaking skill achievement for experimental class and control class is also presented in the histogram 4.6

**Figure.4.1**  
The average score of students' experimental and control class in speaking skills.



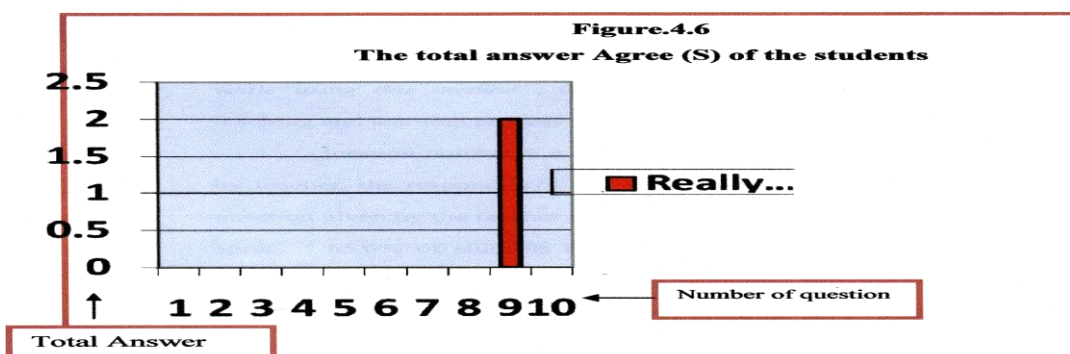
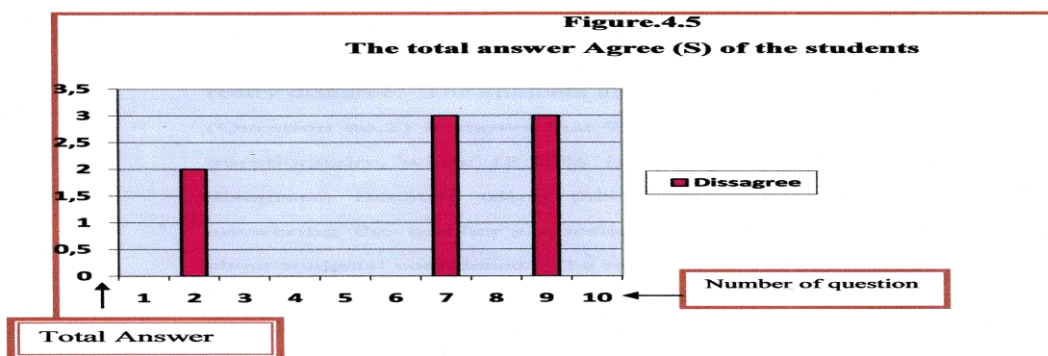
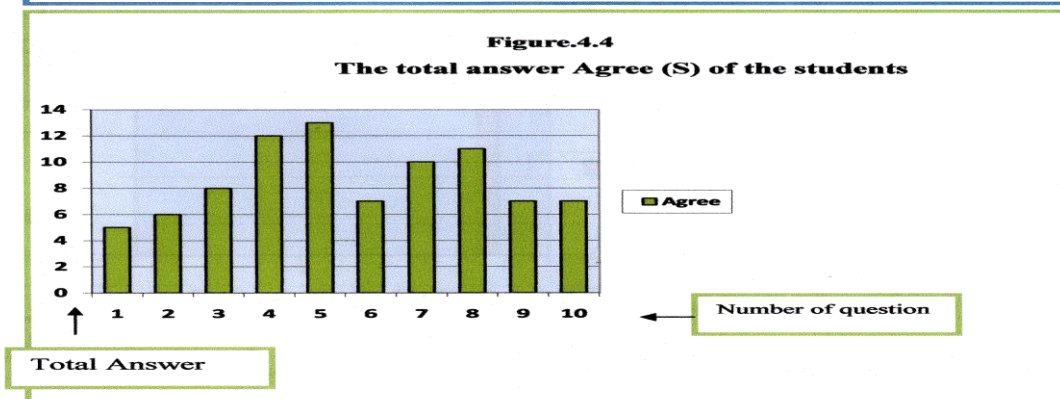
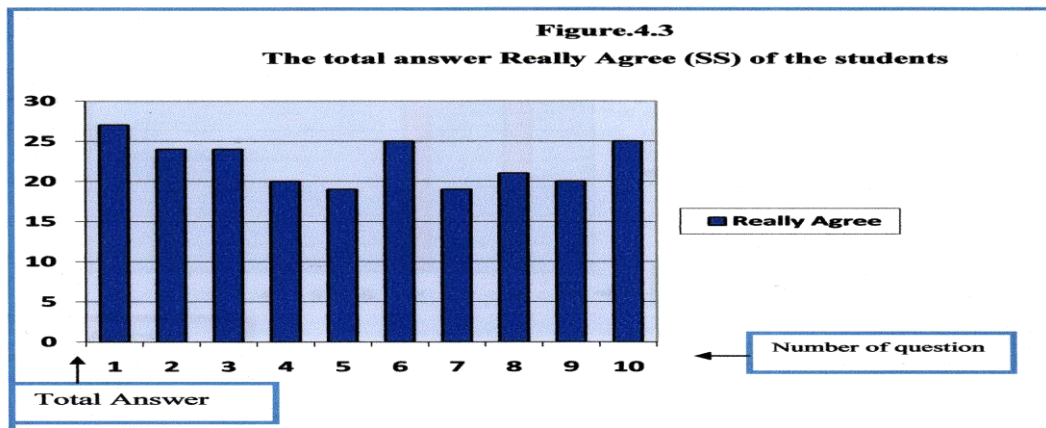
From the graphic above, teaching speaking by using be someone else strategy is more effective than without using be someone else strategy. The mean of experimental class is more significant than the mean score in control group.

**b. The result of questionnaire**

. The total of scores is in 4 a criterion consists of Really Agree (SS), Agree (5), Disagree (TS), Really Disagree (STS), the total of item is 10, and the total of respondent is 30. The score of all questionnaires is 1152. Based on the total score, it was concluded that enthusiasm of the students who taught using traditional game is 1152 = 90%. See the table below:

**Figure.4.2**

**The graphic of questionnaire result**



From the table it is possible if the students' enthusiasm was increasing after taught by using

be someone else strategy. Question number 1 which measure about the relationship of method in understanding the material is 84.4% is Really agree, 15.6% is agree, 0% disagree and 0% really disagree. The students also able to answer the teacher question (Question no.2) it shows that 75% of students really agree with that questionnaire, while 18.75% is Agree, 2% disagree and 0% really disagrees. Because using this method the students get easily in answering the teacher's question. Question number 3 which talking about students' confidence. The result is 75% of the students really agree if they are not shy to ask question when they find difficulties.

The understandings of students' in receiving material also shows that they are in a high enthusiasm with 62.5% really agree. They did not get difficult when answering the question from the teacher. And 37.5% agree, 0% disagrees, 0% really disagrees. (Question no. 4). Question number 5 is "*Because of this method I always pay attention to the teacher's explanation while using this method*", the students pay attention in the process of teaching and learning process the respond is 59.3% really agree.

Question number 6 it is about remembering material which is given by teacher, the respond is 78.1% 'F he students also make effort to answer question given by the teacher (question 7) for 59.4% really aee and 31.2% agree. 65.6% of students respond is and 62.5% really agree about the interest feeling of learning English by using be someone else strategy is in number 8 and 9. The respond is 78.1% is for number 10 which regarding to teacher's rule.

After knowing the result of questionnaire, it is bravely true that there is significant effect in teaching speaking narrative text using be someone else strategy. It supports the researcher data in finding this strategy.

## 2. DISCUSSION

Most of the students cannot pronounce well when they were speaking, this statement is right according to Ramelan (1985:6) because the mother tongue which become their habits influences how to pronounce the words. So, it was possible if the students' find difficult in pronunciation because English is a foreign language for them. Fluency is consists of fluency and accuracy it is the ability of systematically in producing word and showing a semantic and the ability to appropriate thing of context and the ability of imaginative in language. From the research that was conducted the researcher found that the students able to speak well although they miss the semantic meaning. The result of student's accuracy in speaking descriptive text that was taught by using he someone else game got good score. The article got that most of the students could master vocabulary well and has a good sense in choosing the vocabulary. The students can learn the vocabulary by reading list of vocabulary by themselves. After reading the list of vocabulary or dictionary the students should memorize the vocabulary to make sure that they understand well about the meaning. After doing those step the main point is practicing vocabulary which is learned in speaking activities.

The data from questionnaire derived that the respond of students' who taught by using traditional game is enjoyable. It is proved on the result of questionnaire is 1152 means that 90% from 4 criteria, 10 items and 30 respondent. It is assumed that the alternative hypothesis is accepted if teaching speaking using Be Some Else Game is effective.

Based on the discussion above, it shows that be someone else game is effective strategy to teach speaking and also to increase students' motivation or enthusiasm in learning English.

## D. CONCLUSION

With the reference of data calculation in the previous chapter, it is concluded that there is significant effect of students' achievement in speaking ability using game. The students of experimental class who are taught descriptive test through Be Someone Else Game gained better score average in speaking ability. It is shown from oft-value was 4.113 while ttable was 1.67 with significance level 5% [a 0.05]. It mean that t-value is higher than t-table. It can be proved through the comparison oft-test and t-table which had been calculated by SPSS 2.0.

In addition, 90% of the students were very enthusiast when the teacher used Be Someone Else Game in teaching speaking. It shows that the students of experimental group in MTs Roudlotul Ulum had more enthusiasm in learning speaking. It is proved by result of questionnaire which is showed that almost the students is enthusiasts with this strategy because they are able to understand

the material easily the actively in the classroom.

The use of Be Someone Else Game is teaching speaking also helped both the teacher and the students as well. Be Someone Else Game helped the students to understand the material while for the teacher, it help the teacher to make a good strategy in teaching and learning process. Finally, the researcher comes to the conclusion that Be Someone Else Game is effectiveness in teaching speaking at the first grade of MTs Roudlotul Ulum.

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# The Implementation of Direct Learning to Improve Psychomotor Skills Students' XI Patisserie in Processing Indonesian Bread Cake

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## ABSTRACT

The purpose of this study was to explore the influence of implementing direct learning to improve psychomotor skills students'. This study uses classroom action research to describe, analyze, and skills problems encountered in processing Indonesian bread cake. The participants included students from vocational high schools 6 Surabaya. Based on learning process results has greatly improved understanding of how to integrate direct learning into Indonesian bread cake. There was an increase seen in average total score first cycle with a percentage of 90.5% and the second cycle 93.5%. The response implementing direct learning is considered better designed by performance test. The direct learning not only can improve the students' enthusiasm for learning, so they have psychomotor skills can be honed and improved immediately but also improve the understanding aided by demonstration stages contained on direct learning. Although the percentage of the first cycle 94% and the second cycle at 85%, but more than 85% of the total students in class to achieve a score  $\geq 75$ , that showed the classical completeness can be obtained.

**Key Words:** *Direct Learning, Indonesian Bread Cake, Psychomotor Skills.*

## Preliminary

Employment needs are inseparable from wisdom *Link* and *Macth* applicable to all types of education in Indonesia (Hamka, 2010). Rapid industrial development was also offset by the development of education (Hamka, 2010). Education is a conscious and deliberate effort to create an atmosphere of learning and the learning process so that learners are actively developing the potential for him to have the spiritual power of religion, self-control, personality, intelligence, noble character and skills needed him, the community, the nation and the State (Law No. 2003, Article 1).

The learning process includes a message in the form of the subject matter, the source played by educators, channels such as the media, the recipient is a student, while the results in the form of increased knowledge, attitudes, and skills. Skills in this case can be developed in the process of practice with psychomotor assessment coverage. The process can be developed through practice activities psychomotor skills. According to Bloom (1979) in Anonymous (2012), psychomotor skills associated with the process of learning outcomes through manipulation skills that involve muscle and physical strength.

Psychomotor skills in the vocational high school (SMK) in particular culinary tourism department included in the assessment. This assessment is based on the Department of Tourism and culinary skills to be divided into two, namely skills to catering and patiseri. Catering skills students are taught the skills to process a set of food while keahliaan patiseri students are taught the skills to process various cakes. Practice

making skills, especially baking cakes Indonesia delivered in the form of practical activities. Here practice activities require students to develop psychomotor skills. Psychomotor skills required ie psychomotor skills of articulation, ie the ability to perform activities of complex and precise so that their work is something that is intact. Implementation of the learning process carried out by the teacher using direct learning model. Direct learning in general, there are six *syntax*, namely *penyampaikan* purpose, conveying information, demonstrate and evaluate. Learning activities that occur in schools from six *syntax* is only done 5 *syntax*, the *syntax* is left in this learning activity is a demonstration phase. This raises the demonstration stage students experiencing difficulties in psychomotor skills. The difficulty occurs in the absence of an example in the process of making directly. Students just got briefed orally and in writing directly. These circumstances affect the development of psychomotor skills in processing the unleavened dough. So in this study tried to improve psychomotor skills of students through the use of direct instructional model to improve psychomotor skills in competency standard process unleavened dough in class XI patiseri 1 SMKN 6 Surabaya.

This study aims to look how the teaching and learning process of teachers, student activities, student responses and the resulting increase in *keterampilan* to use direct instructional model in the standard of competence unleavened dough to improve psychomotor skills class XI student of SMK patiseri 1 6 Surabaya.

### Formula

This classroom action research using the teacher as a researcher, in charge of the full research of class action. This study took place in SMK Negeri 6 Surabaya, conducted from April to May semester of academic year: 2014/2015 with research subjects are students of class XI patiseri 1 SMKN 6 Surabaya. This study uses a classroom action research (PTK). PTK Kwart Lewin This method consists of four stages: *planning* (plan), *action* (action), *observation* (observation) and *reflection* (reflection) (Sanjaya, 2009: 49). conducted from April to May semester of academic year: 2014/2015 with research subjects are students of class XI patiseri 1 SMKN 6 Surabaya. This study uses a classroom action research (PTK). PTK Kwart Lewin This method consists of four stages: *planning* (plan), *action* (action), *observation* (observation) and *reflection* (reflection) (Sanjaya, 2009: 49). Implementation of action research is a process that occurs in a continuous loop. The instrument used in this study is the observation sheet teaching and learning activities, student response sheet and test performance test.

This analysis uses the observation sheet Instruments immediate application of learning models on the basis of competence leavened dough, including making donuts and Panada (Thiagarajan and Kemp in Idana, in Shofiyah, 2005). The success of Learning Process (PBM) seen from the average score - average of each PBM is calculated using the formula:

Where

The average score of the assessment criteria - based on the average conditions (Thiagarajan and Kemp in Indana, in Shofiyah, 2005):

- 1 = Less with a score of 0.00 to 1.69
- 2 = moderately with a score of 1.7 to 2.59
- 3 = Good with a score of 2.60 to 3.49
- 4 = Very good with a score of 3.50 to 4.00

Student activity data derived from observations of an observer during the learning activities take place. To analyze the data of student activity observed was measured and analyzed by the formula:



### **Student responses in the use of direct instructional model cycle I and II**

use direct instructional model considered appropriate for use when the percentage of student response > 75%. In the table above student responses indicate that almost all aspects of the question had > 75% so as to be stated feasible to be used. The feasibility can be proved by the students of class XI patiseri 1 holds 100% never learn to use direct instructional model is experiencing a percentage increase compared to the percentage of the first cycle to the second cycle. Class XI patiseri first expressed interest in learning to use direct instructional model with proven at 96.4% expressed interest. Class XI patiseri 1 states excited when learning to use direct instructional model is evidenced by the student stating excited by 100%, on this aspect dinandingkan increase in cycle II. Class XI patiseri 1 states can improve their skills if using direct learning model is evidenced by the 96.4% of students said that they could improve their skills. Class XI patiseri 1 menyatakan interested to be used in other subjects to give a percentage of 85.7%, the percentage for this aspect has decreased compared with the cycle to I.

### **Performance test students in cycle I and II**

Performance test results showed that the students who did not complete if it gets final value below 85, whereas completeness if it gets above 85 to the final value. Based on the data obtained conclusions of the students who have not finished among the twenty-eight students to cycle I and II. Deduced the percentage of students in classical completeness student has completed 96.4% and 3.6% of students have not experienced completeness. The difference in the first cycle ketidaktuntasan students who have scored 72, while for the second cycle obtain the value of 84. The application of direct learning model can improve students' psychomotor skills. Increased psychomotor skills seen in scores assessment process and results. Stages of planning and preparation was scored fairly low. Increased psychomotor obtained from learning model implemented.

### **Reflection**

Stages of reflection on this first cycle is used to determine any further actions carried out by the teacher in achieving the objectives of the study. Results of analysis of the research data in cycle I is:

- a. Almost from the students who participated in the action research has been studied using direct learning model
- b. Students love learning model directly, because the students feel there is an example that they can imitate.
- c. The use of this learning model directly affect the activities of teachers and students who tend to be active
- d. Increased psychomotor skills in students increased at the stage of the process and results., Whereas in the planning and preparation stage there is no improvement.
- e. Classically completeness student has reached 96.4%.

The data is taken into consideration for continued research on the cycle II which are at the basis of competence to process the cake Indonesia

### **Conclusion**

- ✓ Based on observations k eterlaksanaan Learning Process on the application of learning models directly on competence it can be concluded that the feasibility study process cycle I and II no pen urunan suspension average total score - average in the first cycle of 3, 69 and the second cycle 3, 64. Decrease happen on stage introduction. Decline suspension mentioned no so take effect because still in span the same category that is good once.
- ✓ Based on observations activity class X I Patiseri 1 SMK Negeri 6 Surabaya to the application of the model learning directly on the basis of competence dough yeast it can

be concluded that in cycle I and II, there was an increase seen in average total score - average in the first cycle was obtained 3.62 by criteria good once, with a percentage of 90.5% and in the second cycle diperoleh 3, 74 with good criteria once, with a percentage of 93.5%.

- ✓ Response in the use of the learning model directly assessed good. The use of the learning model directly this could increase spirit learn the student, so skills psychomotor owned student could be sharpened directly and improved. The use of the learning model directly could increase right comprehension because assisted by stages demonstration contained the learning model directly.
- ✓ The application of the model pembelajaran directly on the basis of competence batter yeast especially on activity process cake donuts and Panada cycle I and II undergo completeness. It can be seen from the percentage of the first cycle of 94% and the second cycle by 85% because more than 85% of the total students in class to achieve a score  $\geq 75$  the classical completeness dapat obtainable

### Suggestion

- ✓ For school for give chance teachers to varying learning model with way facilitating equipment, so as to facilitate the achievement of learning objectives in general and the need for attention to the implementation of the learning process in schools so as to improve the quality of classroom learning and making students more active in the learning process and can improve student learning outcomes and quality school.
- ✓ For teachers in particular fields of study investigators suggested that in investigating the problems that arise in the learning process in the classroom, so as to increase the yield and the quality of learning in the classroom in efficient.

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# THE ROLE OF “MA’HAD ALY” IN BUILDING STUDENTS’ CHARACTERS

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## ABSTRACT

STKIP Al Hikmah is an Education University that provides the students with boarding learning system. The boarding itself called “Ma’had Aly” STKIP Al Hikmah. It is a boarding place for university students. All of the students are compulsory to stay at Ma’had Aly. All the activities are scheduled due to build students’ characters. Duration of the schedules are for 24 hours. The characters include discipline, honest, smart, strong, and caring. The main purpose of this study was conducted to identify the role of “Ma’had Aly” in building students’ characters. The samples participants of the study were 25 students of English Department of STKIP Al Hikmah Surabaya. They were chosen because of they have to practice their English and Arabic speaking skills besides building their characters. This study was designed as a quantitative study with scoring pre test and post test instruments allow lectures to empirically evaluate the role of “Ma’had Aly” in building students’ characters. After analyzing the scoring pre test and post test, it was found that Ma’had Aly has the important and determine role in building students’ characters. The result of this study was 80% of students have developed their characters and do good habits after they stay in Ma’had for at least 6 months. Therefore, “Ma’had Aly” has its potential as a place to build and develop students’ characters.

**Keywords:** “Ma’had Aly”, students’ characters, scoring rubric, pre and post-test.

## Introduction

STKIP Al Hikmah is a university that create good teachers who have both good academic competencies and characters. Dealing with how to build and develop students’ characters, the students have to stay at Ma’had Aly which is a place that prepared to build and develop students’ characters. The ‘Ma’had Aly’ itself is supported by facilities and rules as guidance of students in doing their daily life.

The facilities are such as Mosque, bedroom for each student, three times meals, music instruments, kitchen, etc. In Ma’had, the students able to memorizing Al-Qur’an and develop their hobbies, such as scout, Banjari, football, swimming, etc. Their daily time schedule is for 24 hours activities. They have to wake up before dawn at 3.30 a.m. and they can sleep after study in the night at 10.00 p.m. In ‘Ma’had Aly’, their habit must be in good things, the Ma’had also designed to make the students are always tidy, discipline, honest, smart, strong, and caring each other. Ma’had’s motto is first they are forced to do, second they are able to do, and the last they will get used to.

In ‘Ma’had Aly’, students are have to put every their belongings at the proper place, so they are train to be tidy. Then, for train their discipline, every single activities are well scheduled. For example, they have to wake up before dawn at 3.30 a.m. and pray Subuh together. After that they will memorize Al-Qur’an together and having breakfast before they go to campus at 6.30 a.m. until 3.30 p.m.

Therefore, it is necessary to explore the role of ‘Ma’had Aly’ in helping students to build and improve their positive characters. Building and developing personal characters need special effort that support students to build and develop their characters become better characters. Learning Thus this study was conducted to identify how ‘Ma’had Aly’ may facilitate the students in building and developing their good characters.

## Method

Since our study is concerned with characters development, quantitative instruments; pre and post tests are utilized in the beginning and at the end of the study. Based on Skjåk & Harkness (2003), the significance of implementing these instruments in a research is regarded to the reason that pre and post test data can show a difference in scores that can be measured for significance. They also highlighted that the use of pre-test and post-test instruments allows instructors a unique opportunity to empirically evaluate the effectiveness of their instruction and assess the acquisition of course content material by students through determining scoring rubric. The lectures who are responsible to give score are the chief of Ma'had, and 2 advisor lecturers.

The participants for this study were 25 students from 2 classes of English Department at STKIP Al Hikmah Surabaya. In this study, firstly a pre test was given to 25 students to determine the pre test score (taken before the students stay in Ma'had Aly and then post test is taken after the students stay in Ma;had Aly at least for 6 months. Later it can be seen in Table 1, the scoring rubric form for measuring the students' characters.

Table 1. Example of Scoring Rubric

No	Characters	Score (1 – 100)
1.	Discipline	
	a. Wake up on time.	
	b. Come on time to the class.	
	c. Do homework on time	
2	Honest	
	a. Return back things which not belong to him	
3.	Smart	
	a. Able to memorize Al-Qur'an on schedule	
4.	Strong	
	a. In healthy condition	
5.	Caring	
	a. Love to help friends	
<b>Total Score</b>		
<b>Average (Total: 12)</b>		

Furthermore, in Table 2, the pre test scores from 25 students were classified in groups of 7 (0-15, 15-30, 31-45, 46-60, 61-75, 76 - 100).

Table 2: Classification on pre test scores.

Scores	Number of students
0-15	2
16-30	3
31-45	5
46-60	9
61-75	6
76-100	0
Total	25

As it can be seen in Table 1 that the scoring rubric is consist of several terms that dealing with students' characters. From Table 2, the pre test shows that all of the students can not reach score more than 75 before they stay in Ma'had Aly. The duration of the treatment given in Ma'had Aly is at least for 6 months, the students are able to build and develop their good characters.

## Instruments:

Two research instruments were used to collect data for this research, namely the pre-test and post-test. Since this study was small scale, using the two instruments for data collection would help to validate the

findings; the findings from all the instruments could converge to present the result of this research. Data gathered from the pre and post test were counted and tabulated to make comparison of students' achievement. Later analyses were done accordingly.

**Pre-Test:**

The pre-test was given to the students at the beginning of the research where the students had lower score from the scoring rubric. The scoring rubric consisted of 12 simple statement that able to describe students' character.

**Post Test**

The post test was the same as the pre-test and was given to all students who are already staying at Ma'had Aly Al Hikmah at least for six months. The purpose of the post test was to see whether the students are able to build and develop their character after they stay in Ma'had Aly for six months. The scores were recorded for comparisons and analysis.

**Data analysis:**

After collecting data, the researcher started to analyze the data. The data analyses of this study were done based on the frequency counting method and the findings were recorded in two phases. The first one was done as soon as the pre- test was over. The scores were recorded and tabulated for easy reference of comparison later. The second phase was done right after the post test took place. Again, the scores were recorded and tabulated for the purpose of comparison too.

Most importantly, after the post test, the improvement was carefully calculated and converted into percentage to be used in the discussion of findings later. All these numbers were presented in the forms of tables so that the reader could have easy comprehension of the pre-test scores, the post test scores and the improvement of the students. It was convenient for the readers to compare and contrast and see what the researcher meant as the improvement were counted and converted into percentage, so that the readers did not have to make their own calculation and reading was smooth and undisturbed.

**Findings and Discussion**

The research findings were analyzed in accordance with the research problem. As it can be seen in Table 3, most of the students (36%) obtained the score of 46 to 60 in pre-test which is the lowest score is in range of 0 - 15, while no (0%) students gained score more than 76.

Table 3: Pre-test in percentage

Scores	Number of students in percentage
0-15	8%
16-30	12%
31-45	20%
46-60	36%
61-75	24%
76-100	0%
	100%

After staying in Ma'had Aly STKIP Al Hikmah for 6 months, a post test was taken. The result of the post test is tabulated in Table 4.

Table 4: Post test of scoring rubric

Score	Number of students	Number of students in percentage
0-15	0	0%
16-30	0	0%
31-45	2	8%
46-60	3	12%
61-75	12	48%
76-100	8	32%
Total	25	100%

As you can see in Table 3 and Table 4, all the who are staying in Ma'had Aly show encouraging improvements. Based on the findings above, it was clearly that Ma'had Aly benefits the students in develop their characters. The findings showed that 'Ma'had Aly' is able to make student improve their characters as well as their academic skills.

It was found that the rules applied in 'Ma'had Aly' help students to build and improve their characters. The students were enthusiastic and even the quiet and passive ones were also able to improve their character when they are staying in 'Ma'had Aly'. The findings to a certain extend indicated that 'Ma'had Aly' holds the potential as an effective education place for character building and developing training.

In addition, the researcher found that the other positive effect of staying at 'Ma'had Aly' is that the 'Ma'had Aly' gives opportunity for the students to be better person. They were independent and were able to create their own positive activities. Relate to the findings above we also could infer that 80% of students (who get score 61 – 100) have improved their character after they live in 'Ma'had Aly' STKIP Al Hikmah.

## Conclusions and Suggestions

### Conclusion

The conclusions were drawn related to the research problem of the study about how 'Ma'had Aly' may help students build and improve their good characters. And it has tried to find out whether 'Ma'had Aly' can improve students' ability in doing any positive activities. The conclusions were:

- All participants from English Department students have improve their good character, when they are living in 'Ma'had Aly' based on their scores in the pre-test and post test.
- The different levels of improvement among the students reflect that some of them get more benefit when they are living in 'Ma'had Aly'.
- 'Ma'had Aly' has its potential as an educational place for character building training.
- 'Ma'had Aly' can motivate and engage students especially the quiet and passive ones in the whole daily activities.
- It is proved that 'Ma'had Aly' can give a good opportunity to the shy students to be active and from psychology aspect they will show and improve their hidden abilities.
- Being enjoy and happy is important factor in students' characters development; because of this fact, 'Ma'had Aly' is a good place for them to have enjoyable and happy place.

### Suggestion

The followings are suggestions for further studies:

- As 'Ma'had Aly' are effective place to build and improve students' characters, it is to suggest that further studies on the role of 'Ma'had Aly' to improve students' activities to be carried out.
- The use of computer schedule in educational training is another area that is worth exploiting.
- Lectures should allow the students to create and modify their activities when they are living in 'Ma'had Aly'.

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# Enhancing the Use of YouTube in Teaching Speaking in Indonesia

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## ABSTRACT

This paper is intended to enhance the use of YouTube in teaching speaking in Indonesia. Today's world requires that the goal of teaching speaking should improve students' communicative skills, because, only in that way, students can express themselves and learn how to follow the social and cultural rules appropriate in each communicative circumstance. Virtually, there are enormous of well-known online audiovisuals that teachers and students can function effectively to teach and learn speaking skill. One of the recommended resources is YouTube.com (YouTube). In order to create appropriate atmosphere in teaching speaking, teachers should start consider YouTube as one of the accessible and greatest media to collect additional teaching resources. Especially in Indonesian context which puts English as a foreign language, teachers could take it to account as their efforts to bring authentic audiovisual material in the classroom. This concept can be best implemented for teaching speaking because by utilizing video, students are helped to gain correct examples of pronunciation, dialogs, expression and concrete situation where the language context should be played on.

*Key words: enhancing, YouTube, teaching speaking in Indonesia*

## 1 Introduction

Speaking, as one of skills in English, is an important part of foreign language learning and teaching, so that it must be mastered by students. According to Brown and Yule (1983), speaking is the skill that the students will be judged upon most in real-life situations. It is an important part of everyday interaction and most often the first impression of a person is based on his/her ability to speak fluently and comprehensively. Today's world requires that the goal of teaching speaking should improve students' communicative skills, because, only in that way, students can express themselves and learn how to follow the social and cultural rules appropriate in each communicative circumstance (Bahadorfar and Omidvar, 2014:9). Thus, it is eminent for EFL (English as Foreign Language) teachers to prepare students to speak not only in the classroom but also in the real world. Nevertheless, in the practice, teachers often teach speaking in traditional way such as doing repetition or drilling, or even only memorizing dialogues in front of the classroom. In fact, the fast developing 21<sup>st</sup> century various information and communication technology have been widely used in educational environment. The flourishing of educational technology and the proliferation of software programs and materials require teachers and students to develop their computer literacy and use technology for teaching and learning English (Ismail, *et.al*, 2012:265). The utilization of technology may help students to improve language skills, especially speaking skill.

For EFL teachers, it may be a hard work to utilize potentially useful technology, promote student autonomy, and create stimulating lessons at once to teach speaking. Virtually, there are enormous of well-known online audiovisuals that teachers and students can function effectively to teach and learn speaking skill. One of the recommended resources is



*YouTube.com* (YouTube). It is a website where people can find all sorts of videos which people have made of themselves, others, of TV shows, etc. and have put on the web for everyone to see. YouTube is appropriate for teaching and learning speaking since it is related to the sight and sound. Teachers can get material, give exercises, and assess students' work from this online resource. Moreover, it has been very popular among young people and adults so that it will not take time to introduce the use of YouTube in teaching and learning process.

In fact, the problems always arise in line with the popping up of something new in education in Indonesia. Not all schools can afford the technology use inside the classroom. In this paper, schools that are strongly suggested to use YouTube as their helping tool are National Standard Schools (*SSN*), which have been equipped with facilities of information and communication technology. Based on Ministerial Decree No. 24 Year 2007 about Standard of Facility, the minimum criteria of facilities in every school consist of furniture, teaching aids, instructional media, textbooks and other learning sources, information and communication technology, and other required tools as the property of the school. Since the adequacy of access to technology is provided in *SSN*, practically, teachers should optimize the technology to support the teaching and learning process to be conducted effectively. Therefore, the use of YouTube in teaching and learning speaking skill is feasible to apply.

## **2 Discussion**

### **2.1 Characteristics of YouTube**

Established in 2005, YouTube has become the most successful Internet site providing a new generation of short video sharing service (Cheng, *et.al*, 2007). YouTube is an online video repository in which nearly any digital video file can be stored and exhibited free of charge (Watkins and Wilkins, 2011:13). It is a website where people can find all sorts of videos which people have made of themselves, others, of TV shows, etc. and have put on the web for everyone to see.

There are some characteristics of YouTube that should be known by teachers and students to help them using YouTube to teach and learn speaking. There are three features explained here; the welcome screen, playing a video, and searching for a video. When the website is opened, there will be welcome screen containing many framed pictures based on certain categories. Each of the framed pictures is a link to a video. Next to each video there is some information on it; the name of the video, how many times it was viewed (1,582,449 views), how long ago it was uploaded (5 months ago). In the right bottom corner of each frame, there will be a number which shows the length of the video in minutes and seconds (3:41). The length of YouTube videos is the biggest difference from traditional media content servers. Whereas most traditional servers contain a small to medium number of long videos, YouTube is mostly comprised of videos that are short clips. After that, videos will be played by clicking on any of the pictures in the frames. Finally, people can search for a video by entering some keywords in the search window on the top of the page. Typing the appropriate keyword is sometimes helpful to use the search suggestions.

### **2.2 Practical Use of YouTube in Teaching Speaking**

In order to create appropriate atmosphere in teaching English, teachers should start consider YouTube as one of the accessible and greatest media to collect additional teaching resources. Especially in Indonesian context which puts English as a foreign language, teachers could take it to account as their efforts to bring authentic audiovisual material in the classroom. This concept can be best implemented for teaching speaking because by utilizing video, students are helped to gain correct examples of pronunciation, dialogs, expression and concrete situation where the language context should be played on.

### **2.2.1 Bring the Videos as the Teaching Material**

These are basic directions that can be considered in selecting the video as teaching material. As an essential first step, decide a specific English component for teaching speaking. Identify the aspect of the language that should be practiced or mastered by students. For instance, in teaching greeting dialog for formal and informal situation, teachers should be able to provide two kinds of those different context through the video. Teachers can analyze together with students the different component of the language use. Video can also be functioned to present a case or issues to discuss for practicing speaking. In other words, select a video that helps students to understand concretely and stimulate them to practice the new aspects given specifically or generally. The reliability and validity of the material in the video should also be paid attention. It can be started by doing some screening of the content, how many times it was viewed, what were the feedbacks about, and how long it was uploaded. All of these details can be used by teachers as recommendations to pick the right video the fits to students' level and current issues.

### **2.2.2 Exhibit Students' Best Videos in the YouTube**

Teachers can also ask students to record what they have practiced in the form of short movie or song clip that based on the classroom project. Whether it is individual or group work project, this may bring students to explore more about what they have learned and apply the suitable context to use the language component in the real-life setting. In addition, students are also given space to give their best in producing the video with the excellent and creative concept, so it will direct them to have meaningful learning in speaking. Due to this, teachers can maximize the facility of YouTube to display the students' work. It aims to exhibit, to give appreciation, and also to have evaluation for their masterpiece. Students can learn from the viewers' comments and feedback of their English language production. Therefore, this kind of indirect assessment hopefully can make them proud or motivate them in learning.

### **2.3 Advantages of Using YouTube in Teaching Speaking**

There are a lot of advantages for teaching and learning process by using YouTube as the instructional tools in teaching speaking. Students might be supported with correct examples of pronunciation, accents, dialects or other part of language aspects form native speakers of English. Here, they can also study the language function and expression in the contextual situations. Presenting material with video can enhance students' creativity in learning. It may develop students' ability in understanding the lesson not only through a lecture, paper, or pen media, but more on complete and concrete explanations. Moreover, it can display situations in which students have not experienced in their real-life, such as diverse cultures or daily interactions of foreigners of English speaking countries. It gives more attractive and interactive learning atmosphere because of its ability to stop, start, and rewind flexibly, teachers can challenge students with questions, asking their responses, or discuss some highlighted components of the video.

### **2.4 Factors for Effective Use of YouTube**

Based on the benefits from the use of technology in teaching, teachers in Indonesia, particularly English teachers, should start utilizing video as their tool in conducting teaching and learning process. As a prior to maximize YouTube as instructional tools in English language teaching, there are some factors that should be considered for the effective use of YouTube. The first factor is teachers' awareness of the paradigm shift of language teaching

which is affected by the needs of technology used in this globalization era. Understanding what skills or abilities that students should possess in this challenging era leads teachers to develop their skills with in utilizing technology and internet resources. It means that they know why using video in teaching speaking becomes important, not only because of following trends in educational environment without making sense reasons behind it. Thus, teachers are suggested to beef up their competences in operating technology and managing appropriate teaching resources from internet especially YouTube.

The next is teachers should identify how videos from YouTube can be used to meet specific objectives within the English curriculum to improve students' attainment. Since there are a lot of forms of videos in YouTube, teachers should smartly pick the appropriate video based on the characteristics of learners, the level of difficulty, the relation with learning objective, the authentic use of the target language and cultural schemata. As an example, English kids video in the form of songs or animation movies can be more effective to apply in primary school than secondary school since young learners' attention can be grabbed easily by playing such videos. Another example is watching movie in the classroom is best applied to provide contextual use of the language beside improving students' speaking and listening ability.

The other aspect that should be taken into account is students' ability and access in using computers and internet outside the classroom. Teachers are required to control how students take benefits from YouTube in the school. Teachers should introduce the terms and condition of using it wisely. The collaboration with parents is also need to be increased as the controller to keep their children in the right track for learning autonomy at home. However, not all students in Indonesia are accustomed to use sophisticated technology because of socio-economic factor or the unavailability of the equipment in their area. In facing such cases like this, teachers may use the video as the media in classroom only, not for self-studying outside classroom. Utilizing video from YouTube is only applied as a helping aid to enhance teaching speaking in the classroom. In consequence, teachers should reckon all aspects related to teaching and learning process before bringing video as teaching material in English language teaching especially in teaching speaking context.

### **3 Recommendations and Suggestions**

There are several recommendations and suggestions offered regarding the utilization of information and communication technology (ICT) by providing videos from YouTube in English language teaching in Indonesia. As a developing country, government should concern the education development, especially in information and communication technology aspect. The Ministry of Education in Indonesia is suggested to socialize the application of technology in schools like National Standard Schools (*SSN*) which have advanced technology in their facilities. The socialization should include what ICT is and how to construct materials by browsing appropriate teaching material through internet resources. To realize government program, schools should provide computers and internet connection facilities for students in the classroom as the tools for collect additional materials or exhibit their work in their social media. Although in reality the teachers who have joined the socialization will still get difficulty to use technology since they do not get a lot of exposure to advanced technology, they can collaborate with IT (Information and Technology) experts to learn how to take benefits of YouTube wisely to support the teaching of speaking in the classroom.

In addition, the results of research and development which are conducted by university students, particularly from English Language Teaching and Information and Technology disciplines, could be used for teaching material or practice which specifically in the form of digital videos. Schools can buy programs or software produced by university students so that teachers can implement the videos in the classroom practice that fits to teach speaking. A suggestion is also proposed to universities in Indonesia especially English language teaching

program. They should introduce technology and internet use during the course together with the needed terms and conditions of the copyright and to avoid plagiarism to students, so that they who become future teachers will get accustomed to maximize technology and internet wisely.

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# A Critical Review of Environmental Education Empirical Research in Indonesia

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## ABSTRACT

Indonesian Government has already expanded their strategy to solve environmental issues by imposing a national program of Adiwiyata in formal education. This substantial strategy is aimed at improving attitude of locals toward environment and raise concern on environmental issues by educating students through formal educations, which subsequently influence their parents to conduct similar behaviour toward environment. Several journals, reports and articles that explore about Adiwiyata Program and environmental education will be undertaken in this review to conduct more comprehensive analysis about an on-going process of Adiwiyata Program in Indonesia as part of environmental education. This article focuses on addressing some shortcomings on several studies and performs grounded understanding on what specific ideas that have not been undertaken on both learning and learners from the reviewed studies. It takes scrutiny analysis of some reports, journals and books related to Indonesian environmental education / Adiwiyata. The evidences from several sources are discussed in several sections to yield more knowledge about environmental knowledge and attitude of students and whole process of Adiwiyata Program.

Keyword: *environmental education, Adiwiyata, and empirical research*

## 1. INTRODUCTION

Adiwiyata is a national strategy under legal law No: Kep 07/MENLH/06/2005 and No: 05/VI/KB/2005 issued by the ministry of environment in 2006 following collaboration between Ministry of education and ministry of environment In a form of awards to appreciate attempts made by schools to implement environmental education on basis of some given criteria but not entirely meant for competition (Manurung, 2011). Initially it was implemented on schools in Java islands which later expanded across provinces in Indonesia in 2007 (Manurung, 2011) to preserve nature and overcome environmental issues. This focuses on promoting awareness among students and stakeholders in schools to care and solve environmental issues for supporting sustainable growth and usually comes with various environmental-basis activities such as boy scouts, waste management, Saka Taruna Bumi, flood management, and so forth. (Desfandi, 2015).

According to Nurhjani (2009), environmental education in Indonesia often comes up with several aspects, including cognitive aspect, affective aspect, psychomotor aspect and interest aspect and meet two basic principles of participative and sustainable (Manurung, 2011; Yustina, 2011 & Nahadi, Wiwi & Farida, 2014; Desfandi, 2015) . As legal law issued by the ministry of education no 008C/U/1975 that urges the implementation of environmental students among primary schools as a solitary subject yet explicitly found in any subjects by using a unified approach (Yusnidar, Dewi & Eva, 2015).

In almost a decade, some scholars in Indonesia have already performed studies related to environmental education which revealed some empirical evidences that may defy or even support the managements of environmental education in Indonesia. It urges the needs to review some empirical evidences to yield some ideas and suggestions that may benefit the on-going process of environmental education in Indonesia.

## 2. RESEARCH METHODOLOGY

For the purpose of the review, the authors conducted electronic searches, using combination of the following keywords: environment education in Indonesia, Adiwiyata program in Indonesia. These keywords were chosen since the intent of the systemic literature review was to identify and review research on the application of environment education in Indonesia's education setting.

The authors found that using those keywords provided too many results. Then, the authors considered only peer-reviewed articles (with quantitative, qualitative, and mix method focus) and published during 2010-2015 time period to include in this review.

After reading the abstract descriptions of the articles, the authors shortlisted 12 research articles based on consideration (a) their relevance to the implementation of environment education in Indonesia, (b) the time period 2010-2015 was selected to provide the most recent researches, (3) the number of the articles was considered due to limited time to analyze.

Once the database searching was complete, the authors examined reference lists of articles. Of the twelve research articles, six were from journals in the field of higher education, and the remaining six studies in the field of elementary level. Seven of the studies used qualitative, one used Classroom Action Research (CAR), one used Research and Development, one non-research article, and two used mix method of data analysis. Table 1 presents a summary of the relevant research studies.

**TABLE 1** Summary of the Relevant Research Studies

No	Title (year)	Methodology
1	Implementasi Pengembangan Kurikulum Berbasis Lingkungan Hidup dalam Program Adiwiyata pada Guru Sekolah Menengah Pertama (2010)	Qualitative
2	Program Adiwiyata dalam Pengelolaan Lingkungan Hidup (Studi Kasus SDN Panggang 04 Kabupaten Jepara Provinsi Jawa Tengah) (2010)	Qualitative
3	Kampanye SMP Muhammadiyah 1 Yogyakarta pada Program Semutlis Tahun 2010 dalam Menumbuhkan Kesadaran Warga Sekolah Terhadap Pelestarian dan Kebersihan Lingkungan (2010)	Qualitative
4	Evaluasi Program Adiwiyata di SMAN 11 Semarang (2013)	Mix Method
5	Waste Management Model-based Design Character in Junior High School as a tool of the Economic Empowerment (2014)	Qualitative
6	Implementasi Model Pembelajaran lingkungan Hidup Berbasis Konteks Berpendekatan Education For Sustainable Development dan Pengaruhnya Terhadap Penguasaan (2014)	R&D
7	Strategi Pembentukan Karakter Perduli lingkungan di Sekolah Adiwiyata Mandiri (2014)	Qualitative
8	Peran Serta Warga Sekolah dalam Mewujudkan Program Adiwiyata di SMP Wilayah Semarang Barat (2015)	Qualitative
9	The Implementation of 6M based Waste Management Module to Support Adiwiyata School Program (2015)	CAR
10	Mewujudkan Masyarakat Berkeadilan Perduli Lingkungan Melalui Program Adiwiyata (2015)	Non-research article
11	Implementasi Program Sekolah Adiwiyata (2015)	Qualitative

### **3. AN OVERVIEW OF THE EMPIRICAL EVIDENCES IN INDONESIAN ENVIRONMENTAL EDUCATION**

Almost a decade has environmental education existed in Indonesia yet practitioners of environmental education still meet some issues that rise during its implementation. As an example, a solitary subject of environmental education in Indonesia has not been developed due to shortage of time. In SMPN 2 Malang East Java, the absence of solitary subject of environmental education is a consequence of abundant compulsory subjects in curriculum 2013 (Krisnawati, Susilowati, Muhdhar, Rahman, & Budiasih, 2015) which gives no space for additional subject of environmental education.

Moreover, planning of environmental education among primary schools in Semarang is not entirely implemented as the materials are not compulsory subjects and not efficient for hitting the target (Manurung, 2011). The environment subject was arranged in local curriculum among primary schools and junior high school in Demak in monolithic approach and sustainable environment and implemented in good evaluation and curriculum (Sudarwanto in Manurung, 2011)

#### **3.1. Establishing Partnership with Local Communities and Other Institutions**

According to Maryono (2015), SMPN 1 Pacitan and SD Alam Pacitan make partnership program with the Ministry of health in training about public health analysis, supervising and helping people to manage waste on basis of 5S principle (reduce, reuse, recycle, replace and replant). Establishing partnership between other institutions is necessary and already made by some schools in Pacitan with Health ministry and other Adiwiyata schools for training activities, comparative study visit Maryono (2015)

SDN Panggan 05 Jepara (Manurung, 2011), SD Alam Pacitan (Maryono, 2015), SDN Manukan Kulon III Surabaya (Rahmah, Sjamsiar & Riyanto, 2014), SMAN 11 Semarang (Wahyuningtyas, Priyatno & Supratiwi, 2013) & SMPN 2 Malang (Krisnawati, et al, 2015) raise students awareness on environmental issue by developing some outdoor activities such as growing plants, waste management, water management and so forth. These activities bring powerful message to students because they are more enthusiastic undertaking some outdoor activities (Krisnawati, et al, 2015). The activities prompt students' awareness on some local issues and recognize the power of such collective actions to make significant change (Eames & Rachel, 2004) because allowing students to make decision by persuading them for more practical solutions toward local issues could enact power to preserve nature (Moser in Gaillard et.al., 2009).

People always looks for social validation (Cialdini in Gaillard et.al., 2009) that encourages them for doing certain thing that a majority of people have already made. By developing self-efficacy of students to overcome environmental issues, it subsequently brings large impact on making people doing the similar thing (Collective change) (Moser & Diling in Gaillard et.al., 2009). Therefore establishing partnership with local communities and other institution is an important strategy of environmental education as found in some junior high schools in Malang city that already made partnership with BSM (Bank Sampah Malang) to build knowledge about waste management for local students (Dwipasari, 2014). The more people get involved, the more they will talk about it. Subsequently the more people are willing to do similar activity which possibly creates a collective goal.

### **3.2. Teachers' Issues in Environmental Education**

Less cohesive collaboration among teachers and less competence on developing environmental basis curriculum are several crucial issues that halt the success of Adiwiyata within school of SDN Manukan & some junior high schools in Riau province (Yustina, 2011; Rahmah, Sjamsiar & Riyanto, 2014 ). Teachers likely have varied arguments and understandings of practicality that encourage less collaborative teamwork among teachers. Setting a benchmark to accommodate differences is an effective way to anticipate the emergence of issue. In other case, a gap between expectation and reality often creates a challenging issue for teachers in the implementation of environmental education because of inequality of expectation and actual teaching practice of teachers (Robertson and Krugly-Smolkska in Davis & Julie, 2003).

### **3.3. Some empirical research of environmental education in Indonesia**

According to Yustina (2011), developing curriculum for curricular activities within school could bring positive impact on the achievement of Adiwiyata, in which has not yet undertaken by teachers who failed to create such activities in accord with the vision, mission and goals of schools. Yet the policies designated by stakeholders are not successfully implemented due to challenges and unpredictable change. Thus, strong commitments need to be established among stakeholders to actively participate in achieving the goals. (Yusnidar, Dewi & Eva, 2015).

Teachers are urged to explore their creativities on developing learning media, as Yustina et al (2010) showed by integrating environmental subjects that works with learning model could develop positive attitude toward environment among students, constructivism learning model could improve knowledge and positive attitude of environment among students.

Extracurricular activities encourage students to be aware on environmental issues. Being active participants in extra-school activities like waste management, growing plants, electricity & water saving training and other social activities with local communities could effectively encourage students to be a real problem solver on environmental issues (Roswita 2010). According to Desfandi (2015), the implementation of Problem Based Learning by using 6M waste management module shows moderate improvement on attitude and behaviour toward waste management.

Parental supports and some outdoor activities like outbound and scouts in SDN Tanjungsekar 1 Malang strengthen the structure of environmental education within school (Al-anwari, 2014). During the meeting, teachers encourage parents to have strong vision on the establishment of environmental school. Teachers are involved in a training activity to share knowledge about environmental issues and solution (Al-anwari, 2014)

### **3.4. Issues in the Implementation of Environmental Education**

The guideline of Adiwiyata program issued by the ministry of education no 2 year 2009 cannot overcome some dynamic challenges that arise during school preparations on Adiwiyata program (Yustina, 2011) and difficult to be implemented in schools (Maryono, 2015),. The indicators of success are not yet clear and evaluation system is still vague. Even the development of environmental basis curriculum is not yet comprehensive, ineffective and inefficient (Manurung, 2011) and cannot help overcoming problems related to evaluation system documents, physical assessment, curriculum development, documentations and policies (Maryono, 2015).

According to Maryono (2015), the headmaster already designed a local program on Adiwiyata by involving all stakeholders within schools yet the program was not entirely implemented. The notes about vision and mission seem to be left ignored without further actions by students and stakeholders within schools. (Yusnidar, Dewi & Eva, 2015). Also, facilities supporting environmental education are not yet accomplished, leaving the school with some problems regarding to environmental education. (Krisnawati, et. al, 2015)



Some schools in Indonesia such as SDN Panggan 05 Jepara (Manurung, 2011), SD Alam Pacitan (Maryono, 2015), SDN Manukan Kulon III Surabaya (Rahmah, Sjamsiar & Riyanto, 2014), SMAN 11 Semarang (Wahyuningtyas, Priyatno & Supratiwi, 2013) & SMPN 2 Malang (Krisnawati, et al, 2015) have already involved students with various outdoor activities such as planting trees, cleaning up litter, recycling and so forth yet we need to go beyond that superficial activities. Giving a range of outdoor activities to students as part of environmental education is not enough to lead them on achieving goal because without allowing them making planning and decision toward local environmental issues, they will not build self-efficacy toward environment (Fiend in Eames and Rachel, 2004). Students are encouraged to recognize real issues in local community to seek for possible solution as part of action competence (Breiting and Mogensen in Eames et.al., 2004).

Lack of participation between schools and local community (Desfandi, 2015) shows less capacity of environmental education to bring changes for better environment. According to Padolsky in Gaillard, Estella & Jo-Anne (2009), this comes from assumption that changes can be made from individual practices by giving a couple of suggestions that everyone could do to achieve the target. Yet it is not enough to overcome global environmental crisis (Princen in Gaillard et., al, 2009). It should be more than just performing individual action such as recycling and planting trees and so forth, it should deal with dynamic interdependence approach in the implementation of environmental education because it deals with social crisis, not individual crisis, to achieve a goal of collective transformation in society (Clover, Follen and Hall in Gaillard et, al, 2009).

#### 4. CONCLUSION

A lot of projects related to environmental education yield in insignificant impact and small change because school change actually means changing school's culture which cannot give quick result (Davis et.al., 2003). Thus, an urgent need to go beyond ordinary for creating larger and more significant impact within environmental project should be developed. Some ideas from recent theories focus on the emotional frameworks of teachers, teachers' strategies on making relationships within school and larger collaborative relationships between schools and some communities (Davis et.al., 2003)

Teachers play key role on the successful projects within school. Teachers need to be more optimistic on the view of goals. During the implementation of environmental education, some challenges and difficulties may change their belief and professionalism to easily give up due to intense of uncertainty and ambiguity (Nias in Davis et.al., 2003).

The small change is not necessarily considered as failure as it acts as a stepping stone for larger scale impact of educational change. The change is not revolutionary, but evolutionary that is impossible to happen in short time (Davis et.al., 2003). The changes may take longer time as small-scale change within school will pile up into collective success among schools. Teachers, environmental practitioners and other stakeholders need to be patient for achieving larger scale impact toward environment.

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# STUDENT'S CREATIVE REASONING IN SOLVING PATTERN GENERALIZATION PROBLEM: A CASE STUDY

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## ABSTRACT

The aim of this study is to describe the creative reasoning of student in solving pattern generalization problem. This research is a case study on a 7<sup>th</sup> grade student. In analyzing the data, a qualitative approach is used. The results showed that student was flexible in solving problem using two different ways. Student gave novel solution, meaning that the solution was neither from his friends, teachers, books, nor his learning environment. Student used his original idea to find the solution by determining the pattern of matchsticks on the n-square figures. Student gave the argument based on intrinsic mathematical properties and was able to justify that the conclusion was true. Therefore, student was considered to apply the creative reasoning.

**Keywords:** *Creative Reasoning, Pattern Generalization Problem, Intrinsic Mathematical Properties*

## Introduction

Mathematical reasoning becomes an important topic to be promoted for the student. The student needs to reason and develop the reasoning inside their mind [1]. Kamol & Har [2] said it is necessary to know how the student's way of thinking and reasoning to increase student's learning achievements in mathematics, especially in student's success in solving mathematical problem.

Mathematical reasoning is related to logical thinking process to reach the conclusion in problem solving. According to Rofiki [3], mathematical reasoning can be considered as a logical thinking process to develop student's understanding or deep insight. Furthermore, Rofiki [3] reveals that mathematical reasoning is very important because it is the foundation for student's mathematical understanding. By mathematical reasoning, mathematics can be understood by student meaningfully.

In fact, many students learn by memorizing without meaningful learning effort. Lithner [4] finds that many students still do rote learning method and thinking algorithmic. It is the main factor that cause student's learning difficulties ([5], [6], [7], [8]). Schoenfeld [9] also reveals that many students learn mathematics by remembering procedure and formula without comprehending. This explains that student's thinking or idea is not original.

Relating to the original solution made by student, Lithner ([4], [10], [11], [12]) characterizes mathematical reasoning into two reasoning, i.e. creative reasoning and imitative reasoning. The creative reasoning and imitative reasoning are the theoretical construction of reasoning as student's thinking process in solving mathematical task [13]. The basic idea in Lithner's framework is rote learning as imitative reasoning, while the idea of creative reasoning is the creativity in task solution which is new, flexible, and based on plausible argument and intrinsic mathematical properties. This creative reasoning does not refer to superior thinking, but a simple and original creative reasoning for the individual who makes the solution. Therefore, the creative reasoning is opposite to the imitative reasoning.

The reasoning in problem solving is called as creative reasoning ([4], [10], [11], [12]) if it fulfills these requirements: 1) Novelty, the reasoning of solution that the student makes is new for him or her. Imitating an answer or a solution procedure is not considered as novelty; 2) Flexibility,

the student is fluent in making different way. The student is be able to create more than one way or strategy; 3) Plausibility, the argument given by the student supports strategy choice and/ or strategy implementation, clarify why the conclusion is true and plausible; and 4) Mathematical Foundation, the argumentation is based on intrinsic mathematical properties from the component involved in reasoning. The intrinsic mathematical properties refer to relevant mathematical properties for problem solving and it is admitted by mathematical society. The opposite of intrinsic mathematical properties is surface properties. Surface properties do not have or have a little relevance for problem solving.

An argumentation can be related to one of intrinsic mathematical properties or surface properties, and the relevance of mathematical properties depends on context [3]. For example, in the task to determine a greater fraction between  $\frac{24}{32}$  and  $\frac{5}{4}$ , the numerical values (24, 32, 5 and 4) are surface properties which is not considered enough in problem solving while the result of fraction is intrinsic mathematical properties [3]. Student's argumentation that  $\frac{24}{32} > \frac{5}{4}$  because (24 and 32) > (5 and 4) is not true. The right answer is  $\frac{24}{32} < \frac{5}{4}$  with the argumentation that  $\frac{24}{32} = 0,75$  and  $\frac{5}{4} = 1,25$  so that  $0,75 < 1,25$ .

The creative reasoning can appear when the student solve non-routine problem, since there are no solution schemes available immediately so that the creative reasoning has to be constructed to solve the problem. The way to describe student's reasoning in every problem solving of mathematical task is by structuring student's reasoning in 4 stages. They are 1) problematic situation faced by student, 2) strategy choice, 3) strategy implementation, and 4) conclusion ([4], [5], [6], [7], [8], [10], [11]). This reasoning structure describes the line of student's reasoning in solving mathematical task from facing the task until inferring the result [3].

The research of creative reasoning in problem solving gets the attention in the field of education research. Jonsson et al. [14] compared creative reasoning approach with imitative reasoning especially in algorithmic reasoning. The result showed that creative reasoning approach is more effective than algorithmic reasoning approach in attaining memory and knowledge construction. Palm, Boesen, & Lithner [15] examined the mathematical reasoning required to solve the tasks in Swedish national exam and Swedish teacher-made tests. The result explained that a few tasks in teacher-made tests promote creative reasoning and consider intrinsic mathematical properties involving in the tasks. On the contrary, most of tasks in national exam promote creative reasoning. A series of studies conducted by Lithner ([10], [11], [12], [13], [16]) showed that most of students used imitative reasoning in solving mathematical problems than creative reasoning. The series researches have documented student's difficulty in solving mathematical task and students used superficial reasoning.

In this research, the problem solved by the student relates to pattern generalization. The generalization is essential component in mathematics ([17], [18], [19], [20]). The requirement for identify, express, and justify the generalization is the core of mathematical thinking [21]. Generalization gains attention significantly in mathematics at all levels of school ([17], [20]). The pattern generalization problem becomes the main competence of school mathematics in many countries ([22], [23]). In the curriculum of school mathematics, pattern generalization includes to the component of algebra. Sasman et al. [24] explains that number pattern, the connection between variable and generalization is important component in algebra. Pattern exploration task can contribute the development of student's problem solving, through the emphasizing analysis in certain cases, data preparation systematically, conjecturing and generalizing [25].

Pattern generalization becomes focus of study for some researchers [3]. The research of Rivera & Becker [26] examines student's ability in expressing and justifying linear pattern generalization. The result shows that the student determines the generalization as figural, numeric and symbolic. While the research of Breiteig & Grevholm [27] reveals student's solution in certain task, involving in numeric part and generalization. Breiteig & Grevholm [27] investigates whether the student can solve the problem given, explain the solution and justify why generalization problem always can be solved.

The finding of Breiteig & Grevholm’s research [27] shows that the student rather choosing to explain verbally than symbolically. Some students can give reasonable justification for the solution of generalization problem but many others still obtain difficulties in justifying generalization problem [27]. In line with the finding, the research of Sasman et al. [24] also explains that the students get difficulties to find the solution of generalization problem and most of them present invalid justification, because the students do not realized the data role or information given in the problem. Whereas the result of Rofiki’s research [3] shows that the student solves the pattern generalization problem using imitative reasoning with type algorithmic reasoning. The student memorizes and applies the algorithmic in the book and uses the formula given by the teacher.

The aim of this study is to describe student’s creative reasoning in solving pattern generalization problem. The result can be used by the teacher as guidance in setting the learning strategy to train or improve student’s creative reasoning. Besides, the result of this study can become a reference for researcher relating to creative reasoning and pattern generalization.

## Method

This research is a case study with a qualitative approach. The research subject is a 7<sup>th</sup> student with ANW initial (boy). He won a bronze medal in the International Mathematics Contest (IMC) Singapore. Empirical data collection was obtained by giving pattern generalization problem to the subject. The researcher asked the subject to explain clearly what the subject thought when he got the problem at first until found the solution. Subject’s verbal expressions and behaviors are recorded by the researcher, including the unique things he did as solving the problem. This type of data collection is called by Think Alouds ([28], [29]). Another researchers call it as think-aloud ([30], [31]), Think-alouds [32], think aloud [6], or Think Out Loud/ TOL [33]. Think aloud is a method developed by the cognitive psychologist in order to learn how someone solves a problem [28]. This method can be used to explore student’s cognitive process or student’s thinking process which is not be able to observe when the student solves a problem. After think aloud activity was done, the researcher did the interview to reveal deeply about subject’s creative reasoning. In the interview process, the researcher asked the student to justify and explain what he have done and give the reason why he answered so. In addition, the researcher also recorded subject’s conversation and behavior in interview process. After the data was completed, the researcher transcribed the result of think aloud and interview’s recording. Then the researcher analyzed the data based on the result of written test, think aloud and subject’s interview, and made subject’s reasoning structure.

## Instrument

The instrument in this research was developed from the problem in the research of Jonsson et al. [14]. The given instrument to the subject is a pattern generalization problem as showed in Picture 1 below.

Look at the picture below!



The picture shows 4 squares formed by 13 matchsticks. How many matchsticks do you need to make  $n$  squares?

Picture 1. The problem given to the research’s subject

## Result and Discussion

According to the result of written test, think aloud and interview transcript of the subject, the first activity done by the subject after receiving the problem was that subject read the problem three times. The reason is in order to understand the informations in the problem thoroughly. Subject wanted to convince that he reads the information in the problem well. A problematic situation faced by subject appears when he tried to understand problem’s question. The subject did not know the steps to determine the number of matchsticks in  $n$  squares yet. After the subject thought hard

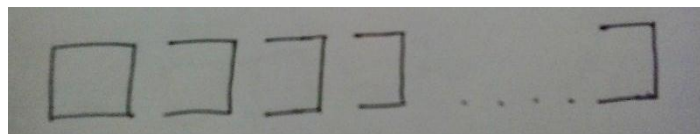
enough, he matched the information in the problem with the picture. The strategy done by subject was calculating the number of matchsticks in 4 squares manually by pointing with index finger. Then, subject thought what he should do to determine the number of matchsticks to make  $n$  squares. Subject's response here is showed by transcript of interview below.

- S: *I have to know the way to determine this* (subject points the question of problem)  
 R: *So what will you do?*  
 S: (subject is silent a second, while thinking the solution) *What strategy should i use to solve the problem?*  
 \*S = subject and R = researcher

In the strategy choice, subject observed and calculated the number of matchsticks required to make 4 squares, 1 square, 2 squares, 3 squares, and  $n$  squares. Subject found a pattern formed in the problem. Subject's respons here is showed by transcript of interview below.

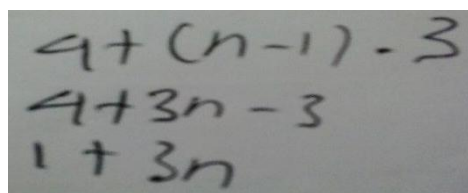
- R: *What is your strategy to solve the problem?*  
 S: *First, i count the number of matchsticks need to make 4 squares, 1 square, 2 squares, and 3 squares. Seems it has a pattern. I look it in the picture of squares. To find the number of matchsticks in  $n$  squares is finding the pattern appeared in the problem.*  
 R: *How do you know that it can be solved by the pattern?*  
 S: *It is from the formation in the picture. It makes a pattern. I divided the picture into some parts. 1 square needs 4 matchsticks. 2 squares need 4 plus 3 matchsticks. 3 squares needs matchsticks in 2 squares plus 3, and later also plus 3.*

In the implementation strategy, subject counted the matchsticks required to make 4 squares, 1 square, 2 squares and 3 squares are 13, 4, 7 and 10, respectively. Then, subject made the model for the problem as the picture. Written answer of subject which supports the statements above is showed at Picture 2 below.



Picture 2. A written answers related to modeling problems as a picture

Subject figured a pattern formed in the problem. The subject analyzed that it needs 4 matchsticks to make 1 square, 4 plus 3 matchsticks to make 2 squares, 4 matchsticks in 2 squares plus 3 matchsticks to make 3 squares, and so forth. Furthermore, subject determined the number of matchsticks required to make  $n$  squares by using the pattern. Subject got the result  $4 + (n - 1)3 = 4 + 3n - 3 = 1 + 3n$ . Picture 3 below is a written answer of subject which supports the statements above.



Picture 3. A written answer about the matchsticks required to make  $n$  squares

Subject could explain and give the reasonable arguments about the result  $1 + 3n$ . He explained that  $4 + (n - 1)3$  is from 4 plus 3 matchsticks in  $(n - 1)$  times. After that, subject ANW simplified  $4 + (n - 1)3$  to  $4 + 3n - 3 = 1 + 3n$ . The argumentation given is based on intrinsic mathematical properties. Subject's respons here is showed by transcript of interview below.

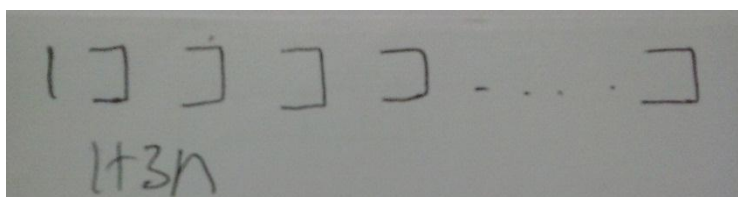
- R: *Please, explain how do you get  $3n + 1$ ?*  
 S: *I look it at the picture* (subject points the written test result). *Then i look at the pattern if 1 square only needs 4 matchsticks. There is no 3 matchsticks form. For 2 squares, it needs 4 matchsticks and 1 picture of 3 matchsticks. For 3 squares, it needs 4 matchsticks and 2 pictures of 3 matchsticks. For 4 squares, it needs 4 matchsticks and 3 pictures of 3 matchsticks. For 5 squares, it needs 4 matchsticks and 4 pictures of 3 matchsticks. The number of 3 matchsticks' picture always decreases one from the number of squares.*

*Therefore, if there are  $n$  squares, the number of 3 matchsticks is  $n-1$ . And it has 4 matchsticks before, so it means  $4 + (n-1)$  times 3. Then,  $(n-1)$  times 3 equals to  $3n-3$ . I add 4 +  $3n-3$  equals to  $1 + 3n$ .*

R: *Why does  $(n-1)$  time 3?*

S: *It is because the number of 3 matchsticks is  $n-1$ . This is same as determining 3 times 5 means the number of 5 is 3.*

Subject concluded that the number of matchsticks required to make  $n$  squares was  $1 + 3n$ . The subject was able to give a different method from before. He solved the problem by modeling the problem as picture. From this picture, subject found a pattern to determine the number of matchsticks in  $n$  squares. Subject given the reasonable argument that, there are  $1 + 3$  matchsticks in 1 square,  $1 + 3 + 3$  matchsticks in 2 squares,  $1 + 3 + 3 + 3$  matchsticks in 3 squares, and  $1 + 3 + 3 + 3 + 3$  matchsticks in 4 squares. By looking at the pattern, subject found the generalization that, there are 1 plus 3 matchsticks for 3 times in  $n$  square. The pattern generalization found by subject was  $1 + 3n$ . Written answer of subject which supports the statements above is showed at picture 4 below.



Picture 4. The written answer about the second strategy

The answer stated by subject was a new thing for him. Subject did not get the solution from books, teachers, friend or his learning environment. The answer of subject was original. It came out when the subject thought about the problem solving. Therefore, subject fulfills the novelty criterion. Subject's respons here is showed by transcript of interview below.

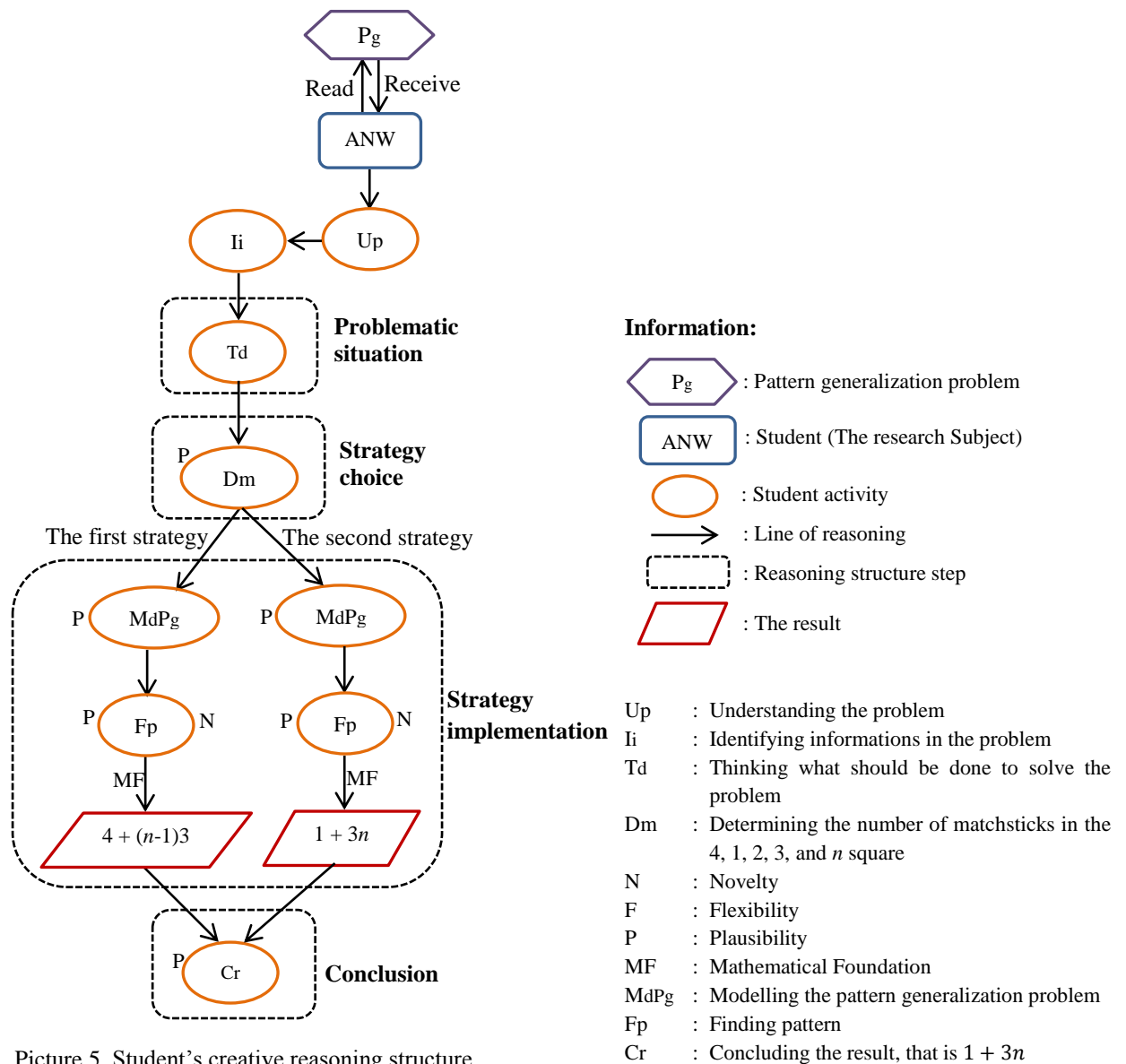
R: *Do you ever get this solution before from books, internet, teachers, friends or your learning environment?*

S: *No. I never meet this kind of problem. I think the solution by myself. (Subject points to the question). I think that I can answer it using the pattern and relating it to the picture.*

Subject also fulfills the flexibility criteria because subject can give 2 different ways or strategies to determine the pattern generalization in the  $n$  square. The arguments is also plausible and based in intrinsic mathematical properties. Because subject fulfills novelty, flexibility, plausibility and mathematical foundation criteria, therefore according to Lithner's reasoning framework ([4], [10], [11], [12]) subject was considered to apply the creative reasoning in solving the pattern generalization problem. Another unique finding is that subject can convince the researcher that his solution is true. The reason he stated is "*i am sure that the answer i got is true because i can get the same results in 2 different strategies to solve the problem*". This is appropriate with Polya's opinion [34] that, two different methods in problem solving can be used to prove the truth of the answer.

Furthermore, the researchers will make the student's reasoning structure. Based on the results and the discussion, the student's reasoning structure is presented in Picture 5 below.





Picture 5. Student's creative reasoning structure

### Conclusion

According to the result of research and discussion, it can be concluded that the student applies the creative reasoning in solving the pattern generalization problem. Student's creative reasoning structure is : 1) a problematic situation faced by the student appears as thinking what he should do to answer the question, namely finding the number of matchsticks need to make  $n$  squares; 2) in the strategy choice stage, the student uses 2 strategies to determine the number of matchsticks in  $n$  squares; 3) in the strategy implementation, the student models the problem as the picture. The students calculates the number of matchsticks need to make 4 squares, 1 square, 2 squares and 3 squares firstly. Then the student determines the number of matchsticks in  $n$  squares by using the pattern found in the picture. In the first strategy, the student finds  $4 + (n - 1)3 = 4 + 3n - 3 = 1 + 3n$  matchsticks whereas in the second strategy, the student finds  $1 + 3n$  matchsticks; and 4) the conclusion which is obtained by students is  $1 + 3n$ .

Another finding of the research is the student assures that the answer he got is true and he gives the reasonable argument to show the truth of the answer by using two different methods in a same problem, it will get the same answer in the end. Therefore, in a learning process, the teacher should develop the student's flexibility ability as way of thinking to recheck the solution whether the answer got is true or not and in order to make the student accustomed in proving the truth of the answer.

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# The Effect Students' Perceptions of Teachers Teaching Style and Student Learning Styles of Student Learning Outcomes on Economic Subjects

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## ABSTRACT

This study focuses on the class XI IPS which has a minimum completeness criteria was 81 on economic subjects. Based on the daily test class XI IPS, it is known that the learning outcomes Economy class XI IPS has not achieved optimally. This study aims to analyze and describe: The influence student's perception of the teacher's teaching style to the student learning outcomes, influence student learning styles to student learning outcomes, as well as the influence of teachers' teaching styles and learning styles of students to the learning outcomes of students. This type of research in this study is a correlational study using a quantitative approach. This study took a sample of 102 students of a total population of 137 students. Based on the results of statistical analysis of the data that has been presented and in accordance with the formulation of the problem, the results showed that the subjects the teacher's teaching style economy and learning styles of students of class XI IPS together have an influence the learning outcomes Economy class XI IPS SMA Muhammadiyah 2 Sidoarjo. While the results of the study showed declare 37% change in the value of learning outcomes are influenced by two independent variables, namely the perception of students about teaching styles of teachers and students' learning styles, while 63% change in the value of student learning outcomes are influenced by variables other than the independent variables used in this study.

**Key Words:** *Student's perception, teacher's teaching style, student learning style, learning outcomes.*

## 1. Introduction

Education has an important influence in the life of good upbringing formal and non-formal. Education has a vital role in our nation and state in an effort to create good quality human resource. In the act of number 20 of 2003 on the National Education System [1] said that education is conscious effort planned manner to realize an atmosphere of learning and a learning process that participants actively develop the potential of each himself to have the power of religious spiritual temperance, personal, intelligence their attitude noble, as well as the skills required his own the community of the nation and the country. The bureau national education standards explain that education in Indonesia that based upon pancasila and the constitution of the republic of indonesia 1945 serves to develop the ability and forming the temper as well as civilization nation with optimize learners potential to become a man who

has faith and guard against evil to the lord of almighty god, kind, healthy magicians, ably, creative, independent being a citizen democratic, and responsible. Education includes various kinds of science and social one of which is economic. The bureau national education standards explains that education in Indonesia based on Pancasila and the Constitution of the Republic of Indonesia Year 1945 serves to develop skills and character development and civilization by optimizing the potential of learners in order to become a man of faith and fear of God Almighty, kind, healthy, knowledgeable, capable, creative, independent, become citizens of a democratic, and accountable. Education include a wide range of science and social studies, one of which is the economy.

The score of learning outcomes reflect the results achieved in terms of a person's cognitive, affective, and psychomotor. In the process of learning, there are many factors that affect the achievement of the value of student learning outcomes, whether originating from within the students (internal) or from the external environment (external). Internal factors related to discipline, responsiveness and motivation of students, while the external factor is the learning environment, learning objectives, creativity, media selection and learning by educators teaching methods. These factors influence each other and constitute the underlying unity student learning outcomes.

As explained by Jumardi (2014) [2] that the learning outcomes of students with higher visual learning styles of auditory learning styles. In the journal Khosiyah (2012) [3] also explained that the study results with a visual learning style more than in the auditory and kinesthetic learning styles. While in the journal Deswita, et al (2013) [4] states that the teacher's teaching style effect meaningful and positive impact on student learning outcomes.

Based on preliminary observations conducted by researchers at SMA Muhammadiyah 2 Sidoarjo, learning on the subjects of Economics in class XI, that researchers still have students who have difficulty in following the lessons, which in turn have an impact on their learning outcomes. The style of teaching is done by Economics teacher at SMA Muhammadiyah 2 Sidoarjo still using the style of teaching where the teacher is still active in teaching and learning activities. Teacher describes the material being taught by media power point which in turn will give the questions and tasks to be completed by the student. Students are also still having trouble adjusting the teaching style of teachers in schools with their learning style. Because every student definitely has a type different learning styles between each other. Likewise, at home, students sometimes have to learn in accordance with rules made by the parents, and students learn only when they will be implemented replications. The fact adversely affected the results of study subjects in class XI Economics.

SMA Muhammadiyah 2 Sidoarjo is a high school that has four classes in class XI IPS. This study focuses on the class XI IPS which has a minimum completeness criteria was 81 on the subjects of Economics. Economic learning outcomes can be determined by the value of daily tests were achieved by students of class XI IPS. Based on the daily test class XI IPS, it is known that the learning outcomes Economy class XI IPS has not achieved optimally, because there are many students who have not reached the minimum completeness criteria in the daily tests of Economics students.

The purpose of this study is to analyze and describe: 1) students' perceptions about the teaching style of teachers to student learning outcomes. 2) Students' learning styles to student learning outcomes. 3) Perceptions of students about teacher's teaching style and student learning styles to student learning outcomes.

According Hamalik (2013) learning is a process, an activity and not a result or goal. Learning is not just to remember, but more than that, the experience. From his statement above, it can be concluded that learning is a process of changing individual behavior through interaction with the environment. Effective learning is strongly influenced by factors conditional exist, including the factor of the activities in which the use and repetition, learning takes practice is by way of relearning, recalling, and reviewing, student learning is more

successful, students learn need to know whether he succeed or fail in their learning, association beneficial factor in learning, past experiences and notions that have been owned by the student, learning readiness factor, factor of interest and effort, physiological factors, as well as the intelligence factor.

Learning is a process to achieve the goal. Thus, the steps or procedures taken to achieve the objectives to be achieved. Learning can also be obtained from the experience of the interaction between the individual with the environment. The experience was as a source of knowledge and skills, sided education, which is a unity around the goal of learners, experience of education is continuous and interactive, personal help the integration of learners.

According Slameto (2010) [5], learning is a process attempts person to obtain a new behavior changes as a whole, as a result of his own experience in the interaction with the environment. Someone who learns to be aware of a change or at least it felt had occurred a change in him. As a result of learning, the changes that occur in a person take place on an ongoing basis, does not stop static. One change that will occur makes change and will be useful for life or next learning. These changes will continue to grow and fixed to obtain something better than before.

## 2. Methods

This type of research is a correlational study aimed to determine whether or not the variable influence students 'perceptions of teachers' teaching styles and learning styles of students to the learning outcomes of students. While the research approach used in this study is a quantitative approach because the research is intended to obtain information on the magnitude of the influence learning methods approach and frequently asked questions on learning outcomes of students on the subjects of economics class XI IPS SMA Muhammadiyah 2 Sidoarjo.

The population in this study were all students of class XI SMA Muhammadiyah 2 Sidoarjo totaled 137 students. This study took a sample based on the formula Slovin with an error rate of 5% (Arikunto, 2010) [6]. Sample collection technique using the technique of proportional random sampling technique, which takes part of the population of each class of the sampling is done by sequence number of students absent according to the number of samples required.

**Tabel 1. Sample Calculations**

Number	Class name	Total Students	Number of Sample
1	XI IPS 1	35	$35/137 \times 102 = 27$
2	XI IPS 2	34	$34/137 \times 102 = 25$
3	XI IPS 3	34	$34/137 \times 102 = 25$
4	XI IPS 4	34	$34/137 \times 102 = 25$
Total			102

(Source: Data processed)

The variables independent variable in this study is the students' perception of the teacher's teaching styles and learning styles of students, while the dependent variable in this research is student learning outcomes.

The operational definition of this research is the perception of students about the teaching style is the opinion of the students about the ways in which the teachers to interact with students appropriately so that the learning objectives can be achieved by either. Indicator measured through the attitudes and actions of teachers as well as the ability of teachers in teaching and learning activities, students' learning style is the key to developing the performance of the work, at school, and in interpersonal situations. If students understand their learning style, so students can take important steps to help him learn faster and more easily. Indicator measured through visual learning styles, learning styles auditory, kinesthetic

learning style and learning outcomes is the result of an interaction acts of learning and teaching acts (such as the value of daily tests).

There are several data collection techniques used in this study include: observation is a systematic observation and recording of the elements that appear in a symptom or symptoms of the research object. The interview is a method to take data by asking something to someone respondents, way is to converse face interviews. This research will be done using interview guideline. The questionnaire is a research method that must be answered respondents to express his views on an issue.

In the assessment questionnaire, used a Likert scale with four alternative answers that strongly agree, agree, disagree, and disagree. For the purposes of quantitative analysis of the answers need to be given a score that is very amenable given a score of 4, agreed to be given a score of 3, less agree was given a score of 2 and disagree are given a score of 1.

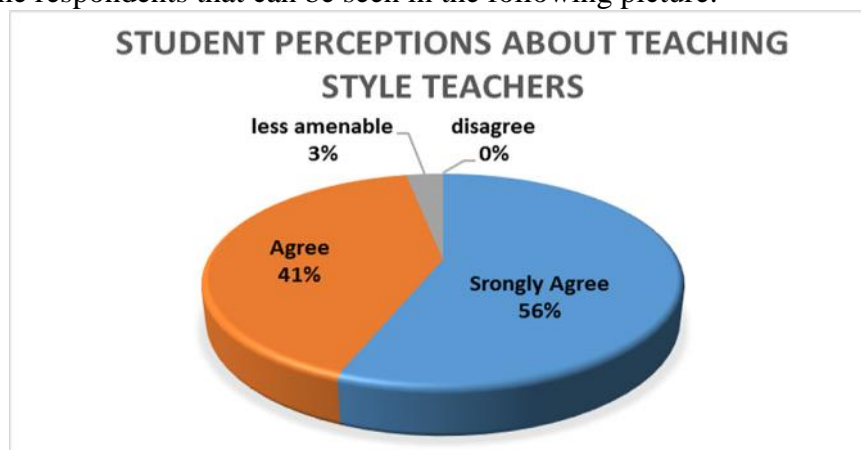
Questionnaire / questionnaire was developed with Likert model that uses four alternative answers. The data were then analyzed using multiple linear regression equation previously processed data with validity and reliability. Test the validity of the grains of the questionnaire was conducted using Pearson's Product Moment Correlation while the measurement reliability using Cronbach's Alpha formula (Ajija, 2011) [7].

Technique of the analysis of data, among others, the classic assumption test and multiple linear regression analysis. Classical assumption made in advance so that the data used in this study free from classical assumption because both the regression model is free from classical assumptions. Classical assumption test consists of normality test, multicollinearity, heteroscedasticity test, autocorrelation test, linearity test. Multiple linear regression analysis was used to determine the influence of students 'perceptions of teachers' teaching styles and learning styles of students to the learning outcomes of students in the subjects Economy class XI IPS SMA Muhammadiyah 2 Sidoarjo.

### 3. Results

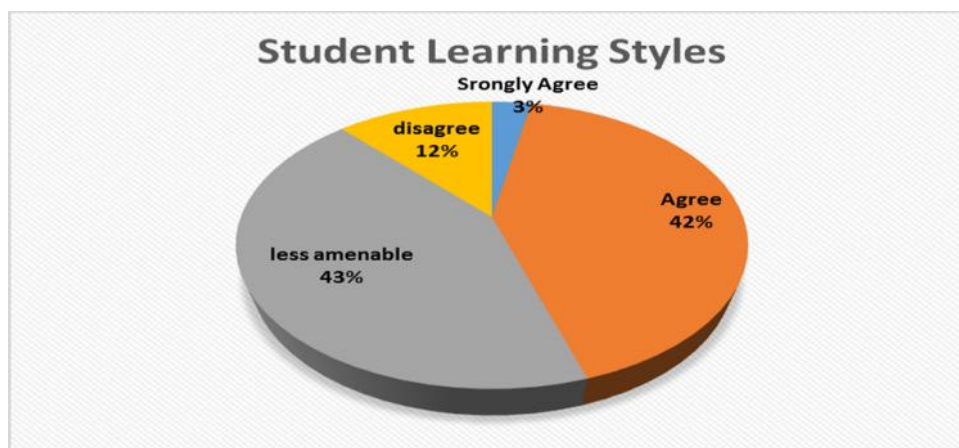
Based on the results of test instruments known that 34 question items used in this research instrument has a high validity. Similarly, the reliability test results showing that the research instrument also has a high reliability. Referring to the results of the test instrument, the instrument is compliant for use in research, so the next step you need to do is spread out a questionnaire / questionnaire to 102 samples have been determined. After the questionnaires distributed and returned to the researcher, then respondents processed in order to have meaning.

Based on the tabulated results of questionnaires / questionnaire that has been done, there are some respondents that can be seen in the following picture:



Picture 1. Respondents' answers on students' perceptions of teachers' teaching styles Economics

From picture 1 for the statement of variables X1, the answers of the respondents the most dominant is the answer to the value 3 (agree) with a percentage of 56%. To answer with a value of 4 (strongly agree) is approximately 41%, to answer with a value of 2 (less amenable) is approximately 3%, and to answer with a value of 1 (disagree) is at 0%. Variable student perception about teacher's teaching style is based on indicators of teachers' teaching style in the classroom. Indicators are described in item 12 statement. From the research, the highest score of the respondents amounted to 56% (agreed) and the lowest is 0% (disagreed).



Picture 2. Respondents' answers about student learning styles

Variable student's learning style is based on three indicators of student learning styles namely learning style kinesthetic. All three indicators each have 3 instrument that is characteristic of learning styles, characteristics of learning styles and learning styles approach where indicators are translated into 22 statement. Based on data from a questionnaire distributed to 102 respondents obtained answers of 3% strongly agree, 42% agree the answer, the answer is less agreed by 43%, and the answers do not agree by 12%. Based on these percentages, the highest score of the respondents are less agreed by 43% and the lowest was 3% strongly agree.

Data normality test calculation statistical data analysis in this study using the program Eviews 6 of normality can be concluded that the probability values of the independent variables and the dependent variable is equal to 0.725915 more than 0.05 so that the data in this study are normally distributed. From the test results it can be concluded that the variable multicollinearity teacher's teaching styles and learning styles of students have a correlation coefficient of 0.005317, which means less than 0.7. Thus the independent variables and the dependent variable in this study multicollinearity pass the test. From the test results it can be concluded that heteroscedasticity -value Obs \* Square <x2 table, that is equal to 33.74050 <125.458. Thus, the data in this study do not heteroscedasticity. From the test results obtained Durbin-Watson stat that the value of the Durbin-Watson stat 1.978765. Durbin-Watson test table above, sought first value dl and du at = 5% with n = 102 and k (the number of independent variables) = 2 ie dl = 1.6396 and du = 1.7175. From the linearity test results can be concluded that the F statistic, which amounted to 0.392301 <F table, that is equal to 3.09. Thus, the data in this study pass the linearity test.

The model used in this research is multiple linear regression model. Calculation of multiple linear regression analysis was conducted using Eviews 6. The multiple linear regression equation as follows:  $Y = 62.0117519063 + 0.613732870083 * X1 - 0.0182977799264 * X2$

In the multiple linear regression equation above, it can be analyzed as follows: 1) Constant value 62.0117519063 means if the variable X1 (teaching style) and X2 (learning styles) is 0 then the result is equal to 62.0117519063 learning. 2)  $+ 0.613732870083 * X1$  means that if a variable teaching force rose 1%, while the variable is constant learning style then the learning



outcome increased by 61.37%, while the positive sign (+) indicates the direction proportional relationship between students' perception of teaching style learning outcomes, i.e. if the students' perception of the teaching force increases, the study results also will increase.  $3) -0.0182977799264 * X_2$  means if the variable learning style rose 1%, while variable teaching style is constant, the results of learning declined by 1.83%, while the negative sign (-) indicates inverse relationship between learning styles with learning outcomes, i.e. if the learning styles increases, the study results will decline.

## 4. Discussion

### 4.1. Effect of Student Perceptions About Teaching Style Teachers Against Student Results

Based on the results of hypothesis testing that has been done, show the t value in Table 4.5 for the teacher's teaching style is equal to  $7.563325 > t$  table amounted to 1.66039 so  $H_0$  is received. This means that the independent variable student perception about teacher's teaching style ( $X_1$ ) partially have a significant effect on student learning outcomes dependent variable ( $Y$ ). So that it can be seen that the teacher's teaching style had an influence on student learning outcomes, and thus  $H_0$  accepted. Results of research conducted indicate that subject teachers teaching style economic impact on learning outcomes of students of class XI IPS SMA Muhammadiyah 2 Sidoarjo on the subjects of Economics.

Students' perceptions about the teaching style is a presumption students about a certain way that is done by the teachers for organizing and guidance of students' learning experience. Thanks to the learning experience, students acquire the knowledge, attitudes, or values, and specific skills in accordance with the form set out in the behavioral pattern of the goal. Teacher's teaching style differs from other teachers. Teacher's teaching style reflects the personality of the teacher. Such attitudes are difficult to change because of inherent or innate attitude of self. Teaching style is an important factor in learning activities because it can affect student learning outcomes. The results are consistent with the results of research conducted by Deswita, et al. (2013) [4], the results of which states that students' perceptions of teachers' teaching styles meaningful and positive impact on learning outcomes of Accounting.

### 4.2. Effect of Student Learning Styles for Student Results

Based on the results of hypothesis testing that has been done, show the t value in Table 4.5 to the learning styles of students amounted  $-0.359931 < t$  table amounted to 1.66309 then  $H_0$  is rejected. This means that the independent variable student's learning style ( $X_2$ ) partially have no significant effect on the dependent variable in student learning outcomes ( $Y$ ). So that it can be seen that the students' learning styles have no significant effect on student learning outcomes, thereby  $H_0$  rejected. Results of research have shown that students' learning styles are not a significant effect on learning outcomes of students of class XI IPS SMA Muhammadiyah 2 Sidoarjo on the subjects of Economics.

Student's learning style is the key to developing the performance of the work, at school, and in interpersonal situations. If students understand their learning style, so students can take important steps to help him learn faster and more easily. In this study, there are three kinds of learning styles is visual learning styles, learning styles auditory, and kinesthetic learning styles. Learning outcomes of students who have a visual learning style is not the same as learning outcomes of students who have auditory learning style. So is the learning outcomes of students who have learning style visual or auditory learning style is not the same also with the learning outcomes of students who have a kinesthetic learning style. Thus, learning styles in this study had no significant effect on student learning outcomes.

#### **4.3. Effect of Student Perceptions About Teaching Style and Style Master Student to Student Results**

Based on the results of hypothesis testing that has been done, it is known that students' perceptions about the teaching style of teachers significantly influence learning outcomes Economy class XI IPS SMA Muhammadiyah 2 Sidoarjo. Meanwhile, the students' learning styles not significant effect on student learning outcomes Economy class XI IPS SMA Muhammadiyah 2 Sidoarjo. In this study, there are three kinds of learning styles is visual learning styles, learning styles auditory, and kinesthetic learning styles. Learning outcomes of students who have a visual learning style is not the same as learning outcomes of students who have auditory learning style. So is the learning outcomes of students who have learning style visual or auditory learning style is not the same also with the learning outcomes of students who have a kinesthetic learning style. Thus, learning styles in this study had no significant effect on student learning outcomes.

Based on the value of the coefficient of multiple determination showed that 37% of the change in the value of student learning outcomes are influenced by two independent variables, namely the perception of students about teacher's teaching styles and learning styles of students. While the remaining 63% is influenced by other variables outside independent variables used in this study.

The results are consistent with research conducted by Deswita, et al. (2013)[4], the results of which states that students 'perceptions of teachers' teaching styles meaningful and positive impact on learning outcomes of Accounting. And the description of the frequency of respondent's variable students' learning styles are more answered less agree on the statement given by questionnaire.

#### **5. Conclusion**

Based on the research that has been done, it can be concluded as follows: 1) Based on the analysis of the data statistics that have been raised and in accordance with the formulation of the problem, it can be concluded that students' perceptions about the teaching style teacher of Economics in class XI IPS SMA Muhammadiyah 2 Sidoarjo has a significant positive effect on learning outcomes Economy class XI SMA Muhammadiyah 2 Sidoarjo. 2) Based on the results of data analysis statistically that have been raised and in accordance with the formulation of the problem, it can be concluded that the learning styles of students in class XI SMA Muhammadiyah 2 Sidoarjo have a negative effect no significant effect on learning outcomes Economy class XI IPS SMA Muhammadiyah 2 Sidoarjo. 3) Based on the results of data analysis statistically that have been raised and in accordance with the formulation of the problem, it can be concluded that students' perceptions about the teaching style of teachers of subjects Economy class XI IPS SMA Muhammadiyah 2 Sidoarjo and learning styles of students of class XI IPS SMA Muhammadiyah 2 Sidoarjo together -Same has an influence on learning outcomes Economy class XI IPS SMA Muhammadiyah 2 Sidoarjo. While the results of the coefficient of multiple determination stated 37% change in the value of learning outcomes are influenced by two independent variable is teaching styles of teachers and students' learning styles, while 63% change in the value of student learning outcomes are influenced by variables other than the independent variables used in this study.

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## DEVELOPING INSTRUCTIONAL PROGRAM OF PUBLIC ECONOMIC SUBJECT USING EXELSA MOODLE

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### Abstract

Advances in science and technology in education is a challenge in improving quality, relevance and effectiveness of education (Azrai and Refriman, 2013). Development of information and communication technologies allow for using electronic media. Forms of development of information and communication technology is e-learning. E-learning will support the learning happens in the classroom.

One of information and technology facilities in Sanata Dharma University is exelsa moodle. By using exelsa moodle, lecturer can interact with students without face to face. Lecturer give materials subject, tasks, and online assessment.

Based on this problems, the authors interest to develop the instructional program of public economic subject using exelsa moodle. The development of digital learning resources in the form of online materials, online tasks, online quizzes, online instructional videos and online discussion forum that can be accessed by students. Exelsa moodle can help students learn independently.

Keywords : e-learning, exelsa moodle, instructional program, public economic

### 1. Introduction

Improving the quality of education is a central issue in developing countries, especially Indonesia. Advances in science and technology in education is a challenge in improving the quality, relevance and effectiveness of education as a national demands in line with the development and progress of society [1]. The development of information and communication technologies allow for using electronic media in spreading information about learning. On of forms in development of information technology is e-learning. E-learning is an innovation that has contributed greatly to change the lecture , where the learning process is no longer just listen to the description of the material from lecturer but students also perform other activities such as observing, performing, demonstrating and others [8]. In a lecture, e-learning support the learning happens in the classroom.

One of information technology in Sanata Dharma University is exelsa moodle. By using exelsa moodle, lecturer can interact with students without face to face . Exelsa moodle allows lecturer give online material, online forum, online assignments , and online assessments. Exelsa moodle can help students to learn independently.

Public economic subject is one of important subject in Economic Study Program of Sanata Dharma University, Yogyakarta, Indonesia. This subject have a lot of materials characteristics. Based on the experience of lecturing public economic in previous periode, this subject is not easily for students. There are so many materials in this subject but only twelve meeting. It is requiring them to able to learn independently outside meeting. In order to be effective self-learning, lecturer need to prepare the learning resources that can lead students to learn independently.

Based on these problems, the author interest to develop instructional program of public economic subject using exelsa moodle. Exelsa moodle consider as one effective instructional program to help students to learn independently. Developing instructional program of economic public are online materials, online videos, online assignments, onlie quizzes, and online discussion

forum. Students can access this programs using exelsa moodle. Thus, developing instructional program of public economic subject using exelsa moodle can help students learn independently.

## 2. Literature Review

There are many studies of implementation information and communication technology (ICT) in learning. In 2011, Munawaroh [9] research how to use of ICT to foster creativity and independent learning. The result is using ICT in learning process and independent learning menumbuhkn kreatifvitas learners. Use of can provide a greater opportunity for participants to learn to collaborate among the participants learn, because learning pattern that is formed is no longer patterned on the individual but the pattern of cooperation that it contains personal responsibility.

A similar study have done by Nurjayanti [11]. It is about developing online learning method of programming languages subject. From questionnaires, the result show that online learning methods can build a mindset of a comprehensive and interactive communication between students and lecturer and students with peer.

Dewi [4] also research how effect of Web learning for math anxiety, the sense of mastery, dan self-esteem. The result show that Web learning influence *Math Anxiety, The Sense of Mastery* and *Sense-Esteem*.

In 2015, Martikasari [8] doing the research about an effectiveness of using digital learning resources in Statistics I subject in terms of the level of participation and outcome learning students. Result show that participation indicators are 100% and 82,35% for outcomes learning indicators. Thus, using digital learning resources in Statistics I subject is very effective in terms of the level of participation and outcome learning students.

## 3. Instructional Program of Public Economic Subject

Education has change a paradigm. The process of learning in classroom is no longer using the principle of the transfer of knowledge from lecturer to students, but using the principles of constructivism. In constructivism principle, lecturer construct their own knowledge or basic concepts based on knowledge and experience [15]. In this principle, students can be active in learning progress, while lecturer as only a facilitator. Thus, an independent interactive learning is the key to the success of the learning process.

Interactive learning is a learning process in which a student can directly interact actively in the learning process. In this interactive learning, lecturer is not the one of learning resource. A lecturer must be able to learn independently, not just relying on the learning process in the classroom but also to develop otehr knowledge.

The development of ICT in learning can be optimizing. Lecturer can develop digital learning resources that can help students learn independently. Sanata Dharma University has a facility, that is exelsa moodle. By using exelsa moodle, lecturer can uploading online materials, online videos, online assignments, onlie quizzes, and online discussion forums as a source of independent learning for students.

### 3.1 Online materials

Uploading online materials by exelsa moodle is doing by lecturer every week a few days before meeting in the classroom. By uploading this material, students can expected to learn before meeting, helping students to understanding the materials and situation in meeting can be more conducive.

### 3.2 Online videos

Besides the online material, the lecturer also uploading online instructional videos. Instructional video is one of the digital learning resources that can help students understand the material. Videos can be uploaded in exelsa moodle. Instructional videos were conceived and created by lecturer with the group of students. Before making instructional videos, a lecturer with the group of students designed the design, concepts and instructional video content. Content of videos can materials learning, materials application or case study.

### 3.3 Online Assignments and online quizzes

Lecturer is also developing online quizzes and online assignments. Online quizzes and online assignments useful to help students for understanding materials subject of public economic. Online quizzes and assignments are given after the meeting. Deadline quizzes and assignment is 6 days. Students who are not present at the meeting, still can take an online quiz and assignment. Online quizzes and assignments is helping students learn independently.

### 3.4 Online discussion forum

In the development of digital learning resources as a source of independent learning for students, lecturers will also open an online discussion forums via Moodle exelsa facilities. Online discussion in this forum, the lecturer will raise a case which relevant materials, then each student will give their opinions regarding the case. Students are required to provide their opinion and should not be only "similar" to the opinion of their friends.

Through of development of online materials, online videos, online assignments, online quizzes, and an online discussion forum is expected to be independent resource for students. Students can have learning independently to achieve their goals.

## Result

Developing instructional program of public economic subject using exelsa moodle are products of online materials, online videos, online assignments, onlie quizzes, and online discussion forum.

### 1. Online materials

Developing of online materials produce materials of learning which create by using Microsoft Power Point program. There are nine products power point of learning material that has been made based on topics in the Public Economics subject, which are the chapter of role of government in the economy, country's and local budgets, revenues, government spending, taxation, analysis of costs and benefits, pricing of public goods, the country's debt and redistribution of income. The results of online materials products is as follows.



Fig 1. Online Material Products ((Source: Exelsa Moodle, 2015)

### 2. Online videos

Online video is successfully developed. That are eight videos for chapter of country's and local budgets, revenues, government spending, taxation, analysis of costs and benefits, pricing of public goods, the country's debt, and redistribution of income.



Fig 2. Online Video Products (Source: Exelsa Moodle, 2015)

### 3. Online Assignments

Developig of online assignments help students improve understanding of the material and participation in lectures. It also can help students learn independently. Lecturers usually provide online tasks that must be done by the students each completed a meeting with a deadline of six days. The collection of tasks performed by students online as well, and students uploading their answer using exelsa moodle. Students can not uploading their answer after deadline.



Fig 3. Online Assignment Products (Source: Exelsa Moodle, 2015)

### 4. Online quizzes

Lecturers also developed online quizaes. Online quizzes can helping students improve the understanding of the materials that has been discussed at the meeting in question. Online quizzes are given after the meeting. Deadline is 6 days. Students are given the opportunity twice on each quiz. Students who are not present at the meeting in question, still can take online quiz. Online quizzes is helping students learn independently outside the meeting in the classroom.

Online quizzes prepared using hot potatoes program. Here is one of the products of online quizzes.

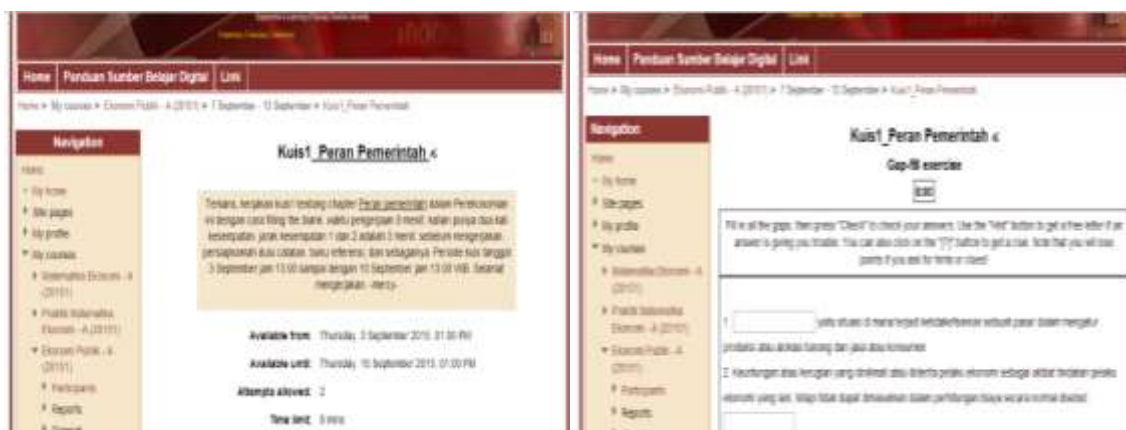


Fig 4. Online Quiz Products (Source: Exelsa Moodle, 2015)

**5. Online discussion forum**

Dalam pengembangan sumber belajar digital sebagai sumber belajar mandiri bagi mahasiswa ini, dosen juga akan membuka online discussion forum melalui fasilitas *exelsa moodle*. Dalam *online discussion forum* ini, dosen akan mengangkat sebuah kasus materi bersangkutan, lalu setiap mahasiswa akan memberikan pendapatnya terkait kasus tersebut. Mahasiswa wajib memberikan pendapat mereka dan tidak boleh hanya “sama” dengan pendapat temannya. Berikut adalah salah satu tampilan dari online discussion forum.

In the developing of instructional program of digital learning resources as a source of independent learning for students, lecturers will also open online discussion forums using *exelsa moodle*. In this forum, the lecturer will raise a relevant case, then each student will give their opinions regarding the case. Students are required to provide their opinion and should not be only "similar" to the opinion of their friend. Here is one of discussion forums view.



Fig 5. Online Discussion Forum Products (Source: Exelsa Moodle, 2015)

**6. Result of Students Activities**

Here are the results of observations of students activities in utilizing digital learning resources through *exelsa moodle*.

Table 1. Students Activities

No	Activities	Percentage
1.	Downloading materials of lesson	100%
2.	Downloading and waching videos	80%
3.	Completing assignments	90%
4.	Completing quizzes	100%
5.	Participating in online discussing forum	100%

Source: Exelsa Moodle, 2015



Table 1 show that the activity of students in downloading materials learning, completing quizzes and participating in online discussion forum have a percentage of 100%. This means that all students participate in these activities. For downloading activity and watching videos have a percentage of 80% and the activity of completing assignments has a percentage of 80%. Both of these activities means that almost all the students participating in this activity.

In general, all activities have a percentage of 80% and above. This indicates that developing instructional programs of public economic subject using exelsa moodle make student learning independently.

## Conclusion

Developing instructional program of public economic subject using exelsa moodle are online materials, online videos, online assignments, online quizzes, and online discussion forum.

Based on observations of students activities, the results indicate that developing instructional programs of public economic subject using exelsa moodle make student learning independently.

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# **LEARNING VISUAL ARTS USING ENTREPRENEURIAL TECHNOLOGY: AN EFFECTIVE MEDIUM TO MARKET LOCAL PRODUCTS**

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## **ABSTRACT**

Teaching visual arts is a challenging way not only to sharpen the students' skills on arts but also to market the products of what they can visualize. Recently, Batik becomes famous and expensive as the commodity of many artists in Indonesia. The issue of Asean Economy Community challenges the teacher of arts to be able to promote what can be appreciated through art visualization. In this article, the writer assumes the use of entrepreneurial technology in form of tutorial video containing simulation of producing visual arts and the ways to market the products. This way is then compared to see how effective the medium of learning toward the class which does not use the medium in learning visual arts. This article discusses the result of a quasi-experimental research. The findings show that the use of entrepreneurial technology in form of learning video is more effective compared with the students not using the medium in learning visual arts. The assumption testing of ANCOVA shows all the assumptions prove that the medium is effective to apply in the classroom of arts. Shortly, the medium can be more developed based on the needs in stimulating students' entrepreneurial skills to prepare them in competing in the free market.

**Key Words:** Visual Arts, Entrepreneurial Technology, Learning Video.

## **Introduction**

Learning visual arts in the art classroom seems to be boring to the students in case of the creative assignment. However, visual arts are necessary for the students to master for they give an important role to develop their intelligence, social and emotional competences. Therefore, the government should design the curriculum which prepares them to get the competence of expressing his/ her experience, explaining feeling or idea as well as comprehending variety of meaningful contexts through the realization of visual arts. It is expected that they can use visual arts as well as possible. In Indonesia, visual arts have been taught since elementary school, however the result of visual art teaching in Indonesia are still far from satisfactory. In the preliminary study conducted by the researcher, he found the difficulty is not again the material but the idea and the bravery or confidence in expressing their idea through visual arts. As the result when their creativity in visual arts is examined, they get bad average scores.

At SMA Negeri 2 Blitar, the students of the second year students were found in low bravery and confidence to express the visual arts materials in modification of three-dimension (3D) arts

proven from the teacher's experience in the classroom during the teaching of visual arts. The students felt it when they learnt in learning basic competence 4.2, the students are expected to make three-dimension (3D) arts from modification result. Since they felt the signs are only instructions, they ease what they learn in classroom. This was shown from the result of interview from the Visual Arts teacher and the students. More than 60% of the total students are not brave and confident in modifying the arts in Visual Arts. In addition, the questionnaire result shows that from XI-IS-2 (for preliminary study), 21 students of 32 students felt they have no bravery in expressing feeling through visual arts.

From the facts above, there are some indications found as the lack in students' learning. They include the lack of medium of teaching applied in the classroom so that the students do not feel challenged to be brave in expressing the idea to modify the 3D arts. Secondly, the students have limited idea to explore the learning materials. Thirdly, the lack of learning media that can stimulate students' inquiry in learning to process the materials as in conducting steps of scientific approach.

In this case, the writer hypnotizes that the entrepreneurial technology may make teacher easier to find out the suitable medium. The medium used here is Entrepreneurial Learning Video (ELV). The medium is developed based on the Seneges, et. al (2008) about the entrepreneurial learning. From learning using this base, the students are taught using a model in form of video to inspire them to have ideas and confidence in visualizing into visual arts. This medium is than compared with the conventional teaching of visual arts without medium.

The general research problem is formulated as follows: "Do the students who are taught using ELV perform better in visual arts skill scores than those who are taught using conventional way?". In accordance with the mentioned problem, this study tries to find out whether the students who are taught using ELV perform better in visual arts skill scores than those who are taught using conventional way.

### **Entrepreneurial Learning Video**

Seneges, et. al (2008) state that high quality learning materials are being made available for free and educators as well as self-directed learners can complement and remix them to create ever more customized learning opportunities. The material developed here is to direct the students' learning to be able to learn independently and develop the idea and inspiration through the learning media in form of ELV. The videos are developed based on the previous students' experiences and successes to make the students inspired and motivated in visualizing their creativities into 3D arts.

3D arts are the materials consisting in Basic Competence (*Kompetensi Dasar*) 4.2. It discusses the ways and the process in making 3D arts. In this basic competence, the students are provided the

example in form of ELV and inspired using ELV as the idea and inspiration to visualize into 3D arts. Furthermore, in KD 4.2, it is completed by the expectation to the students in designing the 3D arts and making the 3D arts. Therefore, the lecturer uses this ELV to inspire the students. Entrepreneurial here means the video made by the writer contains the video to let the students do entrepreneurship through the making of 3D arts.

## **Research Design**

This study applies the quantitative research for it concerns with certain numbers of variables and numerical data. The data used in this study are interval data in the form of students' scores of visual arts test. Meanwhile, the research design is quasi-experimental research applying non-randomized pretest-posttest control group design (Ary, 2001). There are some reasons for taking this design, namely, a) the research was conducted without changing the setting of the class, the observed classes were not changed in their characteristics and setting, b) the researcher only collaborates with the other teacher for doing this study to create the natural condition of the class, to avoid the students feel being observed which can cause the extraneous variable, c) the two classes used in this research have been separated long before the researcher conducts the research by considering the sampling medium, and d) the research was executed using the time schedule of the teaching arranged by the school as before.

The design of quasi-experimental research here is as explained by Latief (2012) who states the use of non-random sample out of all the population students. Moreover, the researcher can only assign randomly different treatment to the experimental class, in this study, class with conventional way (not using medium) and class with ELV. Cohen, et. al (2000) also emphasize that when applying too much educational research where the random selection or random assignment of schools and classrooms is quite impracticable. It can be summed up that quasi-experimental research is a research design to select the sample non-randomly out of all the population students.

This study is due to find out the effectiveness of two teaching mediums, ELV medium and conventional teaching without medium in the teaching and learning process of visual arts. The researcher as the teacher in giving treatment using ELV medium meanwhile in control group the researcher only administers the pre test and post test. One class as control group (XI IPA-2) was assumed to teach using conventional way meanwhile the other (XI IPA-1) as experiment group was taught by using ELV medium.

The procedures of the research can be described as follows: a) deciding population and sample, b) preparing the research instrument, c) validating research instrument, d) doing pre test, e) teaching using ELV in experiment group, f) giving the test to get data of the student's achievement

by administering the post test, g) scoring the students' answers, and h) making the suitable medium of analyzing the data and statistical operation to know if the different results of both groups are significant or not, and i) concluding remarks from the results of analysis. It gives information whether the hypothesis ( $H_0$ ) is received or refused.

Since non-randomized pretest-posttest control group design was used in this research, the researcher applied ANCOVA formula to prove the hypothesis as suggested by Pallant (2000, chapter 20: 1), who states that ANCOVA can be used when you have two group pretest/posttest design (e.g., comparing the impact of two different intervention, taking before and after measure of the groups). Further he says that the pretest scores are treated as a covariate to control for pre existing differences between groups.

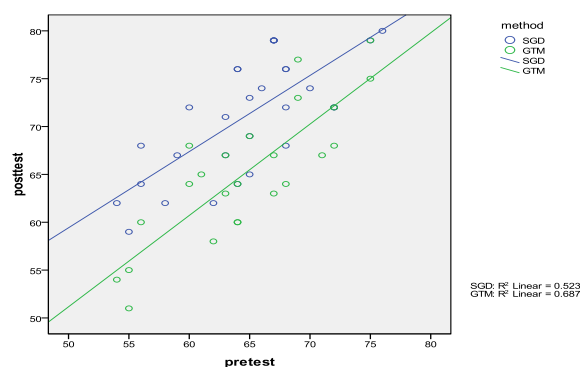
ANCOVA is also handy when a research has been unable to randomly assign the subject to the different groups, but instead having had to use existing groups (e.g., classes of students). As these groups may differ on a number of different attributes, ANCOVA can be used in an attempt to reduce some of these differences (Stevens (1996: 324-327 in Pallant 2000, chapter 20: 2). In order to gain accurate and correct data, the researcher has calculated the data by using SPSS for window version 19.

## Research Findings

This part consists of testing of linearity, testing homogeneity of regression slopes, Lavene's test of error variances, one way analysis covariance, and assumption of research.

### Testing of Linearity

To check the assumption of a linear relationship between dependent variable and the covariate, the researcher generated scatter plots.



**Figure 1 Scatter Plot in Testing Linearity**

Pallant (2000, chapter 20:8) states “if you find a curvilinear relationship you may want to reconsider the use of this covariate.” Based on the scatter plots for each groups on the Figure 1 above, it shows the linear (straight-line) relationship for each groups and not a curvilinear relationship, so, it could be said that the assumption of the linearity is not violated.

From the output above, there appears to be a moderate, positive correlation between the two variables (independent variable and dependent variable) for the sample as a whole. The students' pre test levels are shown on the X, or horizontal, axis meanwhile the students' post test levels are shown on the Y, or vertical, axis. From Figure 1, it shows an indication of a linear relationship, so it would be appropriate to calculate the analysis of covariance.

**Testing of Homogeneity of Regression Slopes**

**Table 1 Tests of Between-Subjects Effects**

Dependent Variable: posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1858.003 <sup>a</sup>	3	619.334	34.971	.000
Intercept	55.999	1	55.999	3.162	.081
medium	27.571	1	27.571	1.557	.218
pretest	1359.730	1	1359.730	76.778	.000
medium * pretest	11.179	1	11.179	.631	.431
Error	885.497	50	17.710		
Total	256125.000	54			
Corrected Total	2743.500	53			

a. R Squared = .677 (Adjusted R Squared = .658)

Testing the homogeneity of regression slopes is used to evaluate the interaction between the covariate and the factor (independent variable) in the prediction of the dependent variable. If the interaction is significant, the results of ANCOVA are not meaningful and ANCOVA should not be conducted. Pallant (2000, chapter 20:9) states, "If the significant level for the interaction is less than or equal to 0.05, it means that the interaction is statistically significant, indicating that the assumption is violated." In accordance with the above data taken from Medium\*Pretest, the significant value is 0.431 which is much greater than 0.05. It proves that the assumption of homogeneity of regression slope is not violated. Based on this finding ANCOVA, the further analysis can be proceeded.

**Lavene's Test of Error Variances<sup>a</sup>**

**Table 2 Levene's Test of Equality of Error Variance**

Dependent Variable: posttest

F	df1	df2	Sig.
.209	1	52	.650

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + pretest + medium

Lavene's Test of Equality of Error Variances is used to check whether or not the assumption of equality of variance is violated. If the significance value is greater than 0.05 the variances are homogenous, however if this value is smaller than 0.05 this means that the variances are not homogenous or in other words the variances are different and that the assumption of equality of variances is violated, (Pallant 2000, chapter 20: 11). In this case the variances are homogenous, or the assumption of equality of variances is not violated, because the **Sig.** value is 0.650 which is much greater than 0.05.

**One Way Analysis Covariance**

**Table 3 Tests of Between-Subjects Effects**

Dependent Variable: posttest

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1846.824 <sup>a</sup>	2	923.412	52.521	.000	.673
Intercept	57.120	1	57.120	3.249	.077	.060
pretest	1354.749	1	1354.749	77.054	.000	.602
medium	467.521	1	467.521	26.591	.000	.343
Error	896.676	51	17.582			
Total	256125.000	54				
Corrected Total	2743.500	53				

- a. R Squared = .673 (Adjusted R Squared = .660)
- b. Computed using alpha = .05

**Table 4 Estimates Marginal Means**

Dependent Variable:posttest

Medium	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
ELV	71.132 <sup>a</sup>	.766	69.595	72.669
Conventional Way without medium	65.210 <sup>a</sup>	.856	63.491	66.928

- a. Covariates appearing in the model are evaluated at the following values: pretest = 64.72.

Pallant (2000, chapter 20: 12) states: If the Sig. value is less than 0.05, than the groups (ELV medium and conventional way without medium) different significantly. Table 3 (labeled medium on the SPSS output) shows the result of the analysis indicate that,  $F(2,85) = F 26.591, P 0.000 < 0.05$ . Therefore, the experimental and control groups were significantly different and the result of analysis indicated that the null hypothesis saying that both mediums (ELV medium and conventional way without medium) are equal should be rejected.

### **Assumption of Research**

The prompt assessed the differences between the adjusted means for two groups, which are reported in the Estimated Marginal means table as 71.132 for the students taught using ELV medium, and 65.210 for the students taught using conventional way. Therefore, based on the Estimated Marginal Means, the alternative hypothesis says that the students who are thought using ELV medium in visual arts in making 3D arts achieve better Visual Arts achievement in visual arts than those who are taught using conventional way.

### **Discussion of Research Findings**

The objective of this study is to find the answer of the problem as it has been mentioned in the introduction. The problem is “Do the students who are taught using ELV medium perform better in visual arts achievement than those who are taught using conventional way?” After reviewing some theories concerning the topics in this study, the operational hypothesis was formulated that the students who are taught using ELV medium achieve better in Visual Arts achievement in visual arts about 3D arts than those taught using conventional way without medium. To test the research hypothesis of the study, it was transformed to the null hypothesis ( $H_0$ ). The null hypothesis was “the students who are taught using ELV medium achieve better in Visual Arts achievement in visual arts than those taught using conventional way without medium.”

The interpretation of the research is divided into two points of view, namely statistical and practical view. From the statistical point of view, the finding of the research showed that statistically the students taught using ELV medium showed significant higher achievement than those taught using conventional way. It is shown from the significant value, which is lower than 0.05,  $F(2,85) = F_{26.591}$ ,  $P_{0.000} < 0.05$ . Furthermore, it can be seen from the differences between the adjusted means for two groups, which are reported in the Estimated Marginal means table as 71.132 for the students ELV medium, and 65.210 for the students taught using conventional way. Therefore, the experimental and control groups were significantly different and the result of analysis rejected the null hypothesis says that both strategies (ELV medium and conventional way) are equal. It means that the theoretical hypothesis is supported with empirical evidence.

Meanwhile in the practical view, the research finding indicated that ELV medium can contribute to the improvement students' visual arts. In the practicality of the use of ELV in teaching visual arts, the researcher found that the students can ease to visualize and discuss 3D arts by discussion the materials in ELV. The students can challenge themselves in exploring the visual arts materials and the 3D arts.



The linearity of this practical view also proves that the previous studies also occur in the findings of this research. The entrepreneurial learning conducted by the researcher is in line with what Senge, et. al (2008) found in his research findings. He found the improvement of using ELV in the classroom. It also occurs in the researcher's classroom environment. It also forces the students' to be ready in visual arts on 3D arts so that they should think and challenge themselves in discussing what they know and understand about the content of 3D arts. This activeness improves the students' scores in case of performance so that they can understand what they discuss and elaborate in their discussion material.

From the findings above, it can be summed up that ELV medium should be suggested to the Visual Arts teachers to explore the activities, materials, ideas, and situation in implementing ELV in visual arts classes. Therefore, the research findings can be considered as the effective medium in teaching visual arts by some beneficial improvements.

### **Conclusions and Suggestions**

Related to the statistical analysis using SPSS with analysis medium of ANCOVA, this study can be concluded as follows. There were a number of interpretations from the output of ANCOVA that were used to answer the statement of problem in this study. From analysis, the researcher found he had not violated the assumption of equality of variance. Since the Sig. Value was greater than .05, the variances of this study were equal. In other words, the assumption was not violated because the Sig. value was .650 which was much larger than the cut-off of .05.

The main ANCOVA results were presented in Table 4.3, labeled as Test of Between Subjects Effects. Since the Sig.value was less than .05, the groups differed significantly. In this study, the value was .343 which was more than .05, therefore the result was significant. It means that there was a significant difference to the students who were taught using ELV medium and the students taught using conventional way without medium. In other words, ELV medium was more effective compared with conventional way to teach students in visual arts.

The researcher gives several suggestions for some people requiring the findings of this research further. ELV medium can be used as one of the alternatives to improve students' visual arts skill by comprehending using actions with the provided materials. ELV medium is considered important into consideration since this medium is effective to teach visual arts on 3D arts. Choosing several mediums which are suitable with the character of the students and material will be given are important.

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## **DEVELOPING INSTRUCTIONAL DESIGN OF LITERARY APPRECIATION BASED ON *READER RESPONSE THEORY***

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### **ABSTRACT**

The problems driven to conduct this research are considered by the complaint arisen about the low quality of learning literature. The problems are caused by the ability of the students, the teaching method used by the teacher, and the infrastructure provided by the school. However, these problems are considered to be disappointing since the purpose of literary appreciation learning is not to develop students' critical thinking and feeling. Literature is a kind of art which can be aesthetically pleased and to be used as a means to build the intelligence (IQ) and emotion (EQ) of the students. The focus of this research is how to develop the instructional model of literary appreciation based on Reader Response Theory (RRT). Considering these reasons, this research aims to: (1) produce the qualified learning model of literary appreciation based of RRT; (2) produce the qualified means of learning to be implemented during the teaching and learning of literary appreciation based on RRT. The subjects of the research are the tenth grade students of SMAN Malang and SMA Lab. UM Malang. Finally, the results are in the product of: (1) literary appreciation design in the form of syntax which is in line with the principles of RRT and fulfills the validity, effectiveness, and practicability; (2) the means of literary appreciation to espouse the implementation of teaching and learning based on RRT which has fulfilled the effectiveness and the practicability.

*Key Words: Developing instructional design, instructional design, literary appreciation learning, Reader-Response Theory*

### **INTRODUCTION**

Until recently, there are still many complains considering to the low quality of literary appreciation in the school. It is proven by the ability of the students towards this subject which can be stated as low. However, there have been many articles written about the problems and also the causes. Most of the articles mention that one of the causes is based on the quality of the teacher in mastering the subject and its teaching technique which affects to the conspicuousness of the teaching and learning process. The learning process becomes uninteresting since it is not constructed to develop the students' interest. Additionally, the subject given is just in the form of definitions and, on the other hand, it is not about how to create a work (Subandiyah, 2012:1).

Moreover, the other causes are based on the literary learning which becomes one to the learning of language. This condition indeed can affect to the minimity of the time allocation to teach this subject. However, the secondary language teachers are not coached up well to teach literature (Subandiyah, 2012:1). Regarding to this statement, Taufik Ismail also suggests that literature learning should be separated from the learning of language to become independent language learning (Kompas, 24 Juli 1997).

According to the problems above, it indicates that there is something wrong about the learning of literature all this time. Basically, the low quality of literature learning cannot be separated from the system which forms it, which is the teacher, the student, the curriculum, the teaching method, the subject material, the means and the infrastructure. In addition to that, the external factor, such as the demand of the environment and the people who determine the formal education policy (from *GBHN* until the technical implementation of curriculum guideline), also plays a role to this failure (Subandiyah, 2012:2).

The low quality of the learning is so disappointing since one of the roles of literature is to be able to be used to inculcate and to develop thought, intelligence (IQ), and emotion (EQ) of the students (Subandiyah, 2015:2). Literature, basically, is an expression of the composers got from their experience and comprehension about life. As a part of the community, the writer also sees, experiences, and feels these entire phenomena. Life is covering many kinds of problems and the human moral values individually, socially, politically, and culturally. However, there is a different opinion between the understanding of literature and the human values in sociology, history, religion, and others, since literature brings the aesthetics elements.

Relating to the teaching and learning in the class, student can take the lesson of life brought by literary works. The lesson is got from the delineation of the character and its characterization. The more the students are reading the literary works, the more experiences they get for their life. Therefore, this learning, especially literary appreciation, is able to enrich the students' experience and makes them more sensitive towards the phenomenon occurred on their surrounding area.

The sensitivity is very essential to be engraved early on. Recently, it can be seen that the people sensitivity about the phenomenon occurred around them is falling away. However, from

the learning of literature, it is hoped that it can reduce the number of these sensitivity about their environment which is lived by people as a noble creature on the earth, animal, and nature to be kept from damage and extinction.

Students as the main subject of the education are essentially hoped to be able to solve the problems above. It is caused by the duty of education which asks people to cultivate with others and build their expediency into the process of socialization (Oemarjati, 2009:2). Education is a process of humanity, which means that people through education are able to be more educated, skilled, and be responsible about the arrangement of social life. The activity of education is aimed to develop all people's potentials and to gain the ability of self-learning (Khan, dalam Subandiyah, 2015:3).

Moreover, the statements above are in line with the foundation of national education in the future, which is to be rooted from the completely Indonesian characterization paradigm. The national education puts the students as the main subject and aims to humanize people in totally. It can be assumed that students are aimed to have a skill towards science and technology, and have a skill based on faith, piety, aesthetic, morals, cultured, inventive, and magnificent personality.

Regarding to the explanations mentioned earlier, the focus of this research is to produce the model of literary appreciation learning which can improve the quality of the learning. Dealing with the model production, the proper of learning philosophy aspect is needed to be done. So that, based on the considerable study, Reader-Response Theory (RRT) is chosen as the foundation. Moreover, during the implementation of RRT's principles, the means of learning is also developed into the teaching and learning process.

## **B. REVIEW OF RELATED THEORY**

### **1. Instructional Design**

Instructional design is a conceptual structure which describes the systematic procedure in organizing the learning experience to achieve the certain learning objective and has a function as a guideline for the learning designers and teachers in designing and implementing the teaching and learning process (Dahar, 1988). Moreover, it is also supported by Joyce and Weill (1980:3)

who state that instructional design is a pattern or a plan, which can be used to shape a curriculum or course, to select instructional material, and to guide a teacher action.

The instructional design has the elements of: (1) syntax, (2) social system, (3) reaction's principles, (4) secondary system, and (5) instructional impact and accompanist impact. Syntax has a role to expound the model into the action or the order of activity called as phases; where each model has a different pattern (Joyce & Weil, 1992: 16). The principle of reaction is a principle to show how the way of the teachers care of their students and how to behave towards what is being done by the students. Secondary system can be described as any kinds of things needed to support the implementation of the learning, such as the proficiency, the capacity, and technical facility like media. Instructional impact is the result of learning achieved directly by guiding the students to the specific purpose. The accompanist impact is the result of learning which does not appear directly because of the experienced environment built by the design.

Considering the statements above, it can be stated that developing the instructional design which is easy and interesting for the students is really essential to be made in order to ease the students when understanding the material. Therefore, the research and development is needed to be conducted. Seels & Richey (1994:35) say that development is the process of translating the design specification into physical form. The research and development method is a research which is used to produce a certain product, and to examine the effectiveness of the product (Sugiyono, 2008:297). In this research, the writer aims to produce the design of literary appreciation learning based on the principles of RRT.

## **2. Literary Appreciation Learning in Schools**

Basically, literary learning is learning to appreciate. So, literary appreciation means an activity to appreciate literature. Appreciation is an activity to get along the literature intimately. (Effendi dkk., 1998). In getting along the literature, there is a process of recognition, understanding, comprehension, enjoyment, and application. The recognition of literary work can be done through reading, listening, and watching assuredly. The sincerity will produce to the recognition by step to the level of comprehension

In understanding, it needs the involvement of emotion, aesthetic experience, and intuition. The understanding brings the students to the level of comprehension. The indicator of

comprehending the literary work is if the reading text, the means to listen, and the show is sad, they will be sad, if it is happy, they are also be happy. After comprehending, the students will be brought to the level of aesthetic enjoyment. On this phase, they are able to feel deeply the kinds of beauty in literature. This feeling can help them to find the moral value about human and humanity, and also about life. Application is the end of enjoyment phase. It means that students who are able to feel the enjoyment will try to apply these values into their real life which indeed can affect their behavior.

There are many kinds activity of literary appreciation done in the school, such as: listening to the poetry perusal, observing the way of the character to express the disposition in the movie series and discussing it into the class, practicing to read poetry, declamation, short story, analyzing and discussing the theme and the lesson of the short story, playing the role, narrating, writing a poetry or poem, and short story based on their own experience or others' experience, reading and summarizing the novel, continuing the story based on the quotation on the novel based on their own intuition, and so on.

### **3. Reader-Response Theory (RRT)**

Reader-Response Theory is a theory or a literary approach which focuses on the role of the reader actively in defining the literary works. Literary text is seen not only as an autonomous structure, but also as the meaning defined by the reader. Therefore, the reader has a subjectivity to define the literary work which indeed will be different each others. This subjectivity is influenced by some factors such as education, religion, life philosophi, cultural value, psychological condition, social background, and etc.

Ross Murphin and SupriyaM.Ray (1998) mention that Reader-Response Theory is encompasses various approaches to literature that explore and seek to explain the diversity (and oven divergence) of reader' responses to literary works. Reader-Response Theory is also called as *Reader-Response Criticism*, which means as a type of literarture setting out the big role of the reader in defining the text. What containing to the reading text is may be not included into the reading text, but in the construction of the reader. It can be assumed that the text is not the only source of meaning. The reader uses their intelligence and experience when reading the text. So

that, the meaning brought by the text may be considered by the previous experience, perception, imagination, and also expectation.

In literary learning using RRT model, teacher and student play an important role. But, they still stick in line with the principles. According to this matter, Tyson (1999:153) has reminded that eventhough the reader has a freedom to interpret or assess, but they cannot diverge from the text. The propriety of the interpretation or assessment must be based on the text. Additionally, Marlene Asselin also clarifies the statements above: *...Theories of reader response explain how readers create meaning. Theories identify three aspects of this process: the reader, the texts and the context. The different relationships that are possible between these components define different perspectives of reader response* (2000:62).

The most important thing in RRT is how student's response produces the interpretation to be next written and discussed in the class. Evaluation is done not only from the literary aspect, but also from the way to write and to respond using the logical argumentative words. How the students deliver their opinion and defend it by using logical argumentation is the point that must be evaluated.

The teaching materials based on RRT can be everything, such as, printing or non-printing, not have to be a literature work with capital letter of **S**, not have to be national work. The different result of interpretation from each reader is not only influenced by their background knowledge, because the same reader may be able to have different interpretation if he interprets it in different time (Tyson, 1999:154).

## **C. DISCUSSION**

The three steps done in this development research are exploration, model development, model try-out and the revision in once time. Furthermore, the three steps are elaborated into the statements below.

### **1. Result of Exploration**

The step of exploration was done by using the method of observation, theoretical study, and interview. As the result, it found:

- a. The characteristics of the students at SMA Negeri 8 Malang and SMA Lab UM Malang



- b. The characteristics of Indonesia Literature at the eleventh grade of Language Program Class
- c. The characteristics of Reader-Response-Theory

Additionally, the selection of three competence standard-basic competence (*SK-KD*), that is literature, speaking, and writing followed by the the indicator of achievement, was overplanning by the writer. Furthermore, the writer did an arrangement of literary appreciation learning based on Reader-Response Theory.

## **2. Result of Model Development**

How is the way to teach literary appreciation based on RRT? According to this question, Rosenblatt suggests some aspects that must be considered, that are: ... *logical plan where the students become the center of their education and the teacher of their guide, creating situation favourable to "experience" literature. After all, "the student's knowledge about literary history, about authors, and periods, and literary types, will be so much useless baggage if he has not been led primarily to seek in literature a vital personal experience* (1983:). It is assumed to be a signal that the most important thing in teaching literature is how the teacher builds the pleasure environment, which lets the students be free to express and explore their response towards the literature texts to gain the literature experience. This statement is also supported by Shcaars who has already implemented Rosenblatt's theory into his literature class: ... *Rosenblatt's definition of a classroom where students are relaxed and secure enough to feel that their own response to a books, or to anything for that matter, are worth expressing, where a free exchange of ideas can take place* (1988:54).

### **Syntax of Literary Appreciation Learning based on Reader-Response Theory**

The syntax of learning based on RRT refers to the Beach Marshall's argument (1991:28) that reader's response consists of seven strategies which are elaborated below.

#### **a) Engaging**

The reader always tends to bring his/her feeling when reading the literary text. He Pembacamelts himself into the text and feels what the characters feel. When reading it, the

reader does not put his feeling, but his thought and imagination (Purves, 1990). The engaging reader will put himself into the text and it is known as *aesthetic reading* (Kimtafsirah, 2003:6).

b) Describing

Readers can elaborate the parts of the story in the text after they engage themselves into it. This ability is gained since the readers get the process of *engaging* and they act as if they themselves who experience every parts of the story that they read. They are able to see and feel clearly what is being experienced by the character. Of course, this ability is very useful to be used to comprehend the text.

c) Conceiving

By conceiving, the reader tries to get into the text and lives on it. It aims to conceive the character's behavior in the story. Through this way, the readers are able to respond it emotionally and ease them to comprehend it.

d) Explaining

The readers achieving the level of conceiving will be able to explain the content of the text in detail. He/she also will be able to explain all questions related to the plot of the story.

e) Connecting

After getting into the level of conceiving and explaining, students can relate and differ the story with another story based on their experience. Regarding to this statements, the teacher are able to facilitate the students by preparing many supporting media.

f) Interpretation

The result of connecting is that students can interpret the content of the text seen from different sides. This process is done before they give their appraisal towards the elements of the text. The ability to interpret is determined from their various experiences, such as age, gender, education, religion, and others.

g) Judging

Based on their experience of life, students are able to appraise literary works they read. Students can deliver their argument about the content of text, which is seen from different parts based on their comprehension. Students also are able to convey their opinion about the character, plot, setting, writer, and so on. In this matter, the teacher is not allowed to demand the equality of students' comprehension because of their difference level of interpretation. What the results of the students' works still have to be appreciated by the teacher.

### **3. Result of Tryout**

#### **a. Result of Validity**

The validity is conducted by someone considered as the expert of the subject, the expert of language, and the expert of teaching and learning. This step aims to get the model and the means of teaching which fulfills the requirement. Moreover, the results find that there is validity towards it, which the content shows 97.5%, the construction is 95.1%, and the design shows 95%. The result of the students's book shows 92.5%, students' work sheet as 95%, teachers' book 87.5%, and assessment manual as 91%.

#### **b. Result of Effectiveness**

The results find that the effectiveness of the model and the means of teaching show 3.9 which means as very effective. Moreover, the result of students' completeness show 92.5% which means very effective. In addition to that, the result of students' activity and teachers' activity which are in line with the lesson plan show 86.11% and 100%, which mean very effective.

#### **c. Result of Practicability**

The result of practicability is discovered from the implementation of the model in the class which shows 3.6 or the same as 91%. The percentage shows that it is categorized as **Good** or very practical.

### **CONCLUSION**

Regarding to the findings and the discussion above, it can take some conclusions, which are: (1) The result of exploration and the development is taken from the syntaxs of literary appreciation learning based on Reader-Response Theory. In order to implement this model, this research also produces the means of teaching, for instance like lesson plan, students' work sheet, student's book, teacher's book, and assessment manual or guideline; (2) The result of validity shows that the model and the means of teaching are considered to be valid; (3) The result of

effectiveness shows that the model and the means of teaching are considered also to be effective; and (4) the result of practicability shows that the model and its means of teaching is practical.

The findings of the research discover that the quality of the model and its means of teaching produced are categorized as good and reasonable to be implemented. However, these findings are still concluded based on the limited scale, which is only taken into two schools. So, this reseach still needs a further research to get the obvious picture of the quality. A large amount of money and time of course will be essential to conduct this research. It is hoped that there will be a chance for further researchers to complete this research, so that it will not be superfluous.

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Topic Area: Research in Curriculum and Material Development

CLIL and Its Feasibility to be implemented in Indonesia towards ASEAN Economic Community

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**Keywords: CLIL, SBI, Content subjects, teachers, Teaching of English**

Bilingual or multilingual education program has been seen as a necessity to meet the challenges to compete in the global market, in specific towards the ASEAN Economic Community. In Indonesia, the bilingual program back then is famously known under the program of Sekolah Berstandar Internasional (SBI) which no longer endorsed by the government. However, the needs to have more portion of English to be utilised in teaching subjects other than English still attracts followers. This national educational policy has triggered huge debate due to many reasons which lead to closure, such as poor teachers' teaching skills, 'premature' curriculum and student's readiness. Nevertheless, with the open market of ASEAN Economic Community, the use of English in teaching content subject which is the nature of Content Language Integrated Learning (CLIL), should be put into consideration. Thus, this investigation aims to find out the feasibility of an alternative bilingual program of CLIL to be implemented in Indonesian context. The exploration will further on how can CLIL be adjusted and implemented in the educational context. Moreover, it would be thought provoking to examine how CLIL can be fitted in the already exist bilingual program. It is expected that the findings will be able to, at the very least, ideas on how to run an improved bilingual or multilingual education program in Indonesia.

CLIL is a dual purpose programs that put emphasize on the teaching of both content and language. The principle of CLIL is integration, not merely translating the content of knowledge in another language, and it is emphasized on both content and language equally. No preference on either. In addition, CLIL is flexible as there is no a prescribed model of CLIL. It can be in the form of immersion program, language showers or bilingual program.

Many research findings prove that CLIL students often outperform their peers in regular programs on first language. This is partly because CLIL students develop meta-linguistic awareness. This means that they are better to compare languages and be more precise in their word choice and in passing on the content of their message. Therefore, there are several reasons that can be highlighted on why CLIL could be used as alternative approach to teach content subject in the target language. To name some are flexibility, the 4Cs frameworks, Content driven curriculum and best practices in teaching. For these reasons, CLIL is feasible to be used in the existed bilingual program in Indonesia.

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*Theories of moral education and implementation in Indonesia: Re-energizing cultural identity and addressing future challenges*

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Abstract:

School is regarded as a site of moral training for the younger generation to encounter nation's future challenges as well as to re-energize nation's cultural identity. The more competitive global society led by free market trade in terms of ASEAN Economic Community (AEC), requires the school to adapt and change its curriculum more frequently. Like many other countries, Indonesian Ministry of Education and Culture has introduced and nurtured universal values and traditional values respectively through school curriculum reforms to develop students' ability to participating in global society. This paper will describe classical and contemporary theories related to moral education that have been implemented in Indonesia's school curriculum and school activities. The theories developed by Durkheim, Alastair MacIntyre, and Basil Bernstein will be discussed. This includes explaining how far the theories have been adopted in Indonesia and how the approaches are currently being used in Indonesian schooling. This paper suggests despite the implementation of those theories in Indonesian schools, the government needs to optimise the operation of those theories to gain significant outcomes.

keywords: Character education, curriculum policy, moral education, national identity, universal values

## **Introduction**

School as an educational institution is expected to introduce shared values in order to help the younger generation to adapt in society. The multiple responsibilities of the school include such as developing students' behaviour, attitude, and building students' morality. The complexity of expectation on school, therefore, leads to a debate as well as considerable expense and efforts in the form of curriculum reform. The reform in curriculum includes shortlisting what subjects to teach, deciding the proportion for each subject at schools, and prioritizing what moral values to instil. More importantly, the selection and priority of those aspects in school curriculum involve competing ideologies (MacDonald, 2003; Bernstein,



2000). After the decision is made, the process of reform in curriculum required planning, dissemination, training for teachers, and implementation.

The Indonesian curriculum has been reformed at least eight times since its independence in 1945. Interestingly, it has been reformed more frequently since 2004. There are four curricular reforms in Indonesia within ten years: the 2004 competence curriculum; the 2006 school based curriculum; the 2010 trialled character education curriculum; and the 2013 curriculum which is called as *kurtilas*. The frequent reform implies the rapid changes in Indonesian society and the higher expectation of the society in education. However, literature presenting how curriculum in Indonesia has been shaped and influenced by such expectation remains absent. This paper, therefore, reviews the thinking behind the curriculum reform in Indonesia and the theories underpinning the reforms. The next section describes the theories related to how schools have been used by the authority to meet their expectation, especially the expectation on students' moral and behaviour development. Following this, the theories of moral education and implementation in Indonesia will be reviewed.

### Addressing two different goals

Studies have identified that curriculum in many educational systems is aimed to achieve two different goals: 1) to reenergize national identity; and 2) to equip students to face nations' future challenges (Yates and Grumet, 2011). The dual-goal of curriculum reflects nations' strategy to face the more competitive global society in the form of the free market (such as ASEAN Economic Community) and to strengthen national identity in among younger generation. In relation to the two goals, Bernstein draws the concept of pedagogic identities. With the theory of pedagogic identities, Bernstein (2000) argues that there is always a process of bargaining between the state policy and practice regarding what the subjects and the values should be taught. He identified four pedagogic identities that each has a different bias and foci, and has a different approach in regulating and managing change, moral, cultural and economic. From this perspective, curricular reform emerges out of the struggle between groups. Two of these identities those are generated by the state are *retrospective pedagogic identities* (RPI) and *prospective pedagogic identities* (RPI).

*Retrospective pedagogic identities* (RPI) are “shaped by national religious, cultural, grand narratives of the past” (Bernstein, 2000, p.66). Bernstein found that the RPI strongly and fiercely dominating the arena in which the past is threatened by secular change issuing from

the West, for example, the educational system in the Middle East, South Asia and North Africa. The illustration of RPI might be the inclusion of religious, history and citizenship subjects in the curriculum. The idea of RPI is in line with MacIntyre's (1967) theory that suggests subjects related to humanity such as the history of the nation, social science, and Arts are important to invoke younger generation's awareness to their national identity and moralities attached to it. Later on, MacIntyre's idea is regarded as one approach for character education.

Meanwhile, *Prospective pedagogic identities (PPI)*, "is constructed to deal with cultural, economic and technological change" (Bernstein, 2000, p.67). The identities are shaped by selective re-contextualising of features of the past to defend or raise economic performance. For the purpose, curriculum embraces subjects that enabling the younger generation to adapt with the global competitive market, such as English and ICT.

Bernstein's (2000) concept of pedagogic identities can be linked to Yates and Grummet's (2011) argument regarding the two competing goals in a curriculum. It suggests that curricular reform is seen as an attempt of nations for re-energising national identities (Retrospective pedagogic identities) as well as an apparatus to prepare youth for global competition (Prospective pedagogic identities). The two opposing goals drawn by Yates and Grummet (2011) and Bernstein's (2000) pedagogic identities imply the complex expectation and projections of people on educational outcomes. In this point, the educational outcomes the society expect is not only merely related to learners ability to master the subjects taught but also the changing in learners' behaviour, attitude and morality in such a way that the learners are able to adapt in the more global society.

Similarly, the philosophy has permeated Indonesian schools' curriculum in terms of selection of the subjects taught as well as prioritising moral values. The variety of the taught subjects and the moral values in the curriculum are intentionally selected by the educational authority and schools in order to address the aforementioned goals. However, the multiple goals lead to dilemmas in among policy makers in deciding what morality to introduce and what subject to teach. The below headings identify dilemmas and resolution reflected in curriculum reforms: between secular and religious moralities; universal values or local/national values; and dilemmas in curriculum selection.

## Prioritizing secular and religious moralities

In terms of developing students' morality, in 1920s Durkheim introduced the concept of 'moral training' explaining that school as an important place for meeting nation's expectation to its younger generation (Durkheim, 1961). In relation to this account, Durkheim (1961) suggested that education is important tools for enabling learners to adopt nations' shared values. This means, in a multi-ethnic/cultural society, the schools need to take secular morality into account—rather than religious morality. Besides promoting critical thinking, introducing shared values in terms of secular morality / values is an effective way to build a socially cohesive society and to avoid younger generation being trapped into sectarian conflicts.

The permeation of shared values and secular values was also evident in Indonesian schools in 1970s-1980s. In the first years after independence, Indonesia experienced frequent sectarian conflicts in terms of vertical and horizontal conflicts. Vertical conflict is regarded as a conflict between the people against the government in charge. Vertical conflict is triggered by some group of people— based on ethnicity and religion —who ask for independence. On the other hand, horizontal conflict refers to intergroup conflicts in the form of ethnic, communal or religious conflicts (Singh, 2006). To reduce such conflicts, the 1968 curriculum was issued to emphasize the national ideology of *Pancasila*, which is considerably secular rather than religious, as the shared values. The 1968 curriculum was the starting point for the instruction of Pancasila. This curriculum was aimed at internalizing the Pancasila's five principles: belief in God; just and civilised humanitarianism; national unity; consensual democracy; and social justice for all Indonesian. After that, there was 1975 curriculum that required children aged six and above learn the five principles by rote and were instructed daily to apply the meanings of the principles to their lives (Hadi, 2002).

Additionally, in response to the curriculum in madrasah (or schools for Muslims) that used to teach 100 per cent of Islamic subject, the Indonesian government issued the 1979 Three Ministers' Decree. This decree is an agreement signed by the Minister of Education, the Minister of Internal Affairs, and the Minister of Religious Affairs to oblige madrasahs to also adopt secular subjects. Since then, the madrasahs or schools under Ministry of Religious Affairs have been required to teach secular subjects such as languages, maths, natural

sciences, social studies, arts education and national ideology for 70 per cent, and Islamic subjects for 30 per cent (Zuhdi, 2006).

### **Introducing universal values and local/national values**

In terms of moral values to instil in a classroom setting, Bernstein's (2000) concept of 'symbolic control' suggests that school is aimed to symbolically direct the younger generation to meet the older generation's expectation. To elaborate the concept of symbolic control, Bernstein draws particular approach for moral education. Although Bernstein did not elaborate what particular values to teach, Bernstein suggests that teachers' awareness on developing morality is pivotal in any teaching process and he conceptualises this idea as Pedagogic Discourse. He defines 'pedagogic discourse' as instructional discourse (ID) that embedded in regulative discourse (RD) (2000, p. 31). ID is the subject to teach, but RD is how to teach the subject. With this concept, Bernstein emphasizes that teaching activity in the classroom should involve not only teaching particular content knowledge such as Maths, Science, or History to the learners but also introducing social order to the learners. Hence, the way teachers regulate the classroom must be intended to train learners' moral-conduct.

Bernstein's theory of pedagogic discourse underscores the character education policy in Indonesia that was trialled in 2010 and since then the policy has been implemented Indonesian schools. With this policy, Indonesian government required teachers to infuse stipulated values in every lesson. It is an additional policy to the existing school-based curriculum (KTSP). In this way, while using the lesson plan as prescribed by the school-based curriculum, teachers in Indonesia is required to articulate the stipulated values in their lesson plan. The detail of the implementation and the stipulated values are described and listed in the Handbook for the character of education (2011) published by Ministry of Education (see also Table 1).

In terms of value origins, the values offered by the government are rooted from Indonesian cultural values, religions and universal values. Values rooted from nation's cultural heritage and religion include polite, patriotism, friendly, and being religious, while the ones rooted from universal values include respect, hardworking and democratic. The variety of sources indicates Indonesian government ambition to cultivate the national values through its education while to also introduce universal values. Hence, the education is expected to enable students to be more confidence with their identity as Indonesian while being able to adapt in the global society.

The Ministry of Education and Culture, M. Nuh (2011) suggests that Indonesian schools through teachers of all subjects need to instil values such as tolerance and honesty due to their critical roles in the establishment of the culture of peace with other people and nature. This is being accomplished in Indonesia by implementing the character education policy as a part of national curricula. As Nuh (2011) said, the stipulated value is embedded in each course and administration at all levels of education, especially at the early stages.

Hence, a regulative discourse that focuses on learners’ moral development should be evident in every lesson plan of any subject no matter whether it is citizenship subject, religion subject or other subjects like Maths, English as a subject and Physical education. For the purpose, teachers should identify how to regulate the classes and what values to teach their lesson plans.

The ‘competition’ of values and ideologies is also evident in this character education curriculum. In addition to the eleven universal values (Lickona, 1997), Indonesia adds more values that rooted from its society, including religiosity, friendliness, patriotism, and nationalism.

Values transmitted in Indonesia (Kemendiknas, 2011)	Universal values (taken from Lickona 1997)
‘religius’ or religiosity	Honesty
‘jujur’ or honest	Respect
‘toleransi’ or tolerance	Tolerance
‘disiplin’ or discipline	Prudence
‘kerja keras’ or hardworking	Responsibility
‘kreatif’ or creative	Discipline
‘mandiri’ or independence	Helpfulness
‘demokratis’ or democratic	Fairness
‘rasa ingin tahu’ or eager to learn	Compassion
‘semangat Kebangsaan’ or patriotism	Cooperative
‘cinta tanah air’ nationalism	Courage
‘menghargai prestasi’ or highly regard achievement	
‘bersahabat/ Komunikatif’ or friendly/ communicative	
‘cinta damai’ or peace maker	
‘gemar membaca’ or good reader	
‘peduli lingkungan’ or environmental awareness,	
‘peduli sosial’ or social awareness,	
‘tanggung jawab’ or responsible	

From the table above, it can be seen that educational authority attempts to embrace many different values. As opposed to Durkheim’s (1961) idea for prioritising secular morality,

Indonesian seemed to include both moralities. Since the value of 'religiosity' is also stipulated, therefore, school and teachers can prioritise this value at their lesson plans. Further, my previous study has indicated that with the school-based curriculum that gives teachers more freedom to develop curriculum content and teaching materials, the sampled schools and teachers tended to also prioritise value of 'religiosity' in their schools' in their hidden curriculum and lesson plans (Qoyyimah, 2015).

The fact that schools and teachers prioritised both moral grounds shows that educational policy and practice tried to address the opposing goals. They want to cultivate values promoting national and cultural identity, while introducing universal values for students' adaptability in the global society and therefore global market.

### **Dilemmas in curriculum selection**

The 1979 Three Ministers' Decree is in line with MacIntyre's (1967) idea of developing students' morality through school curriculum. MacIntyre offered an approach of moral education by which the educational authority conducts the selection of subjects that would be taught in schools. He argues that to develop students' morality and sense of humanity, educational authority needs to add more proportions for humanistic subjects or social science in the curriculum such as Arts education and History.

Similarly, in the 1980s the Indonesian government intensified the history subjects in primary to secondary schools. Alongside the History of Indonesia, there was also Pendidikan Sejarah Perjuangan Bangsa (PSPB) or the history of nation's struggle subject. History of Indonesia describes the whole picture of Indonesia in the past including the kingdoms that established in the Indonesian archipelago. Meanwhile, PSPB is a particular history subject representing government version of the national history in relation to the people who struggled to gain Independence in civil wars against colonialism and Communism Riots in 1965. The instruction of PSPB is stated in TAP MPR No II/MPR/1982, the Outline of State direction (GBHN),

"Dalam rangka meneruskan dan mengembangkan jiwa, semangat dan nilai-nilai 1945 kepada generasi muda, maka di sekolah-sekolah baik negeri maupun swasta, wajib diberikan pendidikan sejarah perjuangan bangsa."

or

To fostering and cultivating the 1945 spirit and values in among younger generation, all state and private schools in Indonesia are required to instruct the History of Nation's Struggles (PSPB) as a core subject.

In spite of critic for being propaganda, the PSPB subject was taught in all schools from primary to senior secondary levels instead. Such history subjects are aimed to evoke students' awareness and sense of national identity. After the fall of the military regime in the early 2000s, the PSPB was abandoned. Yet, religion and citizenship subjects remain to exist in the current curriculum.

Besides, the more recently literature identifies that the market demand has also enforced change in education (Fullan, 2007). To address the global market, curriculum need to embrace what Bernstein said as Prospective pedagogic identities (PPI) by which curriculum is constructed to deal with cultural, economic and technological change (p.67). As mentioned previously, it is important for curriculum policy makers to issue subjects that enabling the younger generation to adapt with the global competitive market.

Likewise, the Indonesian government also introduced subjects dealt with cultural, economic and technological change. The striking feature of the government's attempt to equip students to face the more global market is the larger proportion of English as a subject and Information and communications Technology (ICT) subject in the 2006 curriculum. The fact that the proportion of weekly classroom time devoted to English subject makes as larger as Bahasa Indonesia, shows that English is regarded as an important subject (World Bank, 2011).

### **Gaps between theory and implementation**

Theories of moral education help educators who work in central authority and in a classroom setting to plan and foresee how to *symbolically control* youths to the intended outcomes in terms of both morality and attitudes. Yet, the two opposing goals, political agenda, and government's resources influence the implementation of the theories. As a result, there might be a gap between theory and implementation.

The first gap is about the prioritising values in state schools. This is regarding with Durkheim's (1961) idea that the state schools need to set aside morality that grounded from religion. This theory aligned with the 1980s government's regulation when students in

Indonesian state school were not allowed to promote religious symbols. This regulation applied to all state schools in Indonesia since the schools cater all students from a different background. As a result, students of Indonesian state schools were not allowed to wear hijab and to promote activities reflecting religious rituality at schools. However, in the last 2000s the regulation was abandoned. Further with the 2006 school based curriculum, state schools are allowed to develop their curriculum in accordance with values of the schools' community, including its religious values. Therefore, values of religiosity become very dominant in particular state schools in which the community surrounded are religious. The religiosity could be more and more permeated following the 2010 character education policy (see Table 1) that shortlisted 'religiosity' as value to instil.

The second is about the MacIntyre's idea of the introduction of Art as a subject at school. Although Arts is instructed at Indonesian schools, it makes relatively small proportion in the curriculum. In spite of the small proportion in a weekly meeting, the subjects consist of four skills to teach (traditional dance, music, acting, and fine art). As a consequence, the Art education is not taught optimally. This is ironic since Indonesia has a cultural heritage in terms of traditional dances and Arts. There should have been more proportion for Art subject since art promotes students to have a sense of tolerance, appreciation and respect (MacIntyre, 2013).

In terms of prospective pedagogic identities, the 2013 curriculum abandoned the ICT subject in Indonesian schools. The ICT is integrated into to learning facilities than as a subject. The cancellation of ICT invites the ICT teachers to send a protest to the government (Sidiknas, 2014). One of the reasons is the ICT subject could not be taught at schools in remote areas since the internet connection could not be accessed in the areas. It is hard to say that such problem in resourcing has made the subject cancelled. Rather than providing the facilities for schools in remote areas, the authority eliminates the ICT instead.

### **Conclusion:**

From the above theories drawn by Durkheim (1961), Bernstein (2000), Fullan (2007) and Yates and Grumet (2011), it can be concluded that school is therefore attempted to address many different agendas. i.e. not only preparing students for being aware of their national identity but also being competitive so that they are able to meet world's market demands. Similarly, in relation to Indonesian curriculum reforms, i.e. the character education policy,



the proportion of English and ICT in school curriculum, permeation of Pancasila ideology, massive PSPB subject, and the 1979 Three Ministers' Decree, it can be concluded that education and curriculum in Indonesia have been reformed purposefully for 1) responding to the problems arose in the Indonesian community, 2) preparing the youth for competitive global market, 3) re-energising cultural identities, 4) fostering political agendas of the government in charge to sustain power, and 5) Introducing shared values.

All in all, the use of the school as a moral training for the younger generation to cultivate national culture and strengthen nation's future challenge is evident in Indonesian curriculum reforms. Yet, this paper suggests the government implement the curriculum optimally and attempt to resolve the problems regarding the limitation of resources. Because, educating younger generation is an investment for this country to be able to compete in the more challenging global market.

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# THE STUDENTS TEACHER PREPAREDNESS TO IMPLEMENT CURRICULUM OF 2013 (A STUDY ON SELF-EFFICACY THEORY)

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## ABSTRACT

**Background:** The purposes of this study are (1) to describe individual preparedness to implement curriculum of 2013, (2) individual preparedness influences and learning materials coverage based on the implementation of curriculum of 2013, and (3) study program supports influence to implement curriculum of 2013.

**Methods:** Data collection methods are taken with observations and questionnaires and then are processed using descriptive and inferential analysis. The population is all economics education students of 2011 who are doing teaching internship in Semarang. This study uses proportionate random sampling that the samples obtained are 60 students.

**Results:** The results show that students are able to well implement the curriculum of 2013. They are able to determine learning indicators, learning objectives, learning materials, teaching approaches, media developing, learning resources, learning activities, and learning outcomes assessment. Individual preparedness and economic/accounting materials coverage influence the implementation of curriculum of 2013. Students' familiarity upon a curriculum may increase the individual preparedness to teach materials during the learning processes in the class. Curriculum familiarity may improve self-efficacy which encourages motivation, cognitive ability, and action while study program supports do not influence the implementation of curriculum of 2013.

**Conclusion:** the economics education students are able to implement curriculum of 2013. However, the study program supports do not adequately provide physiological and affective state in the form of disseminations, seminars, and workshops which are possible to improve the economics education students' self-efficacy.

**Keywords:** self-efficacy, individual preparedness, supporting teaching internship, implementation of curriculum of 2013

## Background

As prospective economics teachers, students of economics education do teaching internship in educational units both in junior and senior high school. The schools where they conduct teaching internship are in Senior High School (SMA) and Vocational High School (SMK). To support the formation of professional teachers, the students must be able to implement curriculum used in a particular school during teaching internship. One which is currently used is the curriculum of 2013. According to Jones (1994 in Rafli, 2008: 55), implementation is defined as *getting the job done "and" doing it*, that is, a job obtained from its implementation. One characteristic of learning is a learning which emphasizes personal experience through paying attentions (listening, seeing, reading, listening), questioning, reasoning, trying and communicating.

Those are in accordance with the opinions of Dyers, J.H. et al (2011) that learning processes supporting creativities are obtained through observing, questioning, associating, experimenting, and networking. Assessments of learning outcomes are carried out based on the ability of process, value, knowledge, and self assessment. Therefore, it takes individual preparedness and understanding of economics/accounting/administrative office teaching coverage based curriculum of 2013. To get a job, an individual require preparedness of things needed in the implementation of duties: physical, mental, and cognitive aspects. This is also applicable for teachers who act as facilitators in learning process.

This preparedness is influenced by several factors. Students' familiarity upon a curriculum may improve individual preparedness to deliver the materials in the class. Familiarity upon a curriculum may improve *self-efficacy* which encourages motivation, cognitive ability, and associated actions related to the materials. Self-efficacy theory may explain why students who are not familiar with the material have tendencies not to discuss these learning materials. The availability of teaching materials also influences individual preparedness to deliver the materials, especially for the new ones. Langenderfer and Rockness (1989) mention that the practical obstacles arise when the teaching materials related to the topics are not adequate available.

In addition to individual factor, institutional supports and teaching materials coverage in curriculum of 2013 also influence its implementation. institution or study program supports in the form of disseminations, socializations on economics curriculum of 2013, workshops and seminars on economics materials of curriculum of 2013 determine the economics education students' success. Mayhew and Grunwald (2006) as quoted by Zhu et al. (2010) find evidence that a variety of training may improve the quality of more various material deliveries. Material variations performed by the students are their basis of success in implementing the curriculum.

## Literature Review

### The Implementation of Curriculum of 2013

According to Jones (1994 in Rafli, 2008: 55), implementation is defined as *getting the job done "and" doing it*, that is a job obtained from its implementation. While according to Van Matter and Carl (1974 in Rafli, 2008: 55) mentioning that implementation emphasizes on an action taken individually, in group, by government and private sectors to meet the goal individually or based on previous decisions. Anderson (1984: 50) states that all forms of benefits and costs on policies either directly or indirectly should be measured in terms of symbolic or real impacts. In the world of education, curriculum may be defined in narrow and broad sense. Curriculum in narrow sense is defined as number of courses should be mastered by a student to gain a diploma. Curriculum in broad sense is all experience facilitated by an educational institution to its students during their study (Arikunto, 2008: 131).

The cores of curriculum of 2013 are on simplification efforts and thematic-integrations. The curriculum of 2013 is prepared to create generations who are ready to face the future. Thus, the curriculum is organized to anticipate the developments in the future. The emphasis is to enable learners or students to conduct observations, ask questions, give reasoning, and deliver presentation after they receive and master the learning materials given. The objects of learning in the organization and completion of curriculum of 2013 emphasize on natural, social, arts, and cultural

phenomena. The following core competencies are designed in four inter-related groups which are related to (1) religious attitudes/KI 1, (2) Social attitudes/KI 2, (3) Knowledge/KI 3, and (4) Application of knowledge/KI 4. From above definition it can be concluded that the implementation of curriculum of 2013 is an implementation process which focuses on communication or socialization and intensity or frequency of curriculum teaching performed by economic education students.

### **Self Efficacy Theory**

Bandura (1997) defines self-efficacy as a belief in someone's ability to organize and perform necessary actions to achieve the targets. Bandura states that there are four sources of self-efficacy contributing to teaching efficacies: mastery experiences, physiological and emotional arousal, vicarious experience, and social persuasion. Self-efficacy influences choices, actions, efforts, resistance in facing the problems, mindset, emotional reactions, and the achievement levels upon targets. In addition, self-efficacy also determines how good someone acquires the knowledge and skills learned.

Bandura (1997) describes four sources of information leading to self efficacy:

- 1) *Personal performance accomplishments*
- 2) *Vicarious learning*
- 3) *Social persuasion*
- 4) *Physiological and affective states*

The influences of those four sources of information to self-efficacy depend on several factors, such as individual's tendency and interpretation. In general, active mastery, however, has potentials to use its large influences on self-efficacy. Successful experience on tasks or achievement domains tend to raise self-efficacy in relation to tasks or domains while convincing or repeating failure will tend to be lower. Bandura who develops the concept of self-efficacy explains that self-efficacy may reach domain and context specifically (Chen, G., Casper, W. J. and Cortina, J. M., 2001). In general, efficacy upon outputs in teaching is an individual's belief which may reach the expected target while efficacy upon expectations in teaching personally is teaching efficacy which is associated with more specific teaching situations.

One form of personal achievements or active mastery skills is individual preparedness of and teaching coverage of curriculum of 2013 in lectures. According to psychological dictionary, preparedness is "level of maturity development or maturity favorable to practice something" (Chaplin, 2006: 419). According Slameto (2003) "preparedness is a person's or individual overall conditions which make him ready to give responses or answers in a particular way upon situations and conditions he faces". According to Dalyono (2005: 52) preparedness is defined as good physical and mental abilities. Physical preparedness means having enough energy and health while mental preparedness means having sufficient interest and motivation to perform an activity. According to Hamalik (2008: 94), preparedness is level or state that should be achieved in individual development process at the level of mental, physical, social and emotional growth.

On practice students' familiarity on a curriculum may increase individual preparedness to deliver the materials in the class. Curriculum familiarity may enhance self-efficacy which encourages motivation, cognitive ability, and actions related to the materials. Self-efficacy theory explains that students who are not familiar with the material have a tendency not to discuss the material in learning situations. The availability of teaching materials also influences individual preparedness to teach the materials, especially the new ones. Langenderfer and Rockness (1989) mention that the practical problems when implementing the curriculum increase as there are no adequate teaching materials related to the topics. Individual preparedness and teaching coverage of the curriculum in this research is the economics education students' perception in teaching economics /accounting/ office administration based on the curriculum of 2013.

Furthermore, the success of individuals to implement economics curriculum of 2013 derived from physiological and affective state in the form of study program or institutional supports. Institutional supports in delivering curriculum of 2013 also influence the curriculum

implementation. Institutional or study program supports are in the forms of disseminations and socializations of economics curriculum of 2013, such as workshops and seminars on economics materials of curriculum of 2013. According to Moss (2002) in Shechtman et al. (2005), the working environment consists of three dimensions: (1) relationships, including engagements, cohesions among individuals, and supervisor supports, (2) individual development (personal growth), including autonomy, task orientation, and working pressure, and (3) system maintenance, including rules clarity, management’s control levels, and innovation. Based on above opinions, it can be concluded that study program supports is the perception on efforts that study program makes to facilitate students understand the curriculum of 2013.

Furthermore, we hypothesize that: (1) There are influences of individual preparedness and teaching coverage upon the implementation of Curriculum of 2013, (2) There are influences of Support Program upon the implementation of curriculum of 2013, (3) Individual Preparedness, learning coverage, and study program supports altogether influence the implementation of curriculum of 2013.

## Methods

The population of this study is all students majoring economics education of 2011 (semester 6) and are doing teaching internship in Semarang with the total of 180. The samples are taken using *proportionate random sampling technique*. Sample distributions are based on number of students’ proportion in different majors of study with a formula (Riduan & Kuncoro, 2011: 57) that 60 samples are obtained. Methods of data collection use questionnaires and documentations. Data are analyzed using descriptive and inferential analysis with multiple linear regressions using SPSS version 21. The followings are definitions and the measuring variables.

**Table 1. Table of Operational Definitions of Research Variables**

No	Variable	Definition	Indicator	Instrument
1	Individual Preparedness and Learning coverage of Curriculum of 2013 (X1)	Perception on preparedness of economics education students for teaching economics/accounting/ office administration materials based on curriculum of 2013.	1. Students’ familiarity or understanding on economics materials 2. economic materials availability	Questionnaires
2	Study Program Supports (X2)	study program’s efforts to facilitate students understand the curriculum of 2013	1. Cooperation with other institutions concerning with disseminations and workshops included in courses	questionnaires
3	Implementation of Curriculum of 2013 (Y)	an implementation process focusing on communication or socialization and intensity or frequency of curriculum teaching performed by economics education students	1. Intensity of curriculum teaching 2. Organizing syllabus and lesson plans	questionnaires

## Results and Discussions

### Results

Validity and reliability test are conducted to have instrument testing of this study. The validity test uses SPSS version 21. Based on instrument testing (questionnaire) upon 30 respondents with 25 question items, the individual preparedness and learning coverage variable of curriculum of 2013 with familiarity indicator on economics/accounting learning and learning intensity of curriculum of 2013 show significant results. Thus, it can be concluded that each question indicator is valid.

SPSS version 21 is used for reliability testing. Based on the results of instrument (questionnaire) testing to 30 respondents with 25 question items, individual preparedness and learning coverage variable of economics/accounting curriculum have the Cronbach Alpha value of 80.1%, which is according to Nunnally (1994) said to be reliable because the Cronbach alpha value is > 70%. SPSS output display for study program support variable which has the Cronbach alpha value of 73.3% is said to be reliable. Implementation variable of curriculum of 2013 has the Cronbach alpha value of 76.6% which means reliable. Based on the results of presentative descriptive analysis show that the individual preparedness and teaching coverage of curriculum of 2013 are high at 76.83% while the study program support is lower, that is, at 48.75% and the ability of student teachers implement the curriculum is high at 81.80%.

Before the inferential statistical analysis test is conducted, classical assumption of multiple linear regression models is undertaken. Multiple linear regression models may be considered good as it meets BLUE (Best Linear Unbiased Estimator) criteria. BLUE may be achieved as it meets the Classical Assumption. Based on the normality test results, it shows that the data are normal as the kurtosis and skewness ratio is between -2 up to +2. The multicollinearity test results show that the FIF value is <10 which means that there is no multicollinearity. Based on SPSS results, the FIF value is 1.121. It is in accordance with the results of heterogedastisity test which show significant value. The following table is the results of regression coefficients.

**Tabel 2. Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
1 (Constant)	32.405	3.733		8.680	.000		
Learning coverage	.474	.170	.357	2.786	.007	.892	1.121
Study program supports	.049	.060	.104	.815	.419	.892	1.121

a. Dependent Variable: implementation of curriculum of 2013

Based on data processing results which use SPSS version 16.0, the regression equation is obtained as follow:

$$Y = 32,405 + 0,475 X_1 + 0,049 X_2$$

There are two hypothesis test used: partial and simultaneous test. Based on simultaneous test results conducted with variance analysis for regression, the value of *F count* is 5.558 with a probability of 0.006 < 0.05 which means significant. Thus, the working hypothesis (Ha) stating that there are individual preparedness, learning coverage, and study program support influences upon the implementation economics/accounting curriculum of 2013 is accepted. Simultaneous test results may be seen in the following table.

**Tabel 3. Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.404 <sup>a</sup>	.163	.134	3.37564	.163	5.558	2	57	.006

a. Predictors: (Constant), study program supports and Learning coverage

b. Dependent Variable: implementation of curriculum of 2013

Based on the results of regression analysis, simultaneously coefficient (R) is at 0.404 and determination coefficient is at 0.134. It shows that individual preparedness and learning coverage of economics/accounting curriculum and support study programs influence the implementation of

curriculum of 2013 up to 13.40 %, and 86.60% is influenced by other factors unrevealed in this study.

Based on partial testing of hypothesis I, it is obtained that the  $t_{\text{count}}$  is 2.786 with a significance value of 0.006. As the significant value of 0.0306 is < the significance level (0.05), it can be concluded that  $H_a$  is accepted. Due to the test results of Hypothesis II, it is obtained that the  $t_{\text{count}}$  is 0.815 with a significance value of 0.419. As the significant value of 0.419 is > the significance level (0.05), it can be concluded that  $H_a$  is rejected.

## Discussions

One competence form of personal achievement or active mastery is the individual and learning coverage of curriculum of 2013 preparedness. If the students have it well, it may increase their self-efficacy to implement economics materials of curriculum of 2013. They also influence the implementation of curriculum of 2013. It means that students' familiarity to a curriculum may increase individual preparedness to well deliver the materials in the class. Curriculum familiarity may enhance self-efficacy that encourages motivation, cognitive ability, and actions associated with those materials. Self-efficacy theory explains why students who are not familiar with a material have the tendency not to discuss it in learning processes. The availability of teaching materials also influences individual preparedness to deliver the materials, especially for the new ones. Langenderfer and Rockness (1989) mention that the practical obstacles to implement the curriculum arise when teaching materials related to the topics are not adequately available.

There are several aspects influencing the implementation success of curriculum of 2013 such as understanding economics accounting curriculum, understanding basic and core competencies, understanding economics/accounting /office administration materials, understanding learning model determination, and understanding lesson planning preparedness. Individual preparedness in understanding economics/accounting materials will make the students easier to implement curriculum of 2013. In curriculum of 2013, students understand the core and basic competences. Those two competencies will later become references in learning activities implementation. Teaching internship is conducted to support the implementation success of curriculum of 2013. It is in accordance with the findings of Harnanik (2013) mentioning that teaching experiences such as microteaching may influence the education students' efficacy. Mayhew and Grunwald (2006) as quoted by Zhu *et al.* (2010) finding evidence that a variety of training may improve the quality of more various material deliveries. Thus, its implement will be easier in the class.

Individual preparedness is the main implementation key success of the working performances. It is in accordance with the opinion of Dalyono (2005: 52), stating that preparedness involves good physical and mental abilities. Physical preparedness means having enough energy and health, while mental preparedness means having sufficient interest and motivation to perform activities. If education students have good physic and mental, they will be easily to do the job (process of learning) and those activities may run smoothly based on the expected purposes.

Other sources of information leading to self efficacy are Physiological and affective states in the form of study program supports. The materials of curriculum of 2013 should be included in curriculum study, lesson planning, teaching and learning strategies, and evaluation of learning outcomes courses. However, since the curriculum of 2013 is newly socialized and established in 2013, the students do not learn the curriculum during their study. Since students are only given Kurikulum Tingkat Satuan Pendidikan (KTSP) related courses materials, they have to learn any material related to curriculum of 2013 outside the lectures. The Curriculum of 2013 is different from KTSP. Therefore, students need to understand the curriculum of 2013. The department should design ways which enable students understand the curriculum of 2013 as they will perform their teaching internship (PPL) at any educational unit which has already implemented the curriculum of 2013.

One of the ways students may do is joining workshops, trainings, and seminars of curriculum of 2013 that their knowledge and views may become broader. Based on results of the study, it shows that study program supports do not influence the curriculum implementation. It may happen



since study program never conducts seminars and trainings of curriculum of 2013 for students majoring economics education. Actually, a workshop has ever been conducted by of Community Devotion Team from Economics Education Department. However, it is only limited for 10 students of each rombel (a group of student taking the same course/class) that information the students obtain may not be optimized.

This study supports Moss (2002) in Shechtman et al. (2005) stating that working environment consists of three dimensions: (1) relationships including engagements, cohesions between individuals, and supervisor supports, (2) individual development (personal growth) including autonomy, task orientation, and work pressure, and (3) system maintenance including the clarity of rules, the management's control level, and innovation. Those aspects show that to implement a policy, all parties must support it in which each party is interconnected. Thus, not only students who are required to understand the curriculum of 2013, but the department should also be able to facilitate them to understand the curriculum of 2013 by giving seminars, workshops, and trainings.

## Conclusions

Results of the study show that the students are able to well implement curriculum of 2013. The students are able to well implement curriculum of 2013 based on competence indicator in determining learning indicators, learning objectives, learning materials, teaching approaches, instructional media, learning resources, learning activities, and determining assessments of learning outcomes. Individual preparedness and learning coverage curriculum of 2013 influence the curriculum implementation of 2013. It means that understanding on economic accounting curriculum, basic competence, main competence, economics/ accounting/office administration materials, learning model determination, and lesson planning preparedness are as the basics to easily implement curriculum of 2013 while study program supports do not influence the curriculum implementation of 2013. It happens since study program unit do not conduct disseminations, seminars, workshops, and training on curriculum of 2013.

## Suggestions

1. It is necessary to conduct researches using other variables which influence the success of implementation of curriculum of 2013.
2. Including curriculum materials of 2013 in the course of curriculum study, lesson planning, teaching and learning strategies, and learning evaluation.
3. Individual preparedness variables, such as physical and mental preparedness may be described in more detail that their influences on curriculum implementation of 2013 are obvious.

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# **CURRICULUM BASED BLENDED LEARNING MODEL TO IMPROVE STUDENT SOFTSKILL IN HIGHER EDUCATION**

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## **Abstract**

In higher education, students obtain education in the form of knowledge that is typical of a discipline which he passes. But despite the discipline of science knowledge, students also need soft skills such as thinking skills, learning skills and living skills so ready to plunge in the community. These soft skills are usually obtained from the training of a special nature. But the actual process of learning is also significant potential to improve the soft skills. Blended learning is a learning process that uses a combination of web-based teaching materials (online) and face to face. Through this model, the curriculum can be developed to be more open so that students can improve soft skills. Learning development model chosen for this model is the model of ADDIE (Analysis, Design, Development, Implementation, Evaluation). This model is one model that became a guide in developing effective learning, dynamic and supportive learning itself so that it can assist the lecturer in the management of learning. This is conceptual article. This article aims to describe the development of blended learning curriculum based curriculum with ADDIE models to improve the soft skills of students.

**Keywords:** improvement softskill, blended learning, ADDIE models, students

## BACKGROUND

Developing the instructional design needs an evaluation on futuristic learning tendency relating to learning content and strategy. The tendency of implementing the learning strategies has changed the traditional learning approach to the futuristic learning, called as century of knowledge, in which states that learners can learn; everywhere, means that learners can learn in any places they want, such as; class, library, and home; whenever, means that learners can learn anytime they want to without a schedule made by schedule, they can learn at morning, noon, evening or night; whoever, means that students can learn and get learning sources from lecturers, experts, practitioners, or society; any sources, means that learners can learn from any learning materials such as internet, CD ROM, radio, television, laboratory, and direct experience. Furthermore, skill needed to face the futuristic learning are communication, emotional, language, group, ethics and morality, polite and spiritual skills.

The high criterion of worker candidates is required by work world which prioritizes not only their academic skill but also soft skills, a non-technical skill such as norms and value. Softskill should be considered as important aspect starting from the recruitment process to working. Therefore, balancing the two skills, soft and hard, is essential aspect in work world, and if a worker candidate only has softskill, he will be less competitive than one with softskill. The worst is failure of getting the job. Elfindri et(2011:67), state that softskill can be defined as good skills of communication, emotional, language, group, , having ethics and having morality polite and spiritual. Therefore, softskill can be integrated in blended learning-based curriculum.

Within the research result of Hendri (2009: 16) in Nisaul (2012: 5) states that the development of web platform opensource-based blended learning can be used in Computer Course of Instructional Technology Department, State University of Malang or other courses, but there should be comprehensive evaluation and supporting policies on the implementation of learning process. Blended learning has also been developed at the European Academy Online (EOA) in cooperation with the Jean Monnet-Chair of Political Science, University of Cologne and other partners, (from graduate program of Science Program, Humanities and Social Science study program at the European Union Electronic Learning Studies connecting to the internet (online) (<http://www.masterstudies.co.id>)). Through blended learning, not only generic skills of students increases but also their communication and cooperation skills. Blended learning model is considered as the solution in developing model of learning of the institution with traditional learning model. Srisakdi (2006) in the development of web-based instructional material manual book, published by Department of National Education, states that learning models are classified into four groups. As shown in Table 1.1, explaining that blended learning developed by Srisakdi refers to definition in table 1, so the development of electronic learning through Internet is not supplementary learning activities because face to face-based learning, discussions, forums and other activities are systematically conducted and integrated to the developed web.

The constructed Blended Learning-Based Curriculum will bridge the model of Teaching-Based And Instructor-Mediated Learning toward Learning-Based Instructional. The advantages of research are to provide instructional resources for students to develop their optimum capability in hard skills and soft skills. Therefore, Blended Learning-Based Curriculum model is needed to improve soft skills of students.

## REVIEW OF RELATED LITERATURE

### Soft Skill

According to Elfindrid et al (2011:67), defined that having skills such as soft skills and life skills are advantageous not only for individual, groups, or society, but also god and makes someone's existence is noticed among people in the community, and also the communication,

emotional, language, group, ethics and morals, behavior and spiritual skills. In addition, Iyo Mulyono (2011: 99) states that softskill is a sumplement of hards skills referring from person's intellectual and often used as requirement for getting a curtain position or job.

Aribowo, as Quoted by Illah Sailah, (2008: 17), stated that soft skills is a coomunication skills own by a person with other people (including himself). The characteristics of soft skill consist of values, motivations, behaviors, habits, and character and attitude onwed by a curtain person. The criteria of softskill are highly different among individual because it is influenced by the habits of thinking, talking, acting and behaving. However, these characteristics can change according to the their way of practicing and accustoming new things, habit.

From these definitions, it can be formulated that softskills are basically skills owned by the individual (born with softskill), as a sumplement of a hard skill, and having both hardskill and softskill should be balanced. Learning softskill is really important for university students to face the industrial and work world, in which softskill is hihly required. Referring to Survey National Association of Colleges and Employee(NACE,2002) in Elfindri et all (2011:156)

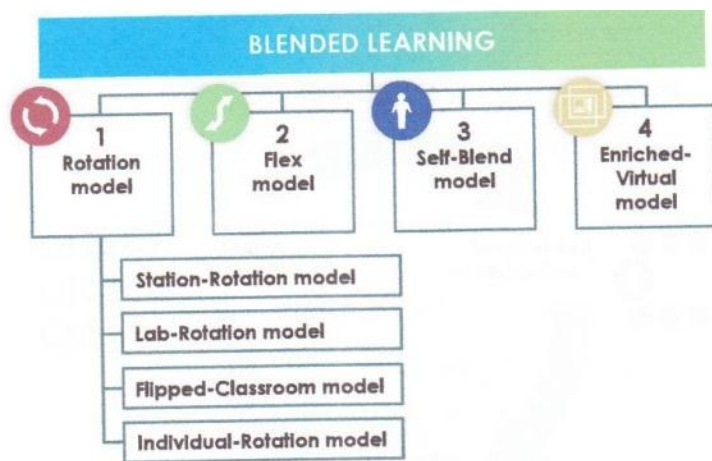
Table 2. the skills needed in job market

skills	score	skill classification	urgency of ranking
Communication	4,69	Soft skill	1
Honesty / integrity	4,59	Soft skill	2
Cooperate	4,54	Soft skill	3
interpersonal	4,5	Soft skill	4
A good work ethic	4,46	Soft skill	5
Motivation / initiative	4,42	Soft skill	6
adaptive	4,41	Softskill	7
analytical	4,36	Kognitif	8
computer	4,21	hard skill	9
Organization	4,05	Psikomotor hardskill	10
Orientation	4	Softskill	11
detail	3,97	Softskill	12
Leadership	3,95	Softskill	13
Self-confident	3,82	Softskill	14
Polite / Ethical Wisdom	3,75	Softskill	15
GPA> 3.00	3,68		16
Creative	3,59	Softskill	17
humorous	3,25	Kognitif	18
Entreprenership	3,23	hardskill	19
competence		Softskill	

Sources :Elfindri et al,*SoftSkills for educator*

### CURRICULUM BASED BLENDED LEARNING MODEL

To develop blended learning model (BL), Innosight Institute (2012) identified that there are more than 80 implementation programs using blended learning ( BL) in schools in America. In addition, on November 2011, there were about 100 educational experts held a meeting during the pre-conference of the International Association for K-12 Online Learning's (iNACOL) Virtual School Symposium that concludes the taxonomic model of blended learning (BL). There are four basic blended learning models categories, currently popular in the primary and secondary education, as follows.

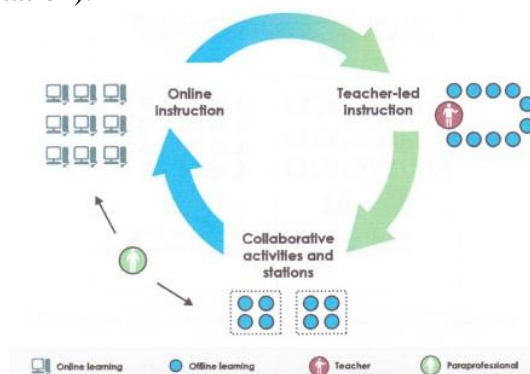


Here are definition of model and sub-models and the examples;

**1. Rotation Model** - a program in a subject (eg, math) asks students to rotate in a determined schedule by lecturers among learning modalities, at least one of which is online learning. Other modalities can be in the form of small group teaching or one class group, group projects, individual tutoring, as well as assignments / written exam.

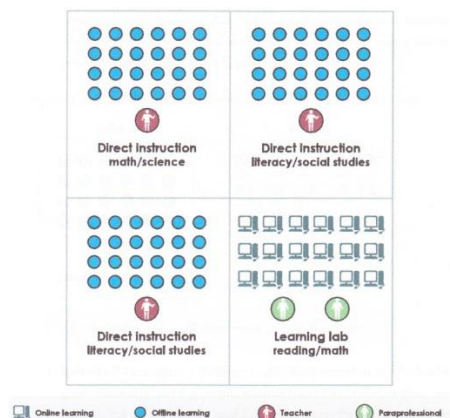
- a. Station Rotation- is Rotation learning model in a course (eg, math) which asks students to rotate in a predetermined schedule by lecturers between classroom-based learning modality. This rotation includes at least one station for online learning (online), while other stations could be in the form of small group, one class group, group projects, individual tutoring, as well as assignments / written exam. Students are asked to move into various types activities together, while implementation may be in the form of dividing students in a small group discussion or one by one rotation. Station Rotation Model is different from the Individual model because students rotates passing from all stations, not just a few the station according to schedule of each station.

Example : KIPP LA Empower Academy provides each classroom in kindergarten with 15 computer units. In one day learning, lecturer rotates students through online learning, small group and individual assignments. The following picture shows one of the station's rotations in schools (each rotation is different in a course; this figure shows only an example of the rotation).



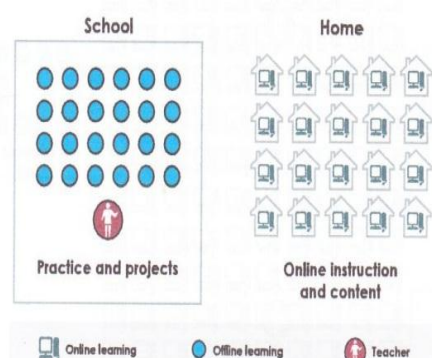
- b. **Lab Rotation** -Rotation learning model in a course (eg, math) which asks the students to rotate in a predetermined schedule by a lecturer at the place constrained by the walls in the school. At least, one of the rooms used as Learning Lab using online learning, while others classroom serve as other learning modalities. Model of Lab rotation is different from Station Rotation Rotation because students are invited to rotate in an area of the school, not only rotates in a classroom , blended learning model for specific course.

Example: In Education rocketship, students rotate from the classroom to learning laboratory to learn for two hours every day to deepen their mathematics and continue of have reading activities through online learning.



- c. Flipped Classroom - a Rotation learning model in a course (eg, math) which asks the students to rotate on a fixed schedule between practices (or project) learn face to face with lecturers during a standard learning hours in school and deliver the content and online learning materials in the same course from a remote area (usually home) out of learning hours in school. media used for presenting content and online learning materials distinguish Flipped Classroom from students doing their task online in the evening. Flipped Classroom Model is appropriate with the basic idea of blended learning (BL) that includes some elements; such as student control over time, place, path, and or speed because this model allows students to choose their own locations to accept instruction online, and controlling the speed of their learning through online element.

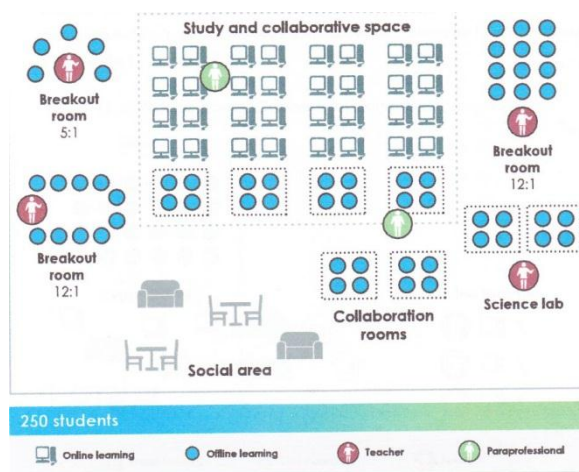
Example: In Stillwater Area Public Schools, located in the river St. Croix in Minnesota, 4-6 graders in math class use a tool connecting to Internet after school learning hours. In which they set to watch learning videos asinkron for about 10-15 minutes, then answer a few questions through Moodle. When they are at school, they practice what has been learned through video together with lecturers in face to face based learning.



- d. Felix model-a program that uses Internet as a medium to deliver learning content, while students move dynamically according to the schedule designed by each individual among learning modalities, and lecturers get ready in same location. here, the lecturers or other adults to are ready to support them in a face to face based learning whenever they need help by as small group discussions, group projects, and individual tutoring. practically, some programs provide face to face learning to support services them in large portions, while others do not provide help of plenty. For example, some flex models provide

certified lecturers to do face to face learning in helping to learn online while others don't. However, other programs have a combination of different staffs. These variations become a distinctive marker that will describe each shape model of Flex.

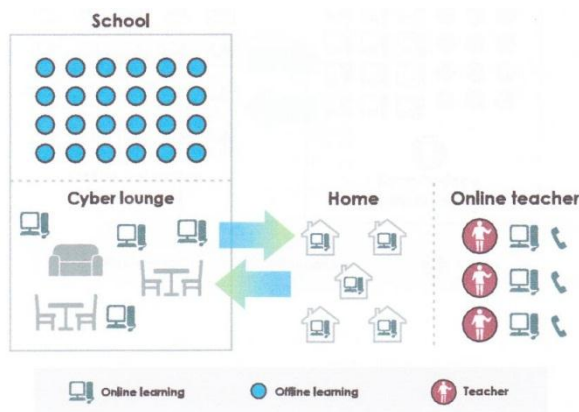
Example: In San Francisco Flex Academy, an online learning service providers, K-12, Inc., provides a curriculum and instructional materials, while lecturers provide a face to face learning using a dashboard data to provide intervention and supplements in every school hours for core courses. Lecturers stand behind the scenes (teachers-of-record) for core course, also acts as a lecturer in face to face learning. (among elective courses with a help of the lecturers of K12, Inc. work just as a stand by lecturer(teachers-of-record) without serving a face to face meeting. this elective classes are classified as Self-Blend models that will be discussed in this article. Figure 10 shows a model used by San Fransisco Flex Academy.



- e. Self-Blend model- refers to a scenario that frees the student to select one or more classes in online learning as a supplement material of their traditional classes, in which standby lecturers keep online done by the lecturer. Students can take their online classes in school or outside of school. This model is different from online learning intact (full-time) and the Enriched Virtual models (definition in the next section) because this model does not provide a learning experience entirely for students. Students perform self-blend (mix model of learning based on their own initiative) between online learning classes on campus against face to face learning with lecturers.

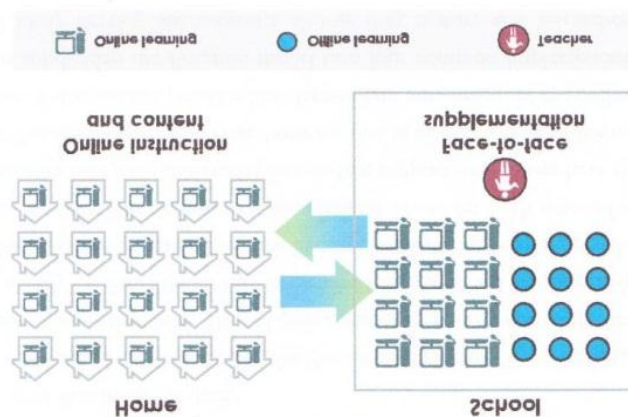
Example: Quakertown Community School District (QCSD) in Pennsylvania gives an opportunity to students in 6-12 semester to take an online class or more. Before taking the class, all are required to attend students' orientation on cyber learning. The online classes are designed asynchronous and students can use maximally a lesson during learning hours. QCSD has provided "cyber lounges" which make students learn through online learning in school, but they are also allowed to complete their task at anytime and place they want. Stand by Lecturer acts as an online class lecturer and most of them teach in face to face leaning in QCSD





- f. Enriched-Virtual model - a complete learning experience in schools that allow students in a course (eg, math) to divide their time between to follow school teaching and learn independently outside of school through online learning to deliver content and materials. Most of the Enriched Virtual models, as an online learning program, and then attempt to develop a blended learning (BL) to provide students with different learning experience from school. This model is different from the Flipped Classroom model because in this model students don't follow most of learning process every week. This model is also different from the Self-Blend models because these models provide a learning experience in a whole school, not just a class-by-class.

Example: In Albuquerque Ecademy, students of 8-12 semester do face to face learning with the lecturers in the first meeting in a classroom. After that, they can continue learning activities at separate locations, if they wish, as long as they can keep average schore of the course at "C" grade .14 Figure 12 shows a model Enriched Virtual applied in Ecademy.



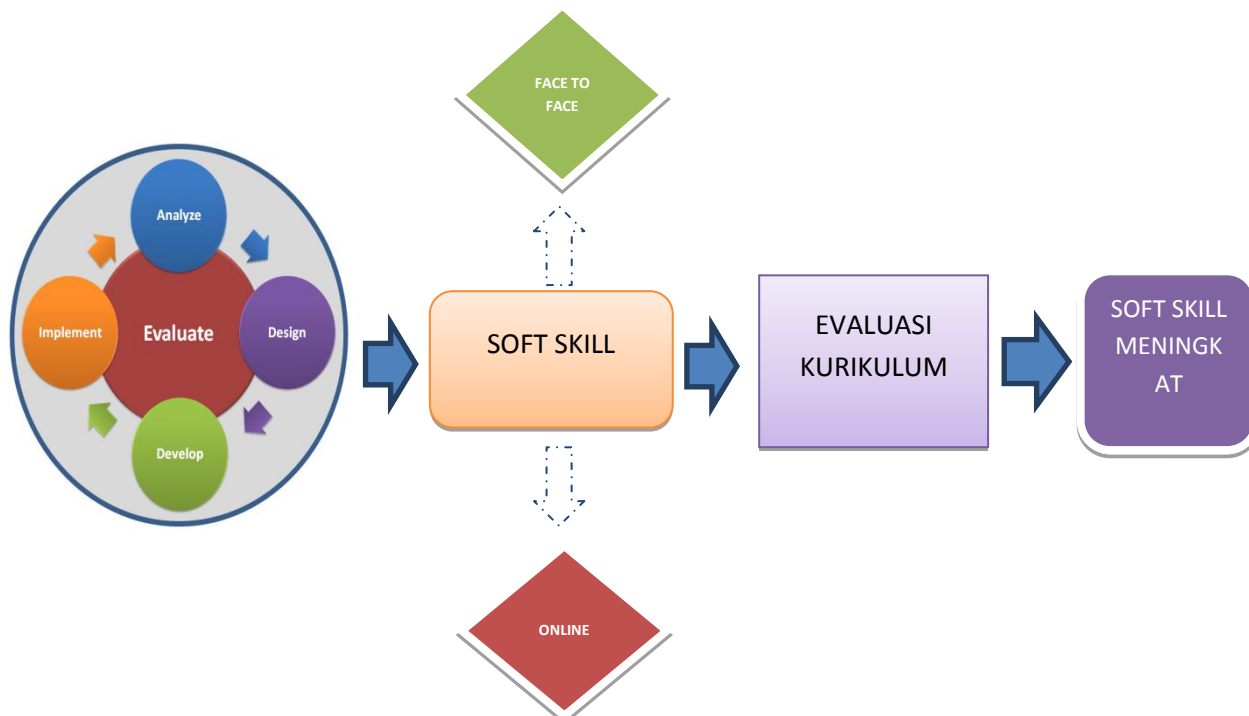
### **CURRICULUM BASED BLENDED LEARNING MODEL THROUGH ADDIE (ANALYSIS, DESIGN DEVELOPMENT IMPLEMENTATION AND EVALUATION )**

Selecting a development model will either produce a effective and efficient product. The accuracy of selecting a development model will produce the right product. One characteristic of the accuracy of product development results are products which can be applied properly and beneficial for users. The results of good and right product development will increase the students' motivation and desire to seek deeper knowledge of the material. In addition, the product of blended learning media presentation and a good web to improve student softskill.

ADDIE models implements the basic stages of development design. According Molenda (2003), the ADDIE model is a colloquial term used to describe a systematic approach to the

learning development. ADDIE, an acronym, refers to the main processes of learning systems developmental process such as; Analysis, Design Development Implementation dan Evaluation. Some reasons why ADDIE is used;

1. ADDIE is a model that provides an opportunity to evaluate and revise continuously in every phase passed, so product resulted is valid and reliable,
2. ADDIE IS simple but has systematic implementation



ADDIE model has four systematic stages includes all design of learning process in a systematic way.

### 1. Analyze

In the analysis phase includes the implementation of a needs analysis, problem identification, and objective formulation (Reiser & Dempsey. 2002: 19). In the analysis phase, the developers identify a gap between the learning conditions of the current soft skills such as language skills, generic skills, skills to process the numbers, courtesy, responsibility, and so on. In this stage, analyzing the required purpose is needed. needs analysis step is a process of defining what will be learned by learners, we have to do some activities, including needs analysis, problems identification, and tasks analysis. Therefore, the output obtained is in the form of students' characteristics, gaps identification, needs analysis and detail tasks based on needs. Analysis stage consists of two stages: 1) performance analysis, developers analyze skills, students' knowledge and learning motivation in the learning process, 2) need analysis, developer analyze learning, needs and problems that is relevant to material, web learning, learning media of presentations, learning strategy, learning motivation and learning conditions.

### 2. Design

Design consists of formulating common measureable goals, classifying learners into several types, choosing the learning activity, and media (Reiser & Dempsey. 2002: 19). At the design stage, the developer formulate learning objectives, assessment processes, learning activities and learning content. Objectives are usually set for the three domain areas, namely cognitive (thinking), psychomotor (movement), and affective (attitude). Another consideration are a process of selecting media and choosing the learning strategies used in blended learning based instruction.

In this stage, designing instructional materials of soft skills to formulate for both general and specific learning objectives then to develop test items or questions to measure progress of students and level of achievement of formulated objectives, and develop learning strategies. Development of

blended learning based instruction is also designed through basic principles to attract students. After that, determining when online, face-to-face and offline learning with the skill material soft has been prepared by the lecturer.

### **3. Development**

The development phase includes preparing the material for learners and teachers in accordance with the specifications of the products developed (Reiser & Dempsey. 2002: 19). In the stage of development, developing products in suitable with material and objective delivered in learning activities. similarly, other learning environments that will support the learning process, everything should be prepared at this stage.

### **4. Implementation**

The implementation phase includes the delivery or use of products development applied in the learning process that has been designed in design stage (Reiser & Dempsey. 2002: 19). this stage begins by preparing the instructor or teacher training, and preparing learning tools and environment. After everything is available, designers can implement developed product into the learning process. the stages integrate soft skills in the curriculum is, as follows:

- a. What input of each session of teaching softskill will be produced, after each skill are formulated, then setting how each learning insert softskill for each.
- b. Designing what method used by students in each session or in some meetings
- c. Conducting trial test for students of a curtain group and observing them to find out the real result before and after test. If lecturers want to conduct classroom action research (CAR), softskill for students are one of the given treatments.
- d. Review of test result for revision because it is not easy process that needs a see stages to stages to revise
- e. Finalizing learning methodology after a repeated cycles. Therefore, it can be written in a teaching manual of a course containing content, instructional materials, teaching method, softskill and other teaching method. (Elfindridkk,2011:137).

### **5. evaluation**

This stage includes two forms of evaluation, the formative and summative evaluation then being revised, if needed(Reiser & Dempsey. 2002: 19) .Evaluation of research and development is a formative evaluation at each phase of development, and summative evaluation at the end of the developmental phase for the next revision to determine whether the product development has been valid for learning. When the evaluation phase applied, lecturers, as designers, evaluate the developmental model including Content / materials, developed instructional media, as well as an evaluation of the effectiveness and success of the developed media. In the stage of data clarification obtained from a questionnaire in the form of students' responses, as well as responses to the competence, knowledge, skills, and attitudes owned by students after following blended learning based instruction. If the there is improvement of competence, knowledge, skills, and attitudes of students, development of blended learning based instruction is classified as successful. And if there are no changes at all or there is a decreasing results, it is necessary to revise so that there is an increase in soft skills of students.

## **CONCLUSION**

having skills such as soft skills and life skills are advantageous not only for individual, groups, or society, but also god and makes someone's existence is noticed among people in the community, and also the communication, emotional, language, group, ethics and morals, behavior and spiritual skills. These soft skills are usually obtained from the training of a special nature. But the actual process of learning is also significant potential to improve the soft skills. Blended learning is a learning process that uses a combination of web-based teaching materials (online) and face to face. Through this model, the curriculum can be developed to be more open so that students can improve

soft skills. Learning development model chosen for this model is the model of ADDIE (Analysis, Design, Development, Implementation, Evaluation). This model is one model that became a guide in developing effective learning, dynamic and supportive learning itself so that it can assist the lecturer in the management of learning. Therefore, If the there is improvement of competence, knowledge, skills, and attitudes of students, development of blended learning based instruction or classified as successful. Or even if there are no changes at all or there is a decreasing results, it is necessary to revise so that there is an increase in soft skills of students.

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## Literature Research in Indonesia, Ecopsychology Perspective

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### Abstract

Indonesian literature as research object is able to be observed from some perspectives, such as philosophy, psychology, anthropology, and religious. On its way, nowadays there is transdisciplinary research. This article explained about literature research in Indonesia ecopsychology perspective. Ecopsychology is psychology and ecology interaction in understanding interaction between human and the environment. Based on author observation, ecopsychology researches which are related to literature, are (1) Love (2003); (2) Merrit (2012); (3) Ahmadi (2014; 2015a;2015b). Therefore, this article explained about literature research in ecopsychology perspective.

Keywords: literature, ecopsychology

### Introduction

Nowadays, research development in the world leads to transdisciplinary research. Recognized or not, birth of research which leads to transdisciplinary is caused by these factors (1) intellectual surfeit of researchers. All this time, monodisciplinary research tends to use blinder for seeing a problem; (2) monodisciplinary knowledge impasse solves problems which are included in complex contemporary context; and (3) integrative thought wave flow. That is the figure of human as *Homo esperans*, always miss and expect renewal for holistic life.

One of disciplinary disciplines is *ecopsychology*. The background of ecopsychology birth is damage and vandalism by human. As human who stay in earth, they may not ruin earth. An ecopsychologist, Winter (1996:296) called as “psychology for sustainable world”. Psychology which is very useful for human life in the future. This kind of psychology, in Rodes (2008) and Hafford (2014) opinion, is suitable for modern human therapy. Human have to interact well to the nature so that there is a nature balance. Therefore, there are ecopsychology carrying institutions, such as, European Journal of Ecopsychology (EJE) in Europe with Paul Steven (Bournemouth University, UK) as editor, in Akamai University

(Hawaii, USA) there are diploma program, master degree, doctoral for ecopsychology and also International Community for Ecopsychology (ICE) which discusses informal-formal problem about ecopsychology.

Indonesian literature as research object is able to be observed from some perspectives, such as philosophy, psychology, anthropology, and religious. Related to ecopsychology, Indonesia literature also can be observed through ecopsychology perspective with these reasons. First, in literature field, there is relationship between human and their interaction with environment. Second, literature as fiction work also offers world vision (vision de mundo) related to enlightenment for human life.

Ecopsychology researches which are related to literature, based on author observation, such as (1) Love (2003), observed literature (novel) which is written by Ernest Hemingway (*Old Man and the Sea*) and Herman Melville (*Moby Dick*). Love explained about that author understood the nature concept. That is why those both novels brought human struggle with nature (note: Love research is more ecocritism, eventhough, author still classifies in ecopsychology because ecocritism and ecopsychology are still related.); (2) Merrit (2012a) wrote about Hermes (Zeus and Maia's son). In Merrit's opinion, Hermes is a suitable figure for ecopsychology because he stayed in two worlds, God world and animal world, God world and nature world; (3) Ahmadi (2014) observed about natural proverb in China literature; Ahmadi (2015a) wrote about ecopsychology in literature and children movie and; Ahmadi (2015b) wrote about ecopsychology context folklore. One of ecopsychology and literature types is green literature. Pranoto (2014) mentioned that green literature is literature which is related to ecology. In Indonesia, that research still has not been famous yet like other literature researches. Ecopsychology in Indonesia literature also has not been appeared in Indonesia.

Ecopsychology is newly knowledge, like what Merrit explained (2012:xv) that ecopsychology is psychology which is related to articulation and attention toward emotion/perception in its interaction with nature naturally. Therefore, ecopsychology is new breakthrough in psychology and ecology.

The data source in this article is *Naga Bumi: Buddha, Pedang, dan Penyamun Terbang* by Senogumira Ajidarma published by Gramedia (2011 [975 pages]). This novel initially is serial which is published by *Harian Umum Suara Merdeka*, Semarang (12 March 2008-6 August 2009). This novel told about silat. Its narration style had 'similarity' with

*Musashi* by Eiji Yoshikawa (Japan writer). That novel is translated into Indonesian and published by Gramedia (2001).

Ecopsychologists view is contradictory with humanistic psychologist view. Fisher (2002:91) told that humanistic psychologists prioritised human as the center, important, beautiful, valuable, and even miraculous. Whereas, human is not the main character. That is why, nowadays is thought transition from humanistic to naturalistic. Human who is back to nature. Those ecopsychologists's thoughts, Merrit, Jordan, and Fisher finally fall into one core that ecopsychology is integrative research between psychology and ecology to observe human interaction with their environment.

## **Discussion**

### **Silat Steps Taken from Nature**

In silat, there are a lot of steps that are taken from nature. Those steps are got by human when they caught great moments from nature. Indeed, nature gives the best for human if human can think deeper and understand it. In silat or kungfu history does not detach from nature influence. Therefore, we have ever heard about Tiger Step, Eagle Step, Grasshopper Step, Snake Step, Thunderbolt Step, and Fog Ant Step. Also in *Nagabumi* novel, silat used nature term.

First, in *Asmara di Taanah Kamnuja* chapter, is told about a silat course named *Harimau Kencana*. This silat course is huge and dreaded by the enemies.

Kejayaan dan kegemilangan dalam dunia persilatan terenggam di tangan tiga kakak beradik, Harimau Putih, Harimau Hitam, dan Harimau Merah, yang mendapatkan warisan ilmu silat dari ayah mereka, Harimau Kencana (Gumira, 2011:13).

Those three people (Harimau Hitam, Harimau Putih, Harimau Merah) have silat knowledge which use tiger step, they scratch expertly, and pounce the enemy just like a hungry tiger. When those three people are combined to against enemies, their strength becomes bigger like tigers herd which have unpredictable strategy to against enemies. That three experts knowledge is in *Kitab Ilmu Silat Harimau* secret book.

Second, in *Buddha dan Dua Pedang* section is told about *Kitab Ilmu Silat Kelelawar*. That book takes knowledge from nature, about an animal named bat.

Sembari menghindari serangan dari tiga jurusan di atas kepala, aku teringat *Kitab Ilmu Silat Kelelawar dari dalam peti kotak kayu yang pernah kubaca. Aku membaca dan memahaminya, tetapi tidak pernah*



*kubayangkan Kitab Ilmu Silat Kelelawar bisa dikuasai manusia karena persyaratannya terlalu berat, antara lain bertapa menggantungkan diri dengan tubuh terbalik seperti kelelawar di atas pohon (Ajidarma, 2011:47)*

Nature teaches that bat is animal which is able to hang on tree branch. Therefore, silat people use it as ability to hang on tree branch.

Third, in silat is required sharp hearing. A warrior may not be weakened by enemy. They have to understand enemy's location and gesture. That is why there is silat knowledge which is inspired by ants.

*Kupejamkan mataku dan tidak menghentikan laju percepatanku karena kutancap Ilmu Mendengar Semut Berbisik di dalam Liang (Ajidarma, 2011:105).*

Pendekar Tanpa Nama uses ants knowledge to hear long distance enemy existence. Through that ants knowledge, he can understand enemy's location easily and also he can hide from enemy's observation easily.

Beside that, Senogumira Ajidarma often shows silat diction which is taken from nature, such as *Itulah sebabnya ilmu cicak tidak dapat menjadi pilihan (Ajidarma, 2011:80) Ilmu kami memang belum setinggi ilmu Naga Bawah Tanah yang seperti Dewa... (Ajidarma, 2011:106) jurus yang Aku telah menggunakan Jurus Seribu Naga Menyerbu Bersama (Ajidarma, 2011:238)Kitab Seribu Naga telah hilang...(Ajidarma, 2011:239. Jurus Impian Kupu-kupu ini sangat mengandalkan keberadaan kupu-kupu (Ajidarma, 2011:487)Ketika Impian Kupu-kupu ketika dihadapkan dengan Jurus Naga KembarTujuh adalah pertarungan kekaburan melawan kekaburan (Ajidarma, 2011:489).*

All of silat steps in this novel-are taken from nature. It seems from Lizard step, Dragon step, Butterfly step, and Seven Twins Dragon step. All of them are taken from nature.

### **Controlling Nature**

Good human is human who can be fusedd with nature. They become human who can feel the nature around them. There is deep silence in nature (Sutrisno, 2003:133), there is huge strength in nature, and there is softness in nature. All those nature elements actually tell spiritualism. Human can not against nature because nature is strong and huge. Human only can control it. Back to nature is basic characteristic of universe life.

*Tak kugunakan api di musim penghujan (Ajidarma, 2011:239)*

When it comes to against enemy, Pendekar Tanpa Nama use Fire step. But, he understands that actually that step will be fail to beat the enemy because there is strong wind. If he compels to use Fire step, it is useless.

## Conclusion

Based on what author explain before, it is concluded that Nagabumi II novel shows ecopsychology in related with (1) silat knowledge naming which is taken from nature and (2) controlling nature. Therefore, human relationship with nature in this context is tight. Nature gives inspiration in silat knowledge. This article is unostentatious, but it will offer new view related to literature research.

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## ABSTRACT

Wiwik, Retnoningsih (2015), Socio-Economic Impact of Traditional Crude Oil Mining to Traditional Mining Community in rural Districts Wonocolo Kedewan – Bojonegoro

Keywords : Socio-Economic Impact, Traditional Mining, Crude oil

Wonocolo village Kedewan-Bojonegoro districts have natural resources such as crude oil are abundant, this causes the oil is lifeblood of communities in subdistricts Kedewan-Bojonegoro, particularly rural communities Wonocolo. Mining is done traditionally by using simple tools, then the modified so that a higher economic value, this activity has been carried out by people Wonocolo since the Dutch government in Indonesia. The level of the Wonocolo community's economy is getting better, the existence of oil wells is a blessing that is so valuable to society Wonocolo. Nearly one hundred percent of the villagers work in the mining sector crude oil. Conditions barren wasteland is not very suitable for agriculture, there for mining is the main livelihood for the Wonocolo community, income mine used to meet daily needs. In term of employment, Wonocolo communities do not lack work, because many jobs offered such as penyidik, refiners, pengajok, penimbel, drivers, etc. Income derived from mining is much higher than the income from farming. The Existence of oil wells is not only a positive effect on people's lives Wonocolo but also the negative effect. One of the negative impacts of mining crude oil is a change in the behavior of the villagers Wonocolo, especially men. Some of the things that led to researchers interested in investigating the crude oil mining is how the effect or impact of traditional mining of crude oil to the socio-economic life mining community in Wonocolo. The focus of this research is : (1) How can the impact of traditional mining of crude oil to the socio-economic situation of rural communities Wonocolo, (2) How can I cope with the social impact?. This research is a descriptive qualitative approach, aiming to reveal the fact that there is a field with the focus on solving the problem. Based on field survey on location showed that the income of traditional mining community of crude oil has increased rapidly since using the term drill fault/cutting, since mid-2012. The happens because, first the existence of a system fault caused the number of wells drilled more, thus the amount of crude oil were successfully removed also more, second change in peluntur power of human energy into power mechanical used truck that has been modified, a system well in the mining so that each group member will still earn although not participate as a group in the labor force miners. But this does not offset the increase in revenue with knowledge of economic education, and therefore the effect to high consumption properties. It also led to the emergency of a variety of social ills, such as prostitution, adultery, gambling and drunkenness, prosperity owned expensive to be paid, simple and unpretentious lifestyle being abandoned. Therefore, the role government is needed to provide non-formal education to the mining community to avoid social ills which can be detrimental to all parties. Non-formal education is needed so that the public economy miners were able to manage the consumption.

## INTRODUCTION

Kedewan Wonocolo village districts have natural resources such as oil resources are abundant, this led to extraction of crude oil is source of life the community in the district Kedewan-Bojonegoro, particularly rural communities wonocolo. Mining is done traditionally by using simple tools to be converted in to goods that have higher use value, has been carried out by Wonocolo community since the Dutch government in Indonesia. Slowly the life of the community's economy improved Wonocolo. The existence of oil wells is a blessing that is so valuable to society Wonocolo. Nearly one hundred percent of

the Wonocolo community work in the mining crude oil sector. The condition causes the barren wasteland unsuitable for agriculture, therefore mining is the main occupation for the people Wonocolo. The entire daily needs satisfied from mine. From the condition of work, community wonocolo no shortage, because in the mining area many jobs offered. Such as driver, penyiduk, pengajok, peimbel, penyuling and so forth. income from mine higher than the income from farming. But the existence of oil wells is not only a positive effect, but also negative effect. One example of the negative impact of the crude oil mining is change in behavior Wonocolo rural community, especially men. Some important things that lead investigators to examine more interest in the traditional mining of crude oil is how influence or negative impact of traditional oil mining on people's lives Wonocolo.

### **The Focus of Research**

Based on the above, the focus of this research is :

1. How socio-economic impact the traditional mining of the rural population wonocolo?
2. How to cope with the social impact?

### **Study of Theory**

#### **1. Definition of Mining.**

Definition according to Jacky miner mining (Mining Theory I, (online) [www.http. / Theory-mining-i.html](http://www.http. / Theory-mining-i.html)) Mining is an activity of excavation, demolition and transport of mineral deposits contained in an area based on several phases of activity effectively and economically by using mechanical equipment as well as some of the equipment in accordance with current technological developments. Mining has several characteristics, namely non-renewable (non-renewable), the relative risk is higher and enterprise have an impact both physical and social environment that is relatively higher than most other commodity exploitation. Because of its non-renewable mining entrepreneur is always looking for proven reserves (proven reserves) new. Similarly undertaken by communities

in the district Kedewan lantung miners, the miners are always looking for new land to be mined.

By type of management, mining activities consist of two kinds of mining activities carried out by business entities appointed directly by the state through the Mining Authority (KP) and the Contract of Work (COW), and mining was done by people manually. Mining activities by business entities is usually done by using more advanced technology so that the expected results more with a more efficient allocation of time, while the local mining is mining activities using simple tools.

According to Law No. 11 of 1967, the definition of artisanal mining is a mining business materials - minerals of all categories a, b and c as referred to in article 3, paragraph (1) carried out by local people on a small scale or in a joint effort with tools- simple tool for their own livelihood. Some understanding of the above can be concluded that mining is an activity demolition, excavation and transportation of natural resources for the sake of prosperity, which is derived from the mining industry enterprises as well as local people. This is in line with that done by traditional crude oil mining community in the village Wonocolo Kedewan District of Bojonegoro.

## **2. Social Economic Impact**

Traditional crude oil mining is an activity of high cost , high risk and high So to solve this problem is needed social capital and human capital good . As was the case in the village of the District Kedewan Wonocolo social capital woke up so well that people were able to answer all the difficulties in the mine . In the dictionary of the Indonesian , the word social means everything pertaining to society ( KBBI , 1996: 958 ) , whereas in the concept of sociology , human beings often referred to as social beings , which means that man can not live normal Tanoa help another human being around , thus social word often interpreted as matters relating to the community.

## **Empirical Study**

Eriyati and Rita Yani Iyan, entitled: Economic and Environmental Impact of Illegal Gold Mining in the village of Lado Garden District of Kuantan District Singingi. In this study took a sample of 45 gold miners, with sampling

cluster sampling technique. The results showed that the overall average income of the workers amounting to Rp 2.881.045.33, -. The economic impact of illegal gold miners shows the amount of earned income for the community so that they continue to work as illegal gold miners, even if the terms of the law is an illegal occupation. The environmental impact caused by illegal gold mining is becoming polluted river water singing and people are starting to difficulties in its use. The next related research is Muchamad Ridwan, August 13, 2012, Yang Titled: Community-Based Economic Empowerment Group. This study aims to synthetic associated with efforts to construct an alternative model of economic empowerment of the poor coastal communities through the optimization of the group's role as the basis of economic development towards improving welfare. The results showed that the alternative models that can be synthesized assume an important role of the group as a strategic base in the effective implementation of the program, besides the influence of internal and external factors, which is strongly associated with quality resources and local knowledge of each coastal areas, where the coastal areas one with the other tends differences.

### **E. Research Objectives**

This study aims to determine how the socio-economic impacts for the traditional mining of crude oil to the mining community in the village Wonocolo Kedewan District of Bojonegoro.

## **RESEARCH METHODS**

### **A. Type of research**

This study includes a descriptive study with qualitative approach. Which aims to reveal the fact that there is a field with the focus on solving the problem at hand.

### **B. Research Focus**

The focus of this research is How the socio-economic impact the traditional oil mining on communities Wonocolo village, which includes changes in the value of social and economic levels of society as well as how to cope with these impacts, what action needs to be done by the local government.

## **Research Sites**

This research was conducted in the village Wonocolo Kedewan District of Bojonegoro. Bojonegoro administratively divided into 27 districts with 419 villages and 11 villages with a total area is 230 706 hectares, consisting of 40.15% is state forest area, 32.58% of paddy fields which are mostly located along the Bengawan Solo River flow , 22, 42% of the dry land and the remaining 4.85% is plantation and others. Bojonegoro part of East Java province with a distance of 110 km from the provincial capital and the adjacent province of Central Java. Administrative boundaries Bojonegoro is: North side adjacent to Tuban, East Lamongan Regency, the southern border with Madison County, Nganjuk and Jombang and the west bordering Ngawi and Blora (Central Java), and located at the position 6<sup>0</sup>59 'until 7<sup>0</sup>37' south latitude and 111<sup>0</sup>25 'until 112<sup>0</sup>09' east longitude.

## **C. Sources and Data Collection**

The main data sources in penelittian this is a man who acted as key informants (key informant) were determined based on the criteria specified (purposive sampling) knowingly and dilengkapai with secondary data obtained from direct observation, observation and documents related to the focus of research , Data collection was done by interview, observation and documentation. This research through three stages: the initial stage include general observations and determine the focus and subject of study, the second phase of data collection and analysis and the third phase of discussion and finalization.

## **D. Research Instruments.**

Instrument in this study was supported by the researchers themselves and interview guidelines, observation guidelines, recorder and stationery.

## **E. Data Analysis Methods**

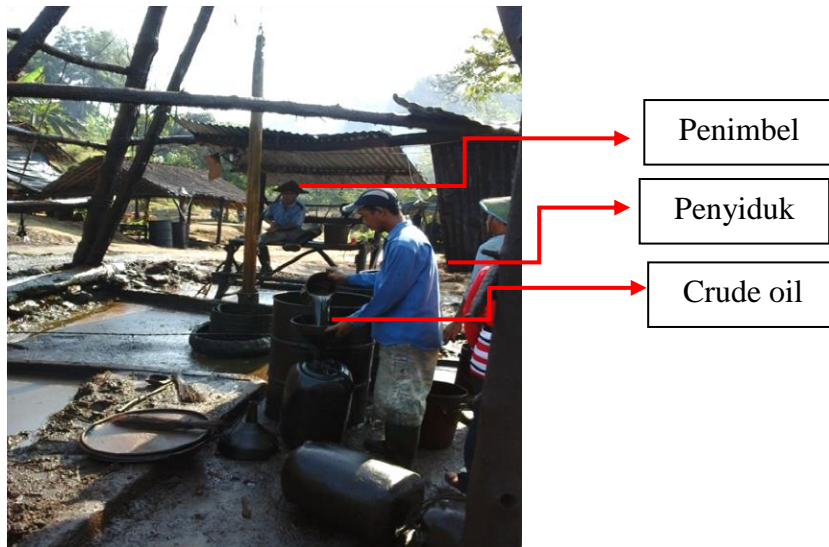
In this study uses data analysis techniques Milles and Hubberment using three grooves activities going on simultaneously: data reduction, data presentation, drawing conclusions / verification. (Miles & Huberman, 1992: 16)

## **DISCUSSION**

Wonocolo village is a village located on the western outskirts of Kedewan districts bordering Central Java Province and east bordering Tuban. Wonocolo village is above the limestone mountains and in the middle of teak forests, arid land and has a temperature of hot air as the main characteristic. Wonocolo village is a village that has almost no agricultural land, especially paddy, rice area in the village Wonocolo only  $\pm 4$  ha entire village area is reserved for residential, bit fields and teak forests. Hilly land contour and the condition of the road leading to difficulties in reaching the village of Wonocolo. Crude oil extraction has been carried out by the villagers Wonocolo since the Dutch government in power in Indonesia with simple means and technologies. Due to unfavorable soil conditions for use as farmland, then mining is one of the main livelihood for rural communities Wonocolo.

Mining activities are carried out in the village Wonocolo and Hargomulyo can be categorized in economic activity, which in reality is a "social safety net" for community groups under that replaces the lack of basic services that should be provided by the government. At first the people in these activities are in the last stages of life (survival) and finally makes the activity lived as the main activity to enter into a more settled life and make mining as a profession and able to support his family relatively adequate. This is evident from a shift in the way mining by mining community, where in the 1960 they mine just enough just to survive, and then the pattern shifted into a profession to earn as much as possible, in order to achieve the standard of living better, and the current average production of each of the wells reaches 10 lantung barrel / day or about 2,000 liters / day.





Socio-Economic Impact of the Mining and Crude Oil Against Traditional Wonocolo villagers are as follows:

#### 1. The existence of Changes in Income

Traditional oil mining has been carried out by villagers Wonocolo since decades ago when the Dutch government is still in power in Indonesia and keep it running until today. Mining of crude oil is one of the main livelihood for the villagers Wonocolo. Oil mining traditionally performed by public Wonocolo has undergone several developments, ranging from mining oil in old wells former Dutch heritage by using human power as a laxative to mine by drilling new oil wells in addition to the old well which is called the drill fault / cutting and uses used truck engine power as a substitute for laxative power. The phenomenon is more widespread fracturing drill precisely since the middle of 2012 caused the number of oil wells increased drastically and offset by the increase in the amount of income earned miners. The phenomenon of fault or cutting drill has a positive influence on the increase in revenue which the miners during decades of living in simplicity.

Since mid-year 2012 revenue of crude oil mining community has increased very rapidly. This happens because, first the system drill fault / cutting causes the number of points wells mined more, because of the number of wells more then the amount of crude oil were successfully removed also more, a second force of change laxative of human power to the engine power used truck that has been modified, a third system of wool in the mine so that

each group member will keep earning opportunity although not as labor in a group of miners.

Associated with fracture or cutting drill, to drill meakukan fault or cutting requires high capital therefore wool system is a strategy to raise capital, it is like the capital of the cooperative. the difference between the cooperative wool is wool amount equal to all members, and only one kind, while the cooperative is no principal, mandatory and voluntary, as well as the wool is only done at the beginning of the drilling alone.

Based on the interview with one respondent data showed that before 2012 precisely in the era of Fatah power mbah headman, miners earn an average of 40 liters of crude oil, the amount divided by two each miner memperoleh 20 liters at a price of Rp 3,600 per liter. While the era of 2012 miners higher earnings as well as the type of work offered is also more, causes high income is not only influenced by the amount of crude oil were successfully removed, but also because of the advantages of wool is done miners as a group member.

Some types of work contained in any oil wells shown in Table 3.1 as follows:

Table 3.1 Type of Work on crude oil extraction

<b>Various Job</b>	<b>Wage/vat ( Rp)</b>	<b>Total Crude oil /day</b>	<b>Total Wage (Rp)</b>
Driver (2 People)	50.000,-	10	500.000,-
Penyiduk (2 people)	25.000,-	10	250.000,-
Penimbel (2 people)	25.000,-	10	250.000,-
Pengajok	50.000,-	2	100.000,-

Revenues above is not coupled with the results of the division of wool, where the average income from wool Rp 450,000 / week, thus the total average income in one month shown in table 3.2 below:

<b>Various Job</b>	<b>Wage/day (Rp)</b>	<b>Wage/Month (Rp)</b>	<b>Wul income (Rp)</b>	<b>Total/Month (Rp)</b>
Driver	250.000,-	7.500.000,-	1.800.000,-	9.300.000,-

Penyiduk	125.000,-	3.750.000,-	1.800.000,-	5.550.000,-
Penimbel	125.000,-	3.750.000,-	1.800.000,-	5.550.000,-
Pengajok	100.000,-	3.750.000,-	1.800.000,-	4.500.000,-

Table 3.2. Revenue Miners/Month

According to the table 3.2 above it appears that people's income has exceeded the minimum wage miners Bojonegoro, namely Rp 1.310.000.- therefore, in terms of people's income in the village miners Wonocolo District of Kedewan is above the minimum income Bojopnegoro Regency society

## 2. Changes in Social Value

Increased Revenue mining community led to an increase in consumption and because it is not supported by educational knowledge economy has led to changes in the pattern of consumption of crude oil mining community. Revenue earned from the mine used more to buy consumer goods from the savings or investments and adopting extravagant lifestyle.

On the other hand the increase in revenue has also influenced the shift of social values and moral community of miners. Changes in income affect lifestyles and behavior miners, prosperity achieved must be paid by the inclusion of social ills. Gambling, drunkenness, nyawer, infidelity and prostitution has penetrated among the mining community. The simplicity of rural communities have been polluted by social ills. This happens because of the lack of knowledge about the economics of education, expectations are too high for oil wells so that miners find it easy to make money and therefore income earned today will be spent today, for tomorrow will certainly earn more from oil wells.

## Conclusion

Traditional oil extraction is done oleh villagers Wonocolo Kedewan Bojonegoro districts have been conducted since the Dutch government in power in Indonesia and become the main livelihood, mining is economically able to improve the lives of miners to meet all needs, both basic needs and other needs. However, the increase in income is not balanced with prudence in so consume

more revenue earned is used to buy consumer goods rather than save or diinvestasikan. Selain itu penadapatan increase has also affected the lifestyle of the miners, social ills such as gambling, mabuk- drunkenness, nyawer, infidelity and prostitution has penetrated among the mining community.

### **Suggestions**

Based on the above, the phenomenon is needed Bojonegoro government intervention to help provide insight and understanding to the mining community to be life-saving and consume more wisely.

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#### GLOSSARY

Penyiduk	: The Person in charge taking the crude oil from kuen to put the barrel
Penimbel	: The Person in charge of straightening pipe bucket from the well to fall In with the right kuen.
Pengajok	: The person in charge of delivering the crde oil to pawonan
Kuen	: Crude oil tanks
Pawonan	: the burning of crude oil
Wul	: Capital raising through membership dues
Peluntur	: People who work as pull mine out of the well.

## ***Utilizing Business Model Canvas (BMC) to Develop Innovative Analysis in Culinary Business***

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### **ABSTRACT**

*This research aims to identify outline scheme of culinary business, the most emerging business in Indonesia, using Business Model Canvas (BMC) approach. Most Indonesian prefers rice, as main dish, and spicy food. Nowadays, culinary business trend is influenced by Japanese and Korean food which has unique shape, colorful, healthy and easy to eat. This business is an innovative development of existing business "Sambal DDI" into fusion sushi with traditional touch of sambal, spicy condiment using chili peppers. There are nine factors that have to be observed based on the established BMC. First, business focuses on offering variety of spicy main dish (onigiri) as an elaboration of the existing spicy side dish (sambal). Second, the customer segmentation were broaden to people who like spicy food and following the current trend. Third, the relationship toward customer can be increased by adding bonus and free delivery for certain area and certain amount of purchase. Fourth, the new product will be distributed through direct selling. Fifth, key resources of this business are the raw material, and product package with good quality and affordable price. Sixth, from process side, main activity should be added with activities to support the development such as producing main dish and establishing the requirement of franchising. Seventh, partnership is important as a drive for improving company performance, especially partnership with such as supplier for raw material and product package, and producer of food stall. Eighth, main incomes of this business are from sales of main dish (onigiri), sales of side dish (sambal) and franchising fee. Ninth, necessary costs are promotion cost, operational cost, production cost and labor cost. By considering revenue stream and cost structure to analyzes financial feasibility of the development, proper decision may be made from this business. Therefore, this business may be categorized into proper and operable.*

**Keywords:** *Business Model Canvas, Business Plan, Company Strategy, Financial Feasibility*

## INDUSTRIAL AREA DEVELOPMENT IN EAST JAVA

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### ABSTRACT

In developing countries, including Indonesia, the industrial sector is the sector that gets the priority to be developed. The development of the industrial sector is considered to bring prosperity and is a motor for economic development. In addition to increasing the production of goods, the existence of industrialization can create jobs to tackle the problem of unemployment. The location chosen for the study was developed into an industrial area is Jombang, Gresik, Malang, and Bangkalan.

The supporting factors the development of industrial zones in Jombang, Gresik, Malang, and Bangkalan are: (1) the land is still a lot, (2) community around the area can receive, (3) has the access road, (4) the existence of a network electricity. The obstacle factors are: (1) the land acquisition has not been done, (2) the lack of socialization to the residents, (3) a narrow access roads.

The positive impact for the development of industrial areas, among others: (1) the existence of a new venture for instance, boarding houses, trading of basic needs, (2) improvement of rural infrastructure, (3) the opening of new jobs. The negative impact that may arise, among others: (1) a residential area turned into an industrial area, (2) the noise, traffic congestion and air pollution, (3) narrowing of farmland.

*Keywords: development, industrial area, supporting factors, obstacle factors, positive impact, negative impact.*

### I. INTRODUCTION

The development of integrated industrial park is one of the facilities and infrastructure to support the success of economic development, especially in the industrial sector in order to accelerate the growth of industry in the area. Terminology industrial zone in Indonesia is often referred to as industrial estate while in some countries used the term industrial park.

There are several factors that must be considered in the development of industrial areas, among other physical factors, human and economic and government policy factors. Physical factors include land, access to raw materials, and man power. While the human and economic factors include the provision of labor, transport, and market share. Government policy factors include ease of licensing, incentives, and the guarantee of legal protection.

In East Java, industrial area which is still there and active, as much as 6 region with a total area of  $\pm 2,220$  Ha, namely: a) Surabaya Industrial Estate Rungkut (SIER); b) Sidoarjo Industrial Estate Berbek (SIEB); c) Pasuruan Industrial Estate Rembang (PIER); d) Maspion Industrial Estate (MIE); e) Ngoro Industrial Park (NIP); and f) Industrial Estate Gresik (KIG).

Meanwhile the industrial area to be developed that are scattered in the district in East Java with an area of  $5662.62 \pm$  Ha, namely: a) Industrial Zone Ploso in Jombang area of 800 hectares;

b) Tuban Industrial Zone covering an area of 227 hectares; c) Agro-industry in North Gresik area of 300 hectares; d) Salt Lake Gresik Industrial Estate area of 285 hectares; e) Madura Industrial Zone Industrial Seaport City (MISI) covering an area of 800 hectares; f) Lamongan Industrial Zone covering an area of 400 hectares; g) Java Integrated Industrial Port Industrial Estate (JIPE) covering an area of 1761.4 hectares; h) Kampe Industrial Estate Industrial Estate Banyuwangi (KIEB) covering an area of 999.22 hectares; and i) Industrial Estate in Malang area of 90 hectares.

The addition of this location is attractive because it can be a buffer for the surrounding area. For example, Kampe Industrial Estate Industrial Estate Banyuwangi will be rested for the horseshoe area, ranging from Probolinggo to Jember. Development in the city of Malang will be able to be a buffer in southern regions like Pasuruan, Blitar, Tulungagung, and Trenggalek.

## **II. Basic Concepts Industrial Area**

Terminology industrial zone in accordance with Presidential Decree 53 of 1989, and has been improved with Presidential Decree 41 of 1996 on the Industrial Zone, is a region where industrial activity center is equipped with facilities and infrastructure are developed and managed by the Company of Industrial Estate that Industrial Area has a business license. Terminology Industrial Zone in Indonesia is often referred to as Industrial Estate while in some countries used the term Industrial Park.

Industrial Development Zone (Industrial Estate) is one of the tools for the development of industrial activities are considered to be effective, especially in terms of: a) make it easy for businesses to acquire plots industry ready to wake up, b) provide legal certainty of the business location, c) troubleshooting spatial and simultaneously overcome the problems of environmental impact. Through the development of industrial zones for investors plot industrial users will get the location of industrial activities that are already well where there are several benefits such as assistance permitting process, the availability of a complete infrastructure, security and certainty of a place of business in accordance with the Spatial Plan Area.

## **III. Important Factors In Industrial Area Development**

In view Radjiman (1998), provide recommendations on a variety of factors to consider when trying to determine the location of industries, namely: physical factors, human and economic.



- a. Physical factors, consisting of: 1) land in lowland broad and flat, free from flood, warehousing, 2) raw materials available, 3) power source.
- b. Human and economic factors, consisting of: 1) the provision of manpower both in quantity and quality, 2) a good transport system, 3) the available market both locally and overseas, 4) the influence of the government in determining the location of industry.

Similar views were conveyed Soeminta (in Permadi, 1991) there are four main things that need to be considered in order to determine the location of industrial zones, namely: a) economic considerations with the maximum benefit, b) historical location, such as customary land, inherited land, vacant land, c) location determined by the government, d) the type of footloose industries, which are located in any place.

#### **IV. Technical Standard of Industrial Area Planning**

Besides location criteria and needs for infrastructure, industrial activities also have to meet certain technical standards, which will also affect the allocation of space earmarked for its activities. Understanding of the technical standards needed both industrial area in order to choose the right location for the site plan industrial areas as well as in assessing whether industrial estate development plan proposed by the investor can meet various technical requirements, so as to avoid the technical and environmental problems. Relative to the industrial area a few technical requirements will be described below.

##### **1. Land requirements**

Minimal industrial estate development carried out on an area of 20 hectares. It is based on the calculation of the efficiency of land use at the expense of development and can provide added value to developers.

##### **2. Land use patterns**

In accordance with the Decree of the Minister of Industry and Trade No. 50/1997 concerning the technical standards the industrial area, there are two components of land use are regulated, namely: a) the total area of industrial plots a maximum of 70% of the total area, b) the area of green open space minimum 10% of the total area.

### **3. Waste water treatment plant**

If the types of industries which will be located in the industrial area potentially wastewater, then it must be equipped with an integrated WWTP typically cultivate four key parameters, namely:

a) BOD: 400-600 mg / l, b) COD: 600-800 mg / l, c) TSS: 400-600 mg / l, d) pH: 4-10 mg / l

### **4. The size of the industrial plots**

In the application of industrial plots there are several things to consider, namely: a) Comparison of the width (L): P long strived 2: 3 or 1: 2, b) Width minimal plot outside the provisions Line Border Building (GSB) left and right are multiples of 18 m.

### **5. Placement Exit and Entrance plots**

Industrial activities in general to transport raw materials / auxiliary or output using heavy vehicles, so as to avoid interference with circulation between the lot should placement doorway adjacent plots placed in positions far apart.

### **6. Provision of parking place and loading area**

In planning the layout of the factory and site planning industrial areas need to pay attention to the following: a) the provision of vehicle parking non-bus employees are prepared in a plot factories, b) the activities of loading and unloading of goods must be done in the area of plant plot.

## **V. RESEARCH METHODS**

Stages in the study include preparation, data collection, and data analysis, which resulted in a recommendation for the development of industrial estates. Preparation stage is to formulate the goals, objectives, and outcomes. Stages of primary and secondary data collection. Primary data were obtained from the data in the field will be developed industrial area in East Java, which includes the industrial area Jombang, Gresik, Bangkalan, and Malang. Secondary data sourced from literature and related agencies. Stages of data analysis with comparative method. Stages of the final report, a transformation that is poured into a recommendation of the areas that will be developed into an industrial area.

## VI. RESULTS AND DISCUSSION

### A. Industrial Area Development in Jombang

Jombang consists of 21 districts, which includes 306 villages and 4 village. Advancement of industry in Jombang supported by ease of transport, as well as the strategic location of Jombang, which is the triangle area of Surabaya-Mojokerto-Pasuruan.

Major industry in Jombang that penetrated overseas markets including PT. Pei Hai; PT Japfa Comfeed; PT Usmany Beautiful; PT. Sampoerna; PT Cheil Jedang Indonesia; PT. Cheil Jedang Superfeed; PT. Mentari International; and PT. Seng Fong Moulding Perkasa.

#### a. Sub-district Ploso as Industrial Area which will be developed in Jombang

Industrial area which will be developed in Ploso, covering an area of 800 hectares, which consists of five villages, namely: Pager Tanjung, Jati Gedong, Ploso, Jati Banjar, and Pandanblele. When compared with the six existing industrial area in East Java, Ploso Industrial area in Jombang are wider.

Some considerations districts Ploso used as an industrial area are: a) the industry is directed as an industry with large scale, b) the development of industrial zones into account ecological aspects, c) the development of industrial zones supported by the green line, d) the industry developed have relevance production process starting from upstream and downstream industries.

#### b. The supporting factors:

- 1) The socio-cultural factors, among others: a) the need for socialization of the competent authorities to citizens. b) the process of changing a profit to the owners of land, c) overcoming the realtor who appeared on the field, d) the utilization of the labor community of the five villages, and e) maintaining cultural industrialization.
2. The infrastructure factors, among others: a) the road is available that connects the Mojokerto, Nganjuk, and Bojonegoro, b) the existing industrial area, c) the environment in the sub-district Ploso was paved, d) the availability of the carrying capacity of Sumo freeway, e) there is a stream that becomes a waste disposal after going through the process of managing in advance, such as Marmoyo river and Ngotok river, f) water from taps, g) open drainage, g) electrical network Medium Voltage Air Channel, and h) system road transport were mostly in good condition.

**c. The obstacle factors:**

1) aspect of land acquisition, until now the process of land acquisition has not done everything, just in Ploso about 10 hectares, and Jati Gedong about 15 hectares, 2) socialization that has not been done, 3) most of the way into the area area is very narrow and damaged, 4) road linking of Jombang towards Lamongan which is the main access in the district have not received attention Ploso, 5) the construction of a bridge connecting the Brantas river Jombang and Lamongan has not been done.

**d. The positive impact:**

1) The land use of rainfed into the industry, the utilization of land is more optimal, 2) work opportunities for residents around the area of industry, 3) acceleration of development, such as the improvement of roads and bridges in the villages, including the development of education and health facilities, 4) the growth of new businesses of the community, such as opening a rooming house, restaurant, and shops, 5) the amount of facilities and infrastructure are more and more, 6) increase in incomes.

**e. The negative impact:**

1) Changes in land use from agriculture to industry, resulting in a narrowing of agricultural land in five villages, 2) the emergence of some environmental issues such as noise, the reduction in open space, traffic congestion, and increased levels of air pollution, 3) changes in settlement patterns new entrants to the labor force, 4) changing people's behavior patterns, 5) social inequality and social conflict.

**B. Industrial Area Development in Gresik**

Gresik is one district that industry growth quite rapidly with an area of 1191.25 km<sup>2</sup> and is divided into 18 sub-districts and consists of 330 villages and 26 urban villages.

Gresik is known as one of the major industrial areas in East Java. Some industries in Gresik, among others Semen Gresik, Petro Kimia Gresik, Nippon Paint, BHS-TEX, Industry Plywood and Maspion. Gresik also a producer of fisheries, both marine fisheries, as well as ponds.

**a. Sub-district Manyar as Industrial Area which will be developed in Gresik**

Manyar is one of the sub-districts in Gresik. Geographically most of its territory is in the form of pond because of its position close to the beach. As the development of the region era now beginning overgrown with a variety of small and medium industries to the national and international scale.

In 2013 PT. AKR Corporindo Tbk. in cooperation with PT. Pelindo III develop an integrated industrial zones with ports in Manyar, named Java Integrated Industrial and Port Estate (JIPE). The industrial area will be equipped with access to energy, railways, roads. JIPE equipped with a deep sea port, and is expected to become an important gateway import export East Java.

**b. The supporting factors:**

1. The social and culture factors, the development of industrial zones can be accepted by society. But there are some things that need to be considered, namely: a) socialization of officials of the district government to the public, b) the process of changing a profit to the owners of land, c) overcoming the realtor who appeared in court, d) give priority to local residents to be used as labor in the industry , e) industrialization is expected to maintain the local culture.
2. The infrastructur factors, from the results of the survey can be described as follows: a) road infrastructure linking the industrial area has been good enough, b) Surabaya-Gresik freeway length of 20 km was developed further with the development of the freeway that connects Manyar to JIPE along 6.5 km, c) the development of railway lines as a supporting industry, d) port of Gresik is located adjacent to downtown Gresik, e) drainage network made of cement, f) the availability of electricity from the power plant.

**c. The obstacle factors:**

1. Aspects of land acquisition is relatively expensive, which is Rp 3.6 million per square meter and can even reach Rp 4.8 million per square meter, whereas previously only around Rp 1.5 million per square meter.
2. The socialization aspect that has not been done to the people who were targeted industrial development.

**d. The positive impact:**

1. The use of land, an area targeted industrial development is largely rain-fed land and ponds, so the more productive land use.
2. The level of household income increasing by opening boarding houses, restaurant, and shops.
3. The opening of new jobs
4. Accelerated development, including improvement of roads, bridges, the development of educational facilities, health, and others.

**e. The negative impact:**

1. Refinement of agricultural land and farms in sub-district Manyar.
2. The emergence of some environmental issues such as noise, the less open space, traffic congestion, and increased levels of air pollution.
3. Social inequality and social conflict.

**C. Industrial Area Development in Malang**

Malang is one area that is East Java which has a unique pattern of industrial growth, which largely supported by small and micro industrial sector. Some manufacturing industries that already exist today include: a) the tobacco industry, b) textile and garment industry, c) fighter aircraft armament industry. Small industries and micro in Malang, among others: a) industrial tempe and tempe crisps, b) food and beverage industry, c) crafts industry shirts Arema, d) craft industry pillowcases decorations, e) industrial rattan, f) industrial furniture, g) Malangan mask craft industry, h) industrial ceramics and pottery.

**a. Sub-district Sukun and sub-district Kedungkandang as Industrial Area which will be developed in Malang**

Industrial area which will be developed in the city of Malang includes two regions, namely Bandulan Barat villages in the sub-districts Sukun and Arjowinangun villages in sub-districts Kedungkandang.

Bandulan Barat is one area which is fast enough in the development of the industry, as seen many industrial plants were built in the area. The second area is Arjowinangun is one of the border

area between the city of Malang. In Bandulan Barat has built many industrial plants, so the available land is not too much.

The second industrial area is Arjowinangun at sub-districts Kedungkandang. Arjowinangun currently facing regional development of industrial areas, this can be seen from the development of an industrial area with the opening of new land for development of industrial zones.

**b. The supporting factors:**

1. The social and culture factors, society as a whole in both districts can receive industry development plan. But there are important notes, among others: a) the importance of socialization thorough authorized officials to citizens in order to avoid conflicts of interest between the residents and the developer of the industrial area, b) the process of changing a profit to the owners of land in an open, transparent, and accountable, c) the utilization of local residents to be workers in the industrial area, d) industrialization is expected to provide benefits to the surrounding community.
2. The infrastructure factors, can be described as follows: a) the access road to the distribution of industrial products is quite good, b) the existing industrial area, c) the existing drainage, e) the electricity network, f) transportation system in good shape.

**c. The obstacle factors:**

- 1) aspects of land acquisition to date has not done well, especially in the West Bandulan Arjowinangun and adjacent to settlements, 2) the lack of socialization to the public on industrial development, 3) aspect partially damaged roads and narrow.

**d. The positive impact:**

- 1) land use targeted industrial development is largely rain-fed. So as to become industrial areas, the land use is more optimal and more productive, 2) opening new jobs for the local community, 3) acceleration of development, including the improvement of regional infrastructure, development of education, health, etc., 4) the growth of new ventures from the community local by opening boarding houses, restaurant, and shops.

**e. The negative impact:**

1) changes in land use, resulting in a narrowing of agricultural land in the region Bandulan Barat and Arjowinangun, 2) timbulnya some environmental problems, such as noise, the less open space, traffic congestion, and increased levels of air pollution, 3) the emergence of unemployed workers agriculture, 4) social inequality and social conflict, 5) changes in patterns of behavior.

**D. Industrial Area Development in Bangkalan**

Bangkalan is one area in East Java province which is adjacent to the city of Surabaya. The potential of Bangkalan dominated by small industry and crafts between meubelair, batik, ceramic, tile, seafood and others.

**a. Sub-district Socah as Industrial Area which will be developed in Bangkalan**

Dakiring village is an area that will be developed into an industrial area in Bangkalan. Dakiring village is a village located in the sub-district Socah, with an area of  $\pm$  450 H consisting of agricultural land and ponds. Dakiring village if developed into one of the industrial areas in Madura is possible. Seen entrance to the village is already quite good.

**b. The supporting factors:**

1. The social and culture factors, interviews with village heads and community leaders Dakiring stated as follows: a) the process of changing a profit to the owners of the land, b) overcoming many brokers who typically arise when the process of land acquisition for the citizens, c) there should be no intimidation or a threat if there are people who refuse or do not sell his land, d) use of community leaders in the approach to the citizens, e) the use of local villagers as labor.

2. The infrastructure factors, can be described as follows: a) the road is already available to the access to the Kamal port, b) the Suramadu bridge and Kama harbor 1, c) direct clean water taken from groundwater, d) there is no drainage, e) entire villages have affordable electricity, f) transportation system of roads that connect directly to the Kamal port access and the Suramadu bridge.



**c. The obstacle factors:**

1) The socialization aspect is absolutely necessary in order when it comes to the stage of realization there is no conflict with the surrounding community, 2) aspects of land acquisition has not been done, it is because of the lack of socialization of the local government, 3) aspects of the village road Dakiring itself is still in poor condition with the condition narrow and damaged.

**d. The positive impact:**

1) use of land in the village Dakiring districts Socah is largely rain-fed, the development of industrial zones economically it would be optimal, 2) opportunities recruitment of labor to reduce unemployment, 3) acceleration of development, including the development of infrastructure in the village, the construction of educational facilities, health even the economic field, 4) the level of income of the population increased by opening boarding houses, restaurant, and shops.

**e. The negative impact:**

1) changes in land use, from residential areas is now being transformed into an industrial area, 2) the emergence of some environmental problems, such as noise, the less open space, traffic congestion, and increased levels of air pollution, 3) narrowing of agricultural land, 4) changes the pattern of settlement for newcomers, 5) social inequality and social conflict

**VII. Conclusion**

Based on the results of the study of the development of industrial area in Jombang, Gresik, Malang, and Bangkalan can be summarized:

1. The several factors to be considered in the development of industrial area are: physical factors, human and economic, and government policy factors.
2. The supporting factors of the industrial area development:
  - a. A lot of land and in the form of rain-fed land.
  - b. The surrounding community at large can receive.
  - c. Already the road so as to provide convenience in terms of the distribution of goods.
  - d. The presence of the electric network (Medium Voltage Air Channel).

3. The obstacle factors:
  - a. Most of the land acquisition has not been done.
  - b. The lack of socialization to the residents.
  - c. The access road is quite good but narrow.
4. The positive impact for the development of industrial areas are:
  - a. The growth of economic sectors of society, including opening boarding houses, restaurant, and shops.
  - b. The new jobs can reduce unemployment.
  - c. Acceleration of development in the villages included in the construction of road infrastructure, education, health, and others.
5. The negative impact of the development of industrial areas:
  - a. Residential areas and agriculture is being transformed into an industrial area.
  - b. The environmental disturbances such as noise, the reduction in open space, traffic congestion, and air pollution.
  - c. Narrowing of agricultural land.
  - d. The emergence of a new settlement for newcomers.
  - e. The emergence of social inequality impact on the conflict with the local community.

### **VIII. Recommendation**

Recommendations can be submitted relating to the study of the development of industrial area in Jombang, Gresik, Malang, and Bangkalan are:

1. Socialization can be initiated with religious and community leaders, both formal and non-formal to minimize conflicts in society.
2. Development of industrial areas are designed to absorb of labor.
3. Settling the access roads, water supply, drainage, electricity, and transportation.
4. The developed industrial area should also set up a buffer zone to be able to accelerate progress in other areas.

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# Trends and Challenges of Integrated Mentoring Support for Novice Teachers' Professionalism: A Case Study of a "Lesson Study" Program in an Indonesian Secondary School

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## ABSTRACT

The Indonesian government has launched many teacher professional development programs, including "Lesson Study" teaching observation programs, in many secondary schools. The "Lesson Study" program has a significant role in enhancing teachers' professionalism. This program has been identified as a part of clinical supervision models of mentoring. However, the "Lesson Study" program is likely to provide the same type of support for both in-service teachers and novice teachers as they participate in the same program. The same support may not be ideal for novice teachers as it may distract them. Consequently, novice teachers may struggle in their first teaching phase. This study investigated the impacts of integrated mentoring support in "Lesson Study" teaching observation practices in reinforcing novice teachers' professionalism. Mentoring is a process of knowledge and skills transference with professional and personal support from the experienced to less experienced teachers and can lead to successful learning in novice teachers' professional development. This study specifically focused on a case study in the "Sekolah Permata Hati" (a secondary school) in Indonesia. This study also examined the trends and challenges emerged in the program. The preliminary finding showed that the mentoring support brought positive impacts on the novice teachers' professionalism. Particularly, the teachers noted three strengths of the modified teaching observation, such as: effectiveness of planning and preparation, manageable observation process and productive reflections. Nevertheless, they stated that a successful "lesson study" would be difficult to be achieved without the support due to the problem of sustainability, problems related to reflective practice and difficulties in time management.

**Key Words:** *Lesson Study, Mentoring Program, Mentor, And Mentee.*

## 1. Introduction

### 1.1. Background of the Study

The Indonesian government has launched many teacher professional development programs, such as: Lesson Study program, in-service teacher training, Subject Teacher Forum or *Musyawah Guru Mata Pelajaran* (MGMP) and many other professionalism programs. To upgrade novice teachers' quality, the government has also reinforced the implementation a mentoring program in many educational institutions. The eminence of the mentoring program has been acknowledged in the Indonesian laws: The law mandate No. 14/ 2009 about *widyaswara* that refers to senior teachers' responsibility to mentor their juniors; and Law No. 74 / 2008, refers to mentoring from senior to junior lecturers in the universities (Departement Pendidikan Nasional Direktorat Jenderal Pendidikan Tinggi) [1]. Mentoring is an essential task for all qualified government teachers. Nevertheless, these programs specially offer support to specific government teachers. As yet, there has been little discussion about particular mentoring programs for novice teachers in Indonesia.

To develop teachers' professionalism, the Indonesian government places different kind of support. The current recognized support is a teacher certification program. Taken from Law No. 14/ 2005, the government proposes a teacher certification program as an important approach for teacher expertise upgrading along with financial support (Jalal, et al.) [2]. The

government promotes this program to enhance teachers' professional qualities and better students' attainment. However, this certification program has many issues, involving the extensive use of fake certificates in teachers' portfolios (Sugiharto) [3]; inadequate validity and reliability of teachers' competences evaluation (Maulia) [4]; flawed certification procedures due to bribery matters and a deficiency transparency of evaluation (Sulistiyo, 2009, cited in Jakarta Post) [5]. Furthermore, some studies indicate that although the certification program helps teachers to gain financial raises, it does not develop student achievement (Fahmi, et al.) [6]. This teacher certification appears to be a failure. Although the program supports higher salaries, it has less impact on teachers' competencies and students' achievement. This teacher certification issues become a noteworthy problem in Indonesia. For these reasons, novice teachers need chances to participate in professional learning communities with mentoring support, in assisting their assimilation in the beginning teaching career. Additionally, appropriate mentoring advice will lead to teachers' professional development.

## **1.2. Research Problem**

A number of studies developed in western countries point out that mentoring programs assist novice teachers to develop their professionalism (Koballa, et al. [7]; Wang, et al. [8]; Youngs [9]). However, in Indonesia, few studies demonstrate the advantages of mentoring for novice teachers. In Indonesia, mentoring seemed to be conceptualized and recognized differently from the western concepts. In Indonesia, mentoring programs are identified as in-service training programs and professional development programs, such as Lesson Study and Piloting Activity. These programs are commonly established through joint lesson planning, observation and reflection through university-schools partnership (Suratno [10]; Suratno & Iskandar [11]). In the western concepts, the lesson study program has been acknowledged as a part of clinical supervision mentoring models (Acheson & Gall) [12]. These resembled 'mentoring' programs are widely implemented in many Indonesia schools, but the programs seem to ignore the importance role of mentoring in developing novice teachers' teaching enhancement.

## **1.3. Purpose Statement**

The significant roles of mentoring programs for novice teachers' professionalism in Indonesia are not adequately empirically studied. Therefore, this study investigated the incorporation of mentoring support in the 'Lesson Study' teaching observation program. This study also examined the trends and challenges emerged in the program. The findings of the study will be essential to offer recommendations in developing better 'Lesson Study' teaching observation framework or mentoring program in Indonesia in the future for novice teachers' professionalism. Also, the findings may contribute to the development of novice teacher mentoring literature in Indonesia and other similar contexts.

## **1.4. Research Questions**

Main Question:

What aspects are effective when using 'Lesson Study' in the mentoring program?

Sub Questions:

a. What are the strengths and weaknesses of this model to develop novice teachers' professionalism?

## 2. Literature Review

The following section will outline the interrelating themes: general mentoring framework and mentoring framework in Indonesia.

### 2.1 General Mentoring Framework

Many experts mention various definition of mentoring. Mentoring is defined as “a process whereby someone with more experience and expertise provides support, counselling and advice to a less experienced colleague” (New South Wales Department of Education and Training) [13 p.2]. Another perspective recognizes mentoring as “a process whereby an experienced and knowledgeable colleague facilitates the socialization and professional development of another” (Bhindi) [14 p.4]. In these definitions, mentoring offers support, counselling, advice and facilitation from senior colleague to their junior one in their early phase of teaching to develop their professionalism.

The master-novice apprentice model involves assistance from a master teacher to a novice for her or his first year of teaching career (Blair) [15]. Here, the master teacher functions as a mediator to facilitate the teaching development of the novice teacher. Vygotsky [16] identified this as semiotic mediation. Following Vygotsky [16] [17], the process of mentoring can widen what he called the Zone of Proximate Development (ZPD). He believed that the development of higher mental function appears twice, or on two planes. First it appears on the social plane and then on the psychological plane. This means “the interaction between the master and the student in the mentoring process will help the later in developing his/her skill as an individual” (Vygotsky) [17 p.161]. The interaction between senior teachers and their new teachers in a vigorous mentoring dialogue generates a productive mental set of learning that leads to improve teaching aptitudes. Furthermore, on the basis of these definitions, it can be concluded that mentoring is a process of knowledge and skills transference with professional and personal support from the experienced to less experienced teachers and can lead to successful learning in novice teacher’s professional development.

### 2.2 Mentoring Framework in Indonesia

Little attention has been paid to the advantages of mentoring for novice teachers in Indonesia. Mentoring seems to be conceptualized and recognized differently in Indonesia. In the next section, it will examine some forms of mentoring established in many Indonesian schools.

#### 2.2.1 Teacher Professional Development Framework

Some scholars have revealed positive impact of mentoring for teachers in Indonesia. Thair and Treagust (1999) introduced *Permantapan Kerja Guru* (PKG) -a Teacher Training Program (TTP)-approach as a base of teacher professionalism program in Indonesia (Thair & Treagust) [18]. They asserted that the implementation and practice of PKG in Indonesia had impressive results for teachers’ professional upgrading. Although this program had many flaws in term of less support from government to adapt the curriculum, time constraints for teachers and less facility from the schools, this program had provided a significant contribution to encourage other growing teacher professional development programs in the current time.

This program was later recognized as *Musyawarah Guru Mata Pelajaran* (MGMP) (defined as Subject Teachers’ Self-learning Association/teachers forum) (Saito, et al.) [19]. MGMP activities are conducted in various districts and are attended by representative teachers from various schools. This program resembles clinical, school-based mentoring

activities. However, the activities in the program tend to focus on discussing specific classroom methodologies and preparation of local exam in same subject teacher forums (Technical Assistance Consultant's Report) [20]. Although all studies above could be considered as a good model of the mentoring practice in Indonesia, there were less empirical findings on the success of these practices for novice teachers' quality. Moreover, the program seems to ignore the potency of new teachers to advance their teaching proficiencies.

In addition, some studies discuss the eminent role of in-service training that is similar with 'mentoring' framework for teachers' quality improvement. For example, the establishment of in-service training program for science and mathematics teachers' professionalism in some targeted secondary schools in Indonesia (Saito, et al.) [19]. They stated that this program was called Piloting Activities (PA). This program occurred through joint lesson planning, observation, and reflection and was aimed to improve teaching curriculum. The findings of the study showed that faculty members and teachers developed collegiality that was effective to improve professionalism. The collaborative teamwork is a part of mentoring activities. However, PA was perceived as time-consuming approach and could not cover the entire curriculum.

### 2.2.2 'Lesson Study' Mentoring Framework

Another resembled 'mentoring' practice is 'lesson study' framework. The program is generally conducted through teachers' collaborative lesson planning, observation and reflection in university-schools partnership (Suratno [10]; Suratno & Iskandar [11]). As mentioned before, this framework later has been classified as a part of clinical supervision models (Acheson & Gall) [12]. The clinical supervision model strengthens collaborative observation between the mentors and mentees to observe, reflect and assess their teaching behaviours to improve teaching instruction.

However, this program has a number of problems in practice. It was argued that the program provided positive impacts on teachers' instruction, but unfortunately they were perceived as time-consuming (Marsigit) [21]. Another study stated the program improved teachers' professionalism (Anggara & Chotimah) [22] and encouraged teacher reflection on their classroom practice (Suratno & Iskandar) [11]. Moreover, other problems of the program implementation are identified. The effective program was difficult to be achieved as the teachers faced cultural barriers in the critical reflection and teachers also had low awareness of the schemes (ibid) [11]. From the study findings, it can be summarized that although 'similar' mentoring programs are considered to be very important, such programs have some specific issues and challenges, such as time constraint, cultural barrier and low awareness. Furthermore, the programs are inclined to propose the same types of support for both in-service teachers and novice teachers as they partake in the same mentoring programs. Since novice teachers require diverse kind of support from in-service teachers, they may struggle in their early teaching stage.

## 3. Research Methodology

This study uses a qualitative, case study approach. The study focuses on a single mentoring case in a secondary school in Indonesia. The case study is an appropriate approach to adopt in order to address a case in a bordered structure (Hesse-Biber & Leavy) [23] restricted by time and place (Creswell) [24]. The focus of the study is bounded by one mentoring case in an Indonesian cultural context. Using the design, the researcher will be able to provide in-depth understanding of a school-based mentoring program in the participants' events in their real life.

In this study, the research site is “Sekolah Permata Hati” secondary school, which has adopted a school-based mentoring for novice teachers. This site is located in East Java. The research involved in total seven mentors and seven mentees in the school. In this study, all data collected are treated in a highly confidential manner and using pseudonyms to protect the participants and sites’ anonymity. In this study, data collection procedures include individual interviews, focus group interviews, and document reviews. Particularly, this work-in-progress paper will only discuss the analysis from participants’ single interviews, focus group discussion and reflective journals in one theme, the ‘Lesson Study’ mentoring framework.

## **4. Tentative Findings**

In this work-in-progress report, the tentative findings of ‘Lesson Study’ framework will be drawn.

### **4.1 ‘Lesson Study’ (LS) Framework**

From the the findings in single interviews, focus group discussions and reflective journals, the participants compared the pattern of two LSs they had practiced in their school.

The first LS is called Open Class Framework (OCF). In this program, the teachers practiced LS framework using format ‘Plan-Do-See’ cycle without mentoring supports. In the ‘Plan’ phase, the mentors, novice teachers and school facilitators collaboratively discussed a specific teaching strategy and designed the teaching plans for the teaching observation. They randomly appointed one of the teachers as a model teacher to practice the teaching in the observation. The teaching observation implementation was called as ‘Do’ session. All teachers focused on observing the model teacher’s teaching instruction from perspective of his/her students’ reactions and behaviour in the classroom. It was not allowed to comment on the teacher’s teaching behaviour in the practices. After finishing the observation, they had a reflective session or ‘See’ session. It was a session to reflect and discuss the issues and challenges of the model teacher’s teaching instruction in the previous observation. In this phase, all teachers discussed the model teacher’ teaching methodologies, provided the comments and solutions for the teaching improvement. Then, the cycle started again. They replanned and reobserved the same teaching methodology using different strategies until they could meet the best practices for students’ learning.

The second framework is LS with mentoring support, which is called as ‘Lesson Study Framework’ (LSF). In this type of observation, the novice teachers obtained a personal and professional support from their mentors to develop their professionalism. In the phase of ‘Plan’ session, all teachers had intensive preparation. Both mentors and mentees met weekly within ten weeks to discuss wide-ranged teaching topics, such as: some instructional strategies and steps, classroom management, professional responsibilities, teaching media and sources, and other teaching aspects. In the ‘Do’ phase, the teachers practiced three teaching observations: one mentor’s teaching observation as a role model of teaching and two mentee’s teaching observation for the actual practices. Furthermore, in the ‘See’ phase, all teachers participated in reflection practices where the mentees analysed their own observation using four reflective questions: what is the most satisfying aspects in your teaching practice; what aspects should be retained in your teaching practice; what aspects needs improving in your teaching practice; what aspects should be eliminated in your teaching practice. The mentees observed, reflected and evaluated their teaching practices. In this case, their mentors only provided constructive feedback on their mentees’ teaching practices and recommended solutions for better teaching practices.



## 4.2 The effectiveness of LSF for novice teachers' professional development.

The findings in the single interviews, focus group discussions and reflective journals showed similar outcomes. All teachers (14 of 14) agreed about the effectiveness of LSF in developing the novice teachers' professionalism. Particularly, the teachers noticed three points of LSF effectiveness to strengthen novice teachers' teaching instruction: better preparation and planning, manageable observation process and productive reflective practices.

The first benefit of using LSF model is better preparation and planning. LSF had better preparing and planning sessions. In these sessions, mentors supported the mentees pedagogically and psychologically. Both of mentors and mentees engaged in collaborative planning and preparation and reflective discussions. For mentees, the preparation in the mentoring program helped them to be more ready facing the LS teaching observation. Mentee Risa stated:

"In my opinion, LSF was really effective. Getting supports from my mentor, I could prepare the observation better; I was more excited and more motivated to make observation preparation and planning."

Similarly, mentor Faiz pointed out:

"LSF was more effective because the model teacher (mentee) would feel confident in performing the teaching observation. After receiving mentoring support about how to make the lesson plans, the learning steps, and teaching strategies, the mentee was more ready to face his/ her observation."

The mentoring support from the mentors improved mentees' confident in performing the teaching in the LSF observation.

The second strong point of LSF model is manageable observation process. In practicing teaching observation, it was easier to manage the observation schedule. Mentor Faiz said:

"The advantage of LSF was that the timetable could be organized well, not much interfering with our regular teaching activities. In this type of observation, the mentee could match his/her time availability with the mentor's teaching schedule."

Another positive point is that LSF model is more sustainable, in term of continuing the observation cycles. Mentee Irsyad commented:

"I thought that LSF was more effective as my mentor support me professionally and personally. The support had a nature of guiding, it was like the older people guided a child and then released him when he was independent. Therefore, I was less nervous and could perform the observation better. This model also was more sustainable in term of having more observation cycles".

In LSF, both mentors and mentees could discuss and match their time availability to practice the observation. Moreover, this model was more sustainable as the teaching observation could be repeated in both sides' flexible time for better teaching practices. As they had good relationship in the mentoring, the mentee could be more confident and perform the teaching observation effectively.

The last effectiveness of the LSF is about productive reflective practices. In the post-reflective session, the mentors did not assess their mentees' performance, as the mentees should analyse their own teaching performance by answering the reflective questions. Mentor Hafid said:

"Using the LSF model, the teachers felt less pressure. Both mentors and mentees could release their pain as a result of practicing critical reflection. In this practice, the mentees answered the four reflective questions and analysed their own teaching practices, and then the mentors only gave constructive feedback for the teaching improvement. This reflection also enhanced both sides' self-awareness".

Additionally, by doing reflection in LSF, the mentee had better self-awareness. Mentee Nisa shared her positive feelings:

“When I received feedback from my mentor, I felt happy because I was able to know my teaching strengths and weaknesses. I also did not feel hurt when knowing my teaching weaknesses because I was aware that my mentor support me personally.”

The productive reflective practices within LSF enhanced both mentors and mentees’ self-awareness. As the mentees analysed their teaching practices using the reflective questions, they felt less painful comments. In contrast, the mentors also felt less pressure to provide critical reflection, as their task was to provide constructive feedback.

### 4.3 Views on OCF Teaching Observation.

According to the teachers (14 of 14), they affirmed about the limitations of OCF practice for novice teachers’ teaching upgrading. In the findings, the teachers mentioned three limitations of OCF: inadequate preparation and planning, apprehensive feelings in the reflective practices and unsustainable observation program.

Poor preparation and planning of the observation became the first limitation. Generally, the teachers indicated that this limitation could lessen teacher model’s confidence in the teaching observation practice. As a model teacher in the OCF ‘Lesson Study’, mentor Faiz shared his experience:

“In OCF, all teachers designed in the general lesson plans, not including the instructional strategies and steps. When I became a model teacher, my team just gave me more responsibility to design specific teaching strategies and steps. I felt nervous because my design might not be appropriate with their expectation. Then, in the reflection, the observers revealed many mistakes of my design. I felt disappointed as the design should be a part of collaborative team works”.

Furthermore, mentee Zakia commented on the OCF practice:

“When I practiced observation in OCF, I obtained many difficulties to prepare and plan the teaching observation, there was no clear guidance of the observation. I was so nervous in the teaching observation”.

Handing over all responsibility of observation preparation and plans to the appointed model teacher created more burdens and lessened the teacher’s confidence in their teaching performance. As a result, it hindered the model teacher’s learning improvement.

The second limitation is the apprehensive feelings in the reflective practices. It was indicated that reflective practices in OCF created many negative feelings for the teachers. Mentee Irsyad pointed out:

“I was still a new teacher and needed mentoring support. When many colleagues observed my teaching performance and found many weak points of my teaching, I felt very uncomfortable due to many painful comments”.

Therefore, these negative feelings could inhibit novice teachers’ professional growth, as affirmed by mentor Ratri:

“Based on my own experience as a model teacher in OCF, I felt scared and anxious being observed or judged by my colleagues. Actually, the rules of OCF emphasized that the observers could only assess the students’ behaviour of students. However, such regulation was vague. In fact, judging the students’ negative behaviour equalled with blaming the model teacher. As the observers were not polite to criticize directly to the model teacher, so the students were criticized.”

The OCF model tended to involve many teachers to observe the model teacher’s teaching instruction. Although a lot of feedback might enrich teaching knowledge and provide solutions for the improvement of teaching strategies, negative feedback was also inevitable. As proposed by the teachers who played a role as model teachers, they felt offended by many negative judgment of their students’ misbehaviour. Negative feedback was perceived as a criticism.

The final limitation of OCF is about unsustainable program. OCF also had time management problems due to many teachers' involvement in the observation. Mentee Sita stated:

“Arranging the observation was difficult. Just by doing one-time practice of OFC teaching observation, eleven science teachers should leave their teaching duties and ignore their students' learning needs. Therefore, there was no sustainable program of OCF. On the other hand, LSF was more effective. I only engaged with one teacher in the practices and I could make an appointment with my mentor in my free teaching timetable without leaving teaching jobs. The timetable was also flexible and personally much easier to set up the preparation”.

This model was time-consuming. The involvement of many teachers in the OCF observation was giving bad impact for the students' learning development. Moreover, having the second observation cycle to observe the new strategy for the teaching was difficult since many teachers should leave their class again.

## 5. Discussion

Teaching observation is an integral part of successful professional development programs of any newly qualified teachers (Kopcha & Alger [25]; Luft & Cox [26]; Bleach [27]). Teaching observation is aimed to train for novice teachers in designing lesson plans and teaching strategies. Additionally, both mentors and mentees collaboratively work to observe, analyse and reflect the mentees' teaching actions and beliefs in the critical reflective sessions. In the reflective sessions, the novice teachers develop their teaching awareness through self-reflective practices (Yiğit, et al.) [28]. When the mentors provide constructive feedback on their teaching methodology, the mentees improve their learning awareness and become an independent reflective learner.

As mentioned earlier, all the teacher mentors and mentees (14 of 14) acknowledged the effectiveness of LSF as a model of teaching observation to improve novice teachers' teaching and learning strategies. From the findings, the teachers noted three points of effectiveness of LSF in preparing novice teachers' professional development.

The first strength point of LSF is that this model had better preparation and planning sessions. In the sessions, mentors supported the mentees professionally and personally. Both of sides engaged in collaborative learning and reflective discussions. As a result, the mentees who acted as model teachers in the teaching observation were more confident, motivated and prepared to experience the observation. Consistent with this finding, Gagen & Bowie [29] stated that mentoring professional and personal support could enhance novice teachers' teaching capacity and develop their confidence in their first teaching phase.

The second advantage of using LSF is that it involved with more manageable observation process. In the process of mentoring, time management become one of the biggest issues (Kirkby) [30], including the teaching observation enactment process. However, the finding in this study showed that LSF model had more structured timetable for practicing classroom observation. Both mentors and mentees could match their time availability to practice the observation, without disturbing their regular teaching timetable. Moreover, this program tended to be sustainable. Using supportive relationship, both sides could start further observation cycle with flexible time appointment. Consequently, the novice teachers could gain more opportunity to develop their teaching expertise.

The last effectiveness of LSF was that this model offered more productive reflective practices. In the post-reflective session, the mentees should observe and analyse the previous teaching practices by answering the reflective questions, while the mentors only provided constructive feedback on their teaching performance. This kind of activities could release both of sides' negative feelings since they could avoid personality conflict in the critical reflective

practice. Moreover, this activity could develop both sides' self-awareness. The purpose of doing self-reflection is that both of mentors and mentees could learn from their previous teaching strengths and limitations and create solutions for difficulties (Yiğit, et al.) [28]. By getting feedback from their colleagues, novice teachers can independently identify their teaching strengths and weaknesses and find solutions for better teaching performance. Also, the mentors had more awareness of their teaching.

Furthermore, all the teachers (14 of 14) agreed that OCF was problematic. They remarked three kinds of limitations of this observation practice: inadequate preparation and planning, apprehensive feelings in the reflective practices and unsustainable observation program. Firstly, the issue of poor preparation and planning of the observation was apparent. In OCF model, the model teachers gained more pressure to develop the teaching preparation. For novice teachers, without supportive mentoring relationship and communication, it was difficult to have collaborative planning with their mentors and it made them to feel unprepared to face the observation. Therefore, when the model teachers were not ready in their teaching observation preparation, their observation practices would not be success. In this situation, the mentees (model teachers) might not feel comfortable or feel that they were being spied (Lerch) [31]. This situation caused the teachers feel frustrated and it impeded their teaching quality improvement.

Another negative effect of OCF was that the reflective practices in this observation model resulted negative feelings for the teachers. In reflective sessions, many observers more concerned on providing negative feedback on the students' misbehaviour. This feedback offended the model teachers' feelings. In this situation, there would be less opportunity to find appropriate solution for the model teachers' better teaching performance. It is reasonable that in the critical reflective practices, there were possibilities for personality conflicts (Lerch) [31] due to misunderstanding of critical reflective analysis (Acheson & Gall) [12] and negative evaluation or criticism (Reilkoff) [32]. Since in the critical reflection, the observers should provide the constructive feedback, including the teaching problems, the model teachers might misunderstand the constructive feedback on the teaching weaknesses as 'a conflict' or 'a critic'. Without supportive mentoring relationship and communication, both mentors and mentees might misapprehend the constructive feedback as negative assessment.

Another issue of OCF was that the negative feedback in the reflection seemed to be perceived as a criticism. The research was conducted in Java, Indonesia. Therefore, Javanese culture seemed to influence the teachers' reflection. In Javanese principles, lower hierarchical individuals could not show conflict, criticism, and disagreement to their senior or other people. This act is noticed as disobedient and immoral actions (Mulder) [33]. Open critical expression challenged the Javanese ethical values. Conflict and disagreement should be hidden and unexpressed. This was caused by a strong embedded Javanese principles: principle of conflict avoidance, the principle of respect and the ethics of social harmony (Magnis-Suseno) [34]. Influenced by this culture, the teachers seemed to find it difficult to develop their reflective thinking that was important for their teaching professionalism.

The last limitation is the unsustainable program of OCF. The teachers stated that OCF model was time consuming and had difficult time management. Many observers should participate in teaching observation process and leave teaching activities. Based this difficulty, it was difficult to keep more observation cycles for better teaching change. This finding is relevant with Acheson and Gall's [12] and Marsigit's [35] findings.

## 6. Initial Conclusions

From the tentative findings of this study, it is identified three principal initial conclusions. Firstly, LSF may be a more efficient way of developing novice teachers' professionalism in the early phase of teaching career. Secondly, factors that improve novice teachers' professionalism using LSF are greater organisation in preparing and planning the LSF, manageable observation processes, and productive reflective practices that lead to mentees' confidence and self-awareness in their teaching presentation. Finally, a successful OCF will be difficult to attain due to the problem of preparation, problems related to reflective practices and difficulties in program sustainability.

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# Toward a Bright Future of Socio-Political Trends in Literary and Cultural Studies in Asia: Its Development and Impacts In Asian Educational Backgrounds

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## **Abstract:**

The paper briefly shares the interrelation between cultural studies and literary studies, and negotiates their positions in developing social and cultural perspectives. Cultural studies have been widely acknowledged and appreciated throughout the world since they have given significant contributions toward the development of culture and humanity. Multidisciplinary approaches have been applied and widely adopted by cultural study researchers so that they can touch the ground of multi-layers of humanity issues. Working with their own channels and modes, cultural studies have major role in determining the social and political changes around the world since their critical analysis is to encounter the imbalance practices of relation of power. The trends of world literature have come up with Asian eyes and identities and those things will significantly bring bright future toward the dynamic movement of humanity and cultural values across Asia and other third world countries, and more importantly these bring new light to educational atmosphere. The impacts on education and cultural spheres have much more been viewed from the dynamic movement of Asian literature to lead its own path to a bright future of socio-political implementation and manifestation in humanity life throughout the world.

**Keywords:** cultural studies, Asia, Asian literature, world literature, national literature, educational background, socio-political implementation

## **Introduction**

Literary and cultural studies are two different things. However, both of these can be put side by side as a set of critical tools to encounter the practice of power relations prevailing in today's society. Literature is a socio-cultural representation that dwells on metaphor and imagery in achieving textual message. While the study of culture is a manifestation of a series of multidisciplinary work that exposes the practice of text work within the framework of irregularity and inequality. In this view, literary and cultural studies can be juxtaposed as a methodology to correct the imbalance in the practice of the embodiment of ideology in society (Hall, 1980a).

For several decades set back to the centuries, the contribution of cultural studies toward science and advancement of social life have shown significant improvement since its first emergence in the 1960s in Birmingham, England. Cultural studies became a set of tools to encounter the practice of relation of power in the prevailing culture in the community and thus its development shows the progress until today. With a variety of reasons which in accordance with the technology based practice, cultural studies have shown their fangs to reveal the imbalance practices of relation of power polarized within society (see Hall, 1980b; Johnson, 1986 & 1987; O'Conner, 1989; Turner, 1990; Grossberg, 1989; and Agger, 1992).

Hence there have been many disciplines which follow cultural studies and that they are connected and interrelated to each other to set a well designed multidisciplinary study. In line with this, literary theories develop to pave the route of the advancement of cultural studies and so that both disciplines work hand in hand to promote a better interdisciplinary model of analysis which rely on each others' critical analysis. Therefore, literary theories and cultural studies have some interrelations in terms of their specific terms and analysis in discoursing social practices.

### **World Literature and Asian Literature**

Today, the attempts to theorize world literature fall into twofolds. On the left side is a discourse that world literature is simply the prominent work of literature that each country has to offer; and on the right side is an idea that world literature is not an object at all, but rather a practice. For those who agree on the second fold that the problem with world literature as the best of national literature is that it puts it an indefinite area of discussion. According to Hamilton (2012) world literature describes the point at which this ordered system is put to thoughts. Put simply, world literature is the "leak" of national literature. It is argued that studying national literature is hard to define and hence it is difficult to grab. Theorizing this will lead to a large number of understanding related to world literature. It is sometimes articulated as the circulation of literature around the world which includes its translations and distributions.

Asian literature is all of literary works produced in Asia and beyond. This definition clarifies that literary works set and dated in Asia are Asian literature with all of their problems which are exposed to in them including the national problems. Asian literature now becomes the barrometer and window to see the vast changing development in Asia and its surroundings. Even Asian literature is now called as Asian Eye which gives rooms for many wide angles of interpretation accros Asia and beyond.

However, it should be taken into consideration that Asia is still considered as the East in postcolonial framework. This view has generated another dichotomy that the countries in Asia are the third world countries. As a part of the third world, the life of societies in the countries being depicted is considered other and outcasted. Likewise, it is not an easy task for the countries to step their own feet so strong to encounter and break out the domination of West in the political chess game. This is even caused by the struggle of Asian countries to survive in solving the economical burdens and the infrastructure difficulties among them compared to Western countries. In the meantime, Asian is now crawling to reach its own shape and power to be a part of the global world.

In political chess game, every country has to survive to be a decision maker for its own fate in order to gain Western countries' sympathy and to become a part of world political order together with the West both regionally and globally especially in Asian Economic Society (AES). This of course will generate another issue which in return turns down the loyalty characteristics toward the local wisdom and culture. This double personality is sometime called as "the in-between-ness". The in-between-ness will create an inferiority complex and hence resists the intercultural relation. The characteristics then legitimates Asia to gain its own otherness and peculiarities. Asian literature has posed those above issues in their promotions of the life and the space of Asian life. It becomes the mirror of the



development and the achievement of humanity project in Asia and beyond. To put that in another way, Asian literature has become the wide angle mirror stage of ironic life among its diversified societies.

As has been stated before that literary works produced in Asia have become the Asian eyes for western countries to view and to make more sense of Asia. What makes Asian literature is interesting is that they picture out the problematic issues which ground on their own local wisdom and simpleness. With their own peculiarities and insignificant ambivalences, Asian literary works have their own pledges to promote humanity stand points.

### **Harmony and Equality**

It has been put forward that the tasks for humanity burdened to Asia and other countries all over the world are to maintain harmony and equality. Those key words should be taken into greater attention when living under the same sun. Every problem in this world can only be solved easily by giving respect and uprising the peaceful life spirit, for Asian society in particular and for the world in general, to extend them in every practice of everyday life. Harmony and equality should have become the motto and spirit of brotherhood and sisterhood to a world's brand new life breath. This in return compensates that every problem in this world will be easily overcome by giving respects and gratitudes among the members of society, one and another.

Answering the above issue is to reinvent the multicultural people (Addler, 1977). This is the only answer which could provide the long awaiting of brotherhood problems in the world. Becoming multicultural people will be meaning to have a multicultural personality. Having multicultural personality will possibly provide access to every problems of diversity and inequality, and the appreciation toward the other will be strongly patronized. Issues on taboo and weirdoes should now be turned down and changed into multilateral communication and relations. Issues on same sex marriage on media have strongly been blown up because the uncommon issues are close to ambivalence and anomaly. The issues will be more complicated when they are put together with racial and ethnicities issues in some regions.

It has become a public consumption that race and ethnicity have close relation with sexuality and gender to some extent. They have been connected to each other since they are tied to the system of belief and tradition of a certain culture. If the society could return an appreciation each other and consider them as diversified stand point, the misunderstanding over those things will be easier to bear and overcome so that the next tragedy of humanity will not come to its own shape. Every region has its own belief and myth which related to sex and gender. Therefore, their practices over the issues will be treated differently. This in return needs consideration to put them in the spirit of diversity. The role of media such as tv, newspaper, internet, magazines, and other mode of publications will dictate different tastes and ideas.

### **Socio-political Implementation**

To anticipate the global issues on the above stated problems, it is a high time to deal upon the state of diversities. Acknowledgements and appreciations over the differences will

be manifested when the issues are brought to the political, social and cultural stages. As a reference, feminists' movements during 1970s and 1980s had shown their manifestations by entering the political stage until the year of 1990s. And their first endeavor gave influence to the other movements such as gay and lesbian rights to bring their issues on human rights to be recognized by political stages. This will generate an idea that political situation can be a powerful tool to gain mass support to reach the goal of an ideology. This is because of the political movements which give birth to a political statement and a dogma. Thus, political condition does give rooms for the protection and the strenghts to freely preserve the stated ideology. Therefore, the politics should be able to provide an openness and a room for discoursing the issues which are free from individual will and tendency rather than collective will.

### **Educational Supports and Backgrounds**

The education however plays an important role to determine the humanism political agenda. This is because educational world gives much more rooms and access for young generation to think and create opportunities creatively in the next run of political agenda. Education will show its impacts for the next 10-20 years of program or on going progress. This is because education tightly connected to ideology and belief. Therefore, education is needed to turn down illiterateness to overcome the humanity project. With the support of technology, the improvement in all aspects of human life will be closely tied to educational world and therefore will provide more tools to share the information massively and precisely well organized. This in return will support the emergence of digital literereacy to progressively maintain information technology to work together in all different parts of life. Therefore, education is an important key for the successful of national building. It is an arrow's eye of humanism.

Instead of practicing and theorizing the cannon literature, Asian literature provides wide angles of ambivalences and ambiguities which seem give much more rooms for interpretation and discussions. The teaching of Asian literature which is supported by technology guidelines will ultimately bring the new air of insights to the very nature of Asian minds and hearts. Therefore, Asian countries should be able to implement the teaching of Asian literature into their curriculums nationally and regionally to give more views and perspectives over rich and colorful Asian societies and cultures. This will bring new hopes for the writers and the critics in Asia to develop their own paths and ideas. To put it simply, the teaching of literature and literary studies in Asia should be covering its own plethora of issues and diversities. From heretoforth, Asian schools and institutions will be able to look back to their own ideological platforms.

### **Conclusion**

Cultural studies give more rooms for the survival of dynamic movement of an issue. Cultural studies challenge the existence of relation of power within society which seems to be imbalance. Heretoforth, cultural studies provide the tools to detect the unequal practices of reltion of power in all aspects. Literary and cultural studies are the manisfestations of human life. They provide the symptoms and practices of the representation of humanity issues.

Literary and cultural studies can support each other operationally and methodologically to create harmony and equality in society.

Cultural studies on the one hand provide tools to encounter the issues of irrational practices of power relations in multidisciplinary and interdisciplinary platforms. Literary studies, on the other hand, work in another way to operate the humanity problems on metaphoric levels. Adopting cultural studies' projects, literary study can become a means of propaganda to incorporate humanity's development safely. The support of literacy is also playing an important role to implement the project. The teaching of literature and literary studies should be able to look back to Asian minds and hearts to enhance the spirit of togetherness and diversities. This will generate a thoughtful insight into Asian own eyes and perspectives which then also educate the societies in Asia to give respect to their own rich and colorful diversities. Education becomes the key role in every step of development because what is going to be reached out by education will be manifested in the future ahead, which in return will strengthen the understanding of ideology and belief toward a bright future of humanity life around the world.

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# ANALYZING STUDENT'S UNDERSTANDING THE RELATIONSHIP BETWEEN QUADRILATERAL AT THE EARLY FORMAL STAGE

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## ABSTRACT

Learning of geometry must be allowed to the students' thinking skills will enhance the intellectual engagement of students. One of the thinking skills used in solving geometry problems is the ability to think geometry that helps the student in directing his thoughts so that the solution of the problem being solved tends to be true and correct. Differences in students' ability to think geometry is most likely influenced by their formal operational stage based on development of cognitive. The purpose of this study was to obtain description of student's understanding the relationship between quadrilaterals at the early formal stage. To achieve these objectives, the researchers conducted interviews with task-based by drawing activities, identifying and stringing the relationship between quadrilateral recorded with the recorder. This study includes qualitative and exploratory research. Subject had been taken from class VIII SMP who is at the early formal operational stage. To test the credibility of the data, the researcher used triangulation time. The results of this research showed that the student who is at the early formal operational stage stringing 14 of 15 relationships and the student might tend to use 3 attributes that position, the size, shape of quadrilateral.

**Key Word:** *Understanding, Early Formal Stage, Quadrilateral*

## A. BACKGROUND

Geometry occupies a special position in the secondary mathematics curriculum because there are many concepts contained in there. The concept is closely associated to other forms of objects that are often encountered by students in everyday life. Various opinions emerged that addresses geometry both definitions and chances to be taught in schools.

Abdussakir [1] states that, basically, geometry has a better chance to be understood by students for ideas of geometry have been already known by students since before they enter school, for example, line, area, and space. However, the expectation is different from the reality in real life where various studies show that mastery of mathematics, especially geometry achievement is still low [2].

The above opinion is supported by the results of Setiawan's research [3] states that the fifth grade of elementary school students did not master the concepts and principles of geometry. While in junior high school [4] found that many students were wrong in solving the problems of parallel lines. Based on this, the geometry is looked as part of math given to students classified as difficult. Students' s learning difficulties can not be separated from the practice of learning that has been in progress [5].

Idris [6] suggested that learning of geometry is not easy and some students fail to develop an understanding of the concept of geometry, geometric reasoning and skill to solve the problems of geometry. Furthermore, Idris stated that a number of factors that lead learning of geometry is difficult which they are language of geometry, visualization and learning abilities are less effective for the low mastery of facts, concepts and principles of geometry.

According Soerjono [3] one of among the causative factor is the intellectual ability of students. The results of Burger and Shaughnessy's research [7] demonstrated that the intellectual ability of students plays an important role in the mastery of facts and concepts of geometry.

Intellectual abilities are spatial ability and auditory ability which are very close relationship with the cognitive aspects of students in general. Research shows that the understanding of spatial knowledge can affect the performance related to academic tasks especially math, reading and

science [8]. According to Piaget and Inhelder [8] states that spatial ability which is an aspect of cognition that develops in line with the cognitive development.

Piaget [9] describes the sequence into four stages of cognitive development which is qualitatively different, namely: (1) the stage of sensory motor (2) pre-operational stage, (3) the concrete operational stage, and (4) the formal operational stage. He claimed that all children pass through four stages with different speeds, but none of the children who passed through one of the four stages [10, 11].

Piaget suggested that students should use logical operations to get structure of knowledge and their changes [12]. The more often children move and find new things, the children will increasingly have new schemes that are used to develop their logical operation.

## B. METHOD

This research is exploratory descriptive study with data analysis by qualitative approach which main data in the form of words that are linked into sentences. Qualitative methods is chosen for profile students' understanding of the natural background and the main instrument is the researcher's own research. It means that the data which is analyzed in form descriptive and not in the form of figures as well as in quantitative research.

This research was conducted in Watampone, Bone district, Makassar, South Sulawesi. Subject in this study is student of class VIII SMP. The reason for choosing a class VIII student junior high school student is at the stage of formal operations, so that students are able to think more abstractly, capable of inductive and deductive thinking and be able to think logically.

To determine the stage of cognitive development of students who are at the formal stage, then used the test instrument Logical Operations Piaget (Piaget TOL) developed by Leongson, JA & Limjap, AA (2003). The instrument is a matter of form description which consists of 35 questions. With reference to the opinion of Schoenfeld and Avalanche & Limjap, researchers determined the students' level of cognitive development by Piaget logical operation test. If the scores obtained by students 71-105, the level of cognitive development of students at the level of formal beginning.

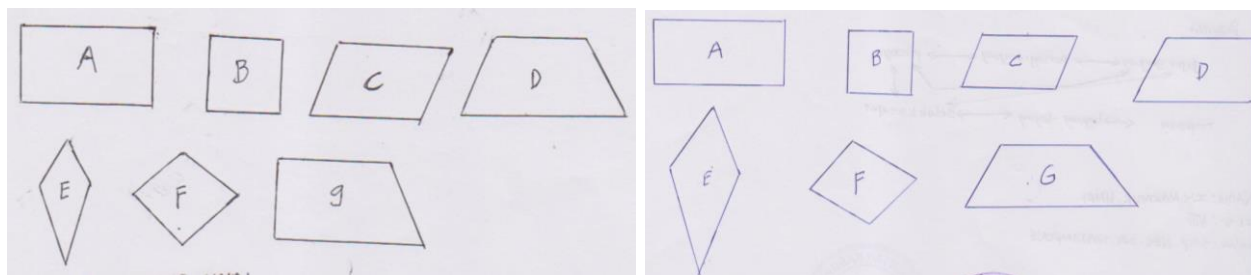
To obtain valid data in this study, then do the validation data. One of the qualitative research validation procedures that can be performed is by means of triangulation. Validation of the data in this way is done by repeatedly checking with different time. Sugiyono (2005) called the data validation process by triangulation of time.

## C. RESULTS

The results of task-based interview of the subject on data collection that illustrate understanding of the concept of quadrilateral of student through drawing, identifying and making relationships between quadrilateral diagram as follows.

Junior high school students with stage of cognitive development at the stage of early formal operations when drawing rectangles, students can draw variety of different rectangular shapes are infinite by paying attention to the attributes of the shape, the size and position of quadrilateral

More clearly on task-based interviews, **the activities of subject when drawing a quadrilateral**, the subject drew quadrilateral by paying attention to characteristics or attributes of quadrilateral drawn as in the following figure.



**Figur 1** Various Quadrilateral Drawn Subject at the Interview

The following is a transcript of the interview excerpt based on the task of drawing quadrilateral

- AG065 P “Kalau bisa, kira-kira berapa bangun segiempat yang dapat kamu gambar?”
- ZM066 R “Tak terhitung.”
- AG067 P “Maksudnya?”
- ZM068 R “Banyak sekali”
- AG069 P “Maksudnya?”
- ZM070 R “Karena setiap bangun segiempat dapat gambar berbeda berdasarkan jenis, bentuk dan ukuran dan posisinya.”
- AG071 P “Jadi kamu dapat menggambar bangun segiempat berapa banyak?”
- ZM072 R “Banyak sekali”
- AG073 P “Maksudnya?”
- ZM074 R “Tak terhingga”
- AG075 P “Alasan mengapa kamu mengatakan tak terbatas atau tak terhingga, Apa?”
- ZM076 R “Karena setiap bangun yang saya gambar akan berbeda walau jenisnya sama tetapi akan berbeda bentuk, ukuran sisi dan posisinya jika
- AG077 P “Maksudnya ukuran sisi?”
- ZM078 R “Ukurannya ada yang besar dan ada yang kecil”
- AG079 P “Selain itu?”
- ZM080 R “Posisi”
- AG081 P “Kenapa dengan posisinya?”
- ZM082 R “Posisi bangun. Kita dapat membedakan bangun yang posisinya datar dan miring akan berbeda”
- AG083 P “Mengapa mereka berbeda satu sama lain?”
- ZM084 R “Karena itu tadi. Karena berbeda bentuk, ukuran sisi dan posisinya”

From the transcript of interviews and the results of drawing quadrilateral above, data showed that the subject can draw various kinds quadrilateral by taking into differences in shape, size and the difference of position.

**In the identification activities of differential quadrilateral**, subjects pays attention two attributes of quadrilateral based on size of the side and position While at identifying the same quadrilateral, subject attentioned attribute number of pairs of opposite sides and parallel, the angle of sight, the existence of a right angle which is owned by the rectangle and the size of both the adjacent sides or opposite sides and parallel. Definition of quadrilateral which is made by the

subject accurate, excessive and inaccurate depending on the definition of quadrilateral used as a reference in defining a quadrilateral.

Clearly explained that the subjects make inferences when:

**a. Identifying Parallelogram**

1. Student identifies several different models by taking into the attributes of size of parallelogram and the position of parallelogram.
2. Student identifies some of the same characteristics of parallelogram by regarding the attribute size of side and the size of the angle. They are parallel and opposite sides have the same length and do not form a right angle.
3. Referring to the definition of parallelogram is a quadrilateral of which two pairs of parallel opposite sides, or two pairs of opposite sides of equal length, or a pair of parallel opposite sides of the same length, then the attributes given by subject to construct a definition parallelogram is excessive.

**b. Identifying Rectangle**

1. Student identifies several different rectangular models by taking the attribute of size and the position of rectangle.
2. Student identifies a common characteristic of some rectangles that four corners is right angle, opposite and parallel sides equal in length.
3. Referring to the definition of a rectangle is a parallelogram whose one of the corners is right-angled, the attributes given by subject to construct a definition of the rectangle is inaccurate.

**c. Identifying rhombus**

1. Student identifies several rhombus in different models with regard to the attributes of size and position of the shape.
2. Student identifies a common characteristic of some rhombus that all sides of rhombus has the same length, opposite parallel sides and equal in length, does not have the right angle.
3. If the definition refers to a rhombus is a quadrilateral whose four sides the same length as the attributes of a given by subject to build rhombus definition is accurate.

**d. Identifying square**

1. Student identifies some square in different models with regard the size and position of the shape.
2. Student identifies the characteristics of some models of the same square i.e., all sides is equal in length, parallel opposite sides and equal in length and all angles are right angle.
3. If the definition refers to the square is rhombus which one of its angles is right angle or quadrilateral whose four sides the same length and the angle is right angle, then the definition given subject is accurate.

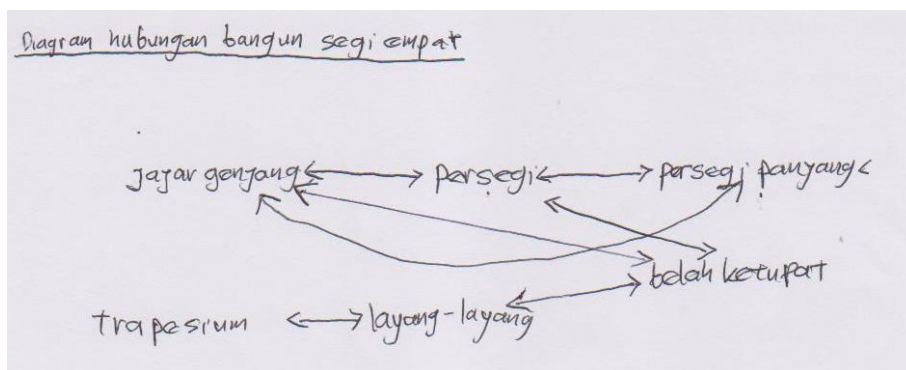
**e. Identifying Trapezoid**

1. Student identifies several trapezoids in different models with regard to side length and size attributes, position and the kinds of trapezoid.
2. Student identifies the characteristics of some models of trapezoids which have one pair of parallel opposite sides and the parallel sides of unequal length.
3. If the definition refers to the trapezoid is a quadrilateral having parallel opposite sides or rhombus which has only a pair of parallel opposite side, then the definition given subject is accurate.

**f. Identifying Kites**

1. Student identifies several kites in different models with regard to size of the kites and position of kites
2. Student identifies the characteristics of some models of kite is adjacent sides of the same length and the angle confronted is same large.
3. If the definition refers to a kite is quadrilateral that has two pairs of adjacent sides of the same length and the sides do not overlap, then the definition given by subject is accurate.

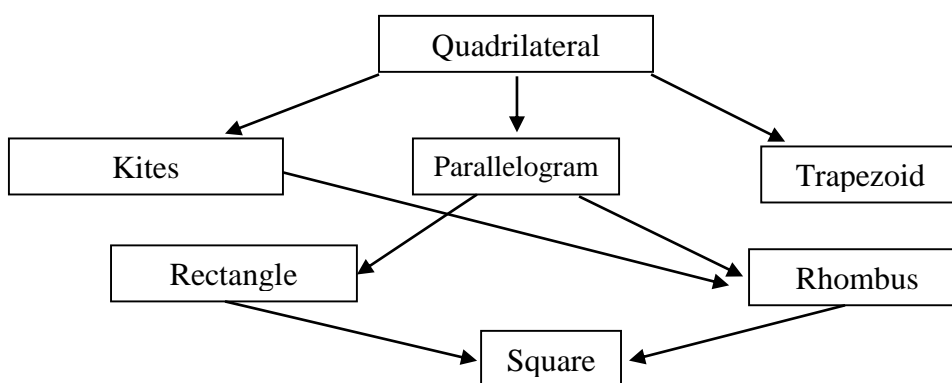
In the activities of making diagram of relationship between quadrilateral, subject made diagram relationships between quadrilateral as in Figure 2. The following



**Figure 2** Diagram of the relationship between quadrilateral made by Subject

Based on Figure 2. above, the subject explains that there are 21 possible relationships between quadrilateral parallelogram, rectangle, rhombus, square, kite, and trapezoid. This relationship of 21 there are only 17 possible relationships, it is caused by definition trapezoid is a quadrilateral which has a side that only a pair of parallel sides. Subject recognized 4 accurate definitions from 6 accurate definitions are possible. Subject made 10 analytical definitions of 10 analytical definitions probably and 8 of them are accurate.

Simply put, the explanation made by the subject related to the relationship between quadrilateral can be described as in Figure 3 below.



**Figure 3** Relationship of various types of quadrilateral made Subject

**D. CONCLUSION**

From the results of this study concluded that:

1. If it is viewed from the standpoint of analytical, the definition made by subjects who is at the early formal operation presents relationship 14 relationships between quadrilateral



- possible. Shrinkage occurs relationship of 15 who may be 14 possible relationship. This shrinkage occurs because there is a genus that are used but not genus proksimum
2. Based on the understanding which is recognized by the subject who is at the stage of early formal operation, trapezoid is a quadrilateral which has a pair of parallel sides and a kite is a quadrilateral which is two pairs adjacent sides has the same length, then these results can be interpreted that the subject makes sense analytically.
  3. There are 21 possible relationships between quadrilateral parallelogram, rectangle, rhombus, square, kite, and trapezoid. From 21 of this relationship, there are only 17 probably connections which is made by the subject, it is caused by definition trapezoid is a quadrilateral which has a side that only a pair of parallel sides
  4. Subject made 10 analytical definitions of 10 analytical definitions probably and 8 of them are accurate.

## E. SUGGESTIONS

Based on these results, some suggestions have to be submitted as follows:

1. From the results of this research, in general student's understanding who is at the stage of early formal operations can understand the relationship between quadrilateral well but is less able to pay attention to or identify the relationship both similarities and differences of quadrilateral. Therefore, the researchers suggested that the educators must pay attention the stage of cognitive development of students in learning, particularly in understanding the relationship between quadrilaterals.
2. In the activities drawing quadrilateral. There is student's tendency, in this study, to draw a quadrilateral by starting from images that is very familiar for subject or often encountered and recognized by subject as a rectangle and a square. Likewise, when subject made diagram relationship between quadrilaterals, the tendency was happening again. Subjects tended to start from rectangle and connect it to the square. This indicates that the learning process in schools especially for quadrilateral, teachers often taught students ranging from rectangle or square so that students are only very familiar with both of them. Therefore, researchers also suggest to educators to teach not only the quadrilateral from a square or rectangle but start another quadrilateral such as parallelogram, rhombus, kite and trapezoid.

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# The Urgency of Gen Z Economic Education

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## ABSTRACT

This paper aims to identify the economic factors that influencing the Generation Z buying behavior, and how literate them about economics. Generation Z are born completely within the technological age, exposure to computer and internet. They are growing up in paperless or e-money era which leads to postmodernism counterculture. A survey was conducted to collect the data. The results show that there are tendencies to irresponsible buying behavior, even they are economic literate. This is urgent to integrating the economic education with the Generation Z's worlds, not only to be economic literate but to be wise, rational and responsible buyers, and to achieve the economic education objective.

Keyword: *Generation Z, economic literacy, e-money, buying behavior*

## INTRODUCTION

The average interval of time between the birth of parents and the birth of their offspring, this biological definition has placed a generation for millennia at around 20–25 years in span. McCrindle [1] said this definition has served sociologists well in the past, but it is irrelevant today. Because cohorts are changing so quickly in response to new technologies, changing career and study options and shifting societal values, two decades is far too broad a generational span (McCrindle [2]). From the McCrindle Research Center used 2001 as the starting point of this generation's birth years. A later McCrindle report gave a range of 1995-2009, starting with a recorded rise in birth rates, and fitting their newer definition of a generational span as 15 years. Under this definition, McCrindle uses birth rates to determine when a new generation emerges rather than or in addition to sociological changes and trends. Today generations are defined sociologically rather than biologically. A generation refers to a cohort of people born within a similar span of time (15 years at the upper end) who share a comparable age and life stage and who were shaped by a particular span of time (events, trends and developments).

Casaló, and Flavián [3] said from their paper that the internet has become one of the most important communication channels in the world and growing internet usage is motivating some changes in the consumer purchasing process. The newest generations are familiar with website, social media or born on the internet exposure. These adolescents are today generation. They who are the students of today and university graduates, by the ageing of the time they will be an employees and consumers of tomorrow. These generations called Generation Zed or popular with Gen Z.

Gen Z is part of a generation that is global, social, visual and technological. They are the most connected, educated and sophisticated generation ever. They are the up-agers, with influence beyond their years. They are the tweens, the teens, the youth and young adults of our global society. They are the early adopters, the brand influencers, the social media drivers, the pop-culture leaders. They comprise nearly 2 billion people globally, and they don't just represent the future, they're

creating it which leads to postmodernism counterculture and change in buying behavior. The change from paper money to e-money, gave an easier way to buy either offline or online purchasing. At the present time, the internet is not only a networking medium, but also as a transaction medium for consumers at global market in the world, and becomes dominant retailers in the future (Musa, and Mohamad [4]). The most necessary element of e-retail offers a direct interactive channel as well as no time definition, people and place. The world of shopping has been changing dramatically today, from traditional markets to malls, and the introduction of electronic commerce gave customer an extended way to shop even the malls were closed (Constantinides [5], Kim and Park [6]).

This paper aims to identify the economic factors that influencing the Generation Z buying behavior and how literate them about economics (economic behavioral standard).

### Generation Z

Gen Z's have been born into the crisis period of terrorism, the global recession and climate change. They are predicted to spend their young adult years in a time of economic and social renewal. As birth rates picked up in 1995, we had the beginnings of Generation Z. Marketers are tempted to begin a generation at a key year like, say, 2000, but there is no demographic or sociological justification for such date picking. The birth rates, in addition to the social changes and trends, give a solid basis to generational definitions.

McCrinkle [2] defining seven factor to identify Gen Z; 1) Demographically changed, 2) Generationally defined, 3) Digital integrators, 4) Globally focused, 5) Visually engaged, 6) Educationally reformed, 7) Socially defined. McCrinkle research gave labels for Gen Z to distinguish them from the other generations. Those labels are described in Table 1.

**Tabel 1. Labels for Generation X, Y and Z**

Gen X	Gen Y	Gen Z
The options generation	The millenials	Zeds
Post-boomers	Net generation	Zees
Baby busters	Dot.com generation	Bubble-wrap kids
Slackers	Echo boomers	The new millennials
MTV generation	Generation M (media)	Tweens
The doom generation	The digital natives	Digital integrators
X-ers	Google generation	The up-ageing generation
The gap generation	Click 'n' go kids	Generation recession
Boomerang generation	Generation whY	screenagers
The latchkey kids	Y gen	iGen
The Pepsi generation		

(source: McCrinkle [2])

More than any other generation, today's youth are extensively connected to and shaped by their peers. It found that they had more than one social network account such as facebook, Naver Line, Path and Instagram and other messaging- internet based such BBM, and Whatsap. And so, the network that influences them is greater numerically, geographically and being technology based, is connected 24/7. This generation is already influencing the purchasing choices of their parents and will soon be powering our nation financially, environmentally and of course socially.

### Economic Literacy

The Voluntary National Content Standards in Economics, are the building blocks of our principles course (Walstad, and Rebeck [7]). The twenty Standards provide an operational

definition of economic literacy and may be grouped into seven topics: Scarcity and Choice, Economic Behavior, Allocation of Goods and Services, Markets, Factors of Production, Macroeconomics, and Government and Economic Institutions. The Standards include statements defining the core of economic knowledge and descriptions explaining what students should be able to do with that knowledge.

The most basic economic idea is that Scarcity forces people to choose among competing resource uses. Students are literate if they can use the Standards to describe costs and benefits, explain events, and make arguments. A principles course targeted to literacy must focus more on basic concepts than today's courses and texts do. Educational resources released by limiting the number of topics must be used to deepen student understanding of core ideas.

## Buying Behavior

The world of shopping has been changing dramatically today, from traditional markets to malls, and the introduction of electronic commerce gave customer an extended way to shop even the malls were closed (Constantinides [5], Kim and Park [6]). Competition between stores, and price war for some products which can informed directly from internet, gave customer more options where they have to buy. Buying behavior affected by internal and external factors. External factors come from the shopping environment when buyer comes into contact with particular visual stimuli (product or promotion) that create the unplanned purchase. At that instant the shopper may feel a sudden need to purchase that has attracted his/her attention (Mihi and Kursan [8]) and the atmospheres influence consumer behavioral intentions to buy or not to buy Amos, and Holmes [9]

Ruiz, and Chebat [10] said that behavior is a response or reaction to a stimulus (stimuli from the outside). Consumption behavior committed by someone or something in the field of marketing is often referred to as consumer behavior. Consumer behavior is influenced by the needs, and wants. *Stimulus-Organism-Response* (S-O-R) paradigm or Mehrabian-Russell paradigm states that stimulus (S) can be treated as a response approach or avoidance (R), with the experience of individuals in the environment (O) as a mediator. Lovelock and Wirtz [11] states that an emotional response to the environment can be described using two dimensions of pleasure and arousal. This opinion is supported by Yalch and Spangenberg [12] and Ruiz, Chebat [10] research which found that buying behavior are associated with pleasure and arousal but not dominance, because buying behavior are influenced by their environment.

## Methodology

A survey was conducted to collect the data from 226 respondents. Respondent are junior to senior high school students around Surabaya who randomly selected by accident sampling technique at their after school hours. The survey contained 11 questions with "Yes" and "No" options, to measure economic literacy and buying behavior. The survey was conducted in Indonesia Language.

## Result

Economic literacy survey was only measure economic behavioral standard. With "Yes" and "No" options respondents were asked about their buying behavior and state. The results show in table 2.

**Table 2. Survey result**

<b>Statement</b>	<b>Yes (%)</b>	<b>No (%)</b>
I had my own tablet or handphone	100	0
I am playing online gaming	100	0
I had more than one social network such facebook, Path, etc	87.61	12.39
I had monthly quota for my phone credit	46.46	53.54
<b>Economic Literacy</b>		
I had my own saving account	12.83	87.17
I am use my phone credit to pay online gaming accessories	13.27	86.73
My phone credit always over limit	97.79	2.02
My parents told me about online shopping	69.50	31.50
I am always up to date (trend)	88.50	12.50
If my friend buy "it" so do I	73.90	26.10
I am always curious to try something new (advertising)	69.50	31.50

The result found that all of the respondents own a tablet or handphone and playing online gaming. The online gaming often requesting real money from the player to keep playing the games, it is cheap but intense, so the player often spend a lot of money at the end. The result found that 13.27 of the respondents are spending the real money for the games, and they are social adolescents because they had more than one SNS.

Economic literacy survey found that almost a half of the respondents had monthly quota for phone credit, but almost all says that they are always over limit. They are curious to try on something new because they are influenced by the advertising or their peers, but they admit that they not saving for their own.

## Conclusions

Gen Z is the adolescent who are born completely within the technological age, exposure to computer and internet. At the present time, the internet is not only a networking medium, but also as a transaction medium for consumers at global market in the world, and becomes dominant retailers in the future (Musa, and Mohamad [4]). The most necessary element of e-retail offers a direct interactive channel as well as no time definition, people and place. The result found that they are facilitated by their parents to stay connected such as handphone and or tablet. They are generation who are well informed by internet. Because from the internet they can get any information they want.

The result shows that there are tendencies to irresponsible buying behavior, they admit that their phone credit are always over limit. Because they are students, they only had pocket money, so the parents are responsible of this problem. These teenagers are curious people, if they are left behind the trends, they will try to keep up. Internets make it easy to always to date. This behavior makes them doesn't have saving for their own, they not used to save money from their pocket money.

This is homework for economics educator, the literacy-targeted course always achieved by score based. The score doesn't reflect how economic literate are the student, it's only a score. Economic education objective are to educate students about economics and what should they do with their knowledge in their live. Instructors must lecture less, use active learning, and focus on problems, issues, and policies. Students must participate actively. A good place to start is for instructors to explain to students the benefits of active participation. To measure how well students have mastered the Standards requires new tests. Mastery means the ability to apply content in new situations. Setting out "what the student should be able to do" is essential and lays the groundwork

for assessment (Hansen, and Salemi [11]). While how to evaluate what students learn is an unresolved question (Walstad, and Rebeck [7]), tests and other assessment strategies should give students an incentive to learn. Learning methods developed must be able to accommodate the tendency of ways to learn at their disposal.

While this paper use survey and focus on adolescent in Surabaya, hopefully this paper stimulates interest in the topics. Future research can be discuss or find how educations should be in the students changing behavior and culture and the use of SNS to learning process. Of course there are many other things that need to be considered in the process of education of children generation Z, which essentially boils down to the educational services suitable and appropriate to empower and cultivate children generation Z, it requires awareness and attitude wise of the educators in the face of children generation.

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MATERIAL CONCEPTION, DEVELOPMENT STRATEGY AND  
CONSTRAINT IN IMPLEMENTING CIVIC EDUCATION CURRICULUM

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**ABSTRACT**

The objectives to be achieved in this research were (1) to find out the material conception level; (2) to describe the material developing strategy and (3) the constraints encountered in implementing the Civic Education curriculum. This study employed quantitative approach to collect data on the conception level of Civic Education course lecturers and qualitative approach to get information on development strategy and constraints encountered in implementing the Civic Education curriculum. The population of research consisted of 42 lecturers assuming Civic Education. The number of research sample equals to that of population, 42 lecturers. Person data source included the lecturers assuming Civic Education course. Meanwhile paper data source included textbooks and decisions existing related to civic education course material. Techniques of collecting data used were questionnaire to collect the lecturers' conception on material or study of Civic Education course and interview to collect data of development strategy and constraints existing in implementing the Civic Education curriculum. Meanwhile technique documentation was used to analyze the data source from document or Civic Education teaching book and Laws related to the course.

The result of statistic descriptive analysis with percentage showed that the lecturers' level of conception on Civic Education material was 95% very good; 5% good. The development strategies taken were 92.5% intensive and 7.5% extensive. Meanwhile, the constraints encountered in implementing curriculum were co-curricular and extracurricular activities and no civic education laboratory available, and inadequate number of lecturer. Thus the measure taken to deal with them was to organize training or Civic Education-specific course.



Keywords: Conception, development strategy, and constraints in implementing curriculum

## INTRODUCTION

Curriculum, according to Education and Culture Minister's Regulation Number 49 of 2014 about National Standard of High Education is a set of plan and regulation concerning learning gain, graduate, studying material, process and assessment used as the guidelines of study program organization. Furthermore, it is explained that National Standard of High Education consists of standard graduate competency, standard learning content, standard learning process, standard learning evaluation, standard lecturer, and education staff, standard learning infrastructure, standard learning management, and standard learning funding.<sup>1</sup>

Curriculum in Indonesia's national education system gets serious attention and should meet the public's demand, address nation challenge and prepare the generation for solving the nation problem and achieve wellbeing and prosperity. The material of Civic Education course is a part of curriculum, and even some people considers material as an important thing. Teaching material consists of fact, concept, generalization, skill and attitude existing in teaching material. Civic Education teaching material comprises of knowledge (cognitive), attitude (affective) and skill (psychomotor). Teaching material can be both theoretical or education material; to change theoretical material into education material, some points should be taken into account: significance, social need, use, interest, development, and structure of science.<sup>2</sup>

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<sup>1</sup> This study focused only on learning content or material study of Civic Education course as the part of standard national of High Education.

<sup>2</sup> Hassan Suryono , Winarno and Muh Muhtarom, 2014.*Pendidikan pancasila berbasis riset untuk mahasiswa panduan praktis pembelajaran di Perguruan Tinggi* . Surakarta : UNS Presss.pp. 3-4

Material content of Civic Education used as the course guideline based on Directorate General of High Education's Decree No. 43/Dikti/2006 about the Guidelines of Implementation of Personality Development Course group in College largely consists of a. Pancasila philosophy, b. national identity, c. Politic and strategy, d. Indonesian Democracy, e. Human rights and *Rule of Law*, f. citizen's right and obligation, g. Indonesian geopolitics, and h. Indonesian Geostrategy.<sup>3</sup>

Curriculum, in this case the substance of study, as mentioned in the Decree, should be replaced or reconstructed when it has been enacted for 5 years to be adjusted with Science and Technology development and marketplace's demand. Considering such the stipulation, it is time or even too late to change, to replace or to reconstruct the substance of civic education course. To change, to replace or to reconstruct a substance of course study, there should be a study and analysis on which substance should be replaced and changed or reconstructed, either intensively or extensively.

For the students to conceive and implement the reconstructed material there should be human resources with professional, pedagogic, personality, and social competencies. The required qualification for the lecturers of personality development course, particularly Civic Education course, was that the lecturers should have National Tenacity Magister certificate, and Social Science Education, Social, Cultural, Philosophical, and Law Sciences Magister that receives Civic Education-specific training.<sup>4</sup> In Sebelas Maret University, all of the 42 lecturers assuming Civic Education course have had postgraduate (S2) qualification.

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<sup>3</sup>. Opcit ; pp. 3 - 4

<sup>4</sup> Article 10 clause 2a of High Education Directorate General of Republic of Indonesia National Education Department's Decree Number 43/Dikti/Kep/2006 about about the Guidelines of Implementation of Personality Development Course group in College, p.6. Article 10 clause 2b seems to be no longer relevant to National Education Standard because S1 (graduate) can still teach in college.

Education and Cultural Minister's Regulation Number 49 of 2014 about Standard National of High Education confirms that the development, organization and evaluation of curriculum refers to eight National Standards of High Education: graduate competency, learning content, learning process, learning evaluation, lecturer and education staff, infrastructure, learning management, and learning funding.<sup>5</sup> The developed curriculum should be implemented immediately with any existing support. To organize a program in this case implementing (organizing) curriculum successfully, human resources (lecturers), adequate infrastructure and fund are required.

Considering the statement in this introduction section, the problems of research are: (1) in what extent the lectures of Civic Education conceive the material of Civic Education, (2) what strategies they take to develop the material of Civic Education learning, and (3) what constraints existing in implementing the curriculum of Civic Education.

## **METHOD**

This study employed quantitative approach to collect data about the lecturers of Civic Education course's conception and then qualitative one to get information on development strategy and constraints in implementing the curriculum of Civic Education. The population was all of group members, events, or objects formulated well.<sup>6</sup> Considering this, the population and the sample of research all at once were 42 lecturers assuming Civic Education course.

The data source was the subject from which the identifiable data is obtained.<sup>7</sup> Person data source included the lecturers assuming Civic Education

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<sup>5</sup> Article 4 of Education and Culture Minister's Regulation Number 49 of 2014 about Standard National of High Education.

<sup>6</sup> Donald Ary; Lucy Chesar Jacobs, Asyar Razaviez, 1982. *Introduction to research in education*, Nothem Illionis University. p.189

<sup>7</sup> Suharsimi Arikunto, 1998. *Prosedur penelitian suatu pendekatan praktek*. Jakarta : Reneka cipta, p. 114

course. Meanwhile paper data source included textbooks and decisions existing related to civic education course material. Techniques of collecting data used were questionnaire to collect the lecturers' conception on material or study of Civic Education course and interview to collect data of development strategy and constraints existing in implementing the Civic Education curriculum. Meanwhile technique documentation was used to analyze the data source from document or Civic Education teaching book and Laws related to the course. Each of those techniques will be completed with its instruments i.e. questionnaire with its question list, interview guide, and document analysis guidelines.

The analysis was carried out using statistic descriptive analysis with percentage to explain the lecturers' conception on material of Civic Education course. In addition to quantitative approach, this study also employed qualitative approach to explain development strategy and constraint in implementing curriculum, particularly study or material.

## **RESULT**

The result of current research will explain the lecturers' conception on the material of Civic Education; describe the material developing strategy and the constraints encountered in implementing the curriculum of Civic Education course.

The Civic Education assuming lecturers' evaluation on curriculum condition referred to national standard of high education including standard graduate competency of 91% very good, 7% good, and 2% fair. The standard learning content was 81% very good, 14% good and 5% fair. Standard learning process was 87% very good, 4% good and 9% fair. Standard learning evaluation was 92% very good, 4% good and 4% fair. Standard lecturers and education staff was 85% very good, 3% good and 12% fair. Standard learning infrastructure was 82% very good, 7% good and 11% fair. Standard learning management was 93% very good and 7% good. Standard learning funding was 89% very good and 11% good.

The result of statistic descriptive analysis with percentage showed that the lecturers' level of conception on Civic Education material was 95% very good; 5% good. The development strategies taken were 92.5% intensive and 7.5% extensive. Meanwhile, the constraints encountered in implementing curriculum were co-curricular and extracurricular activities and no civic education laboratory available, and inadequate number of lecturer. Thus the measure taken to deal with them was to organize training or Civic Education-specific course.

## **DISCUSSION**

Considering the result of research in the focus of current research problem can be discussed in piecemeal as follows:

1. The most (95% or 39 out of 42) lecturers have very good conception on material of Civic Education. Meanwhile other 5% (3 out of 42 lecturers) have good conception. The factors leading the lecturers to have very good conception are: (a) in recruitment process, the prospect lecturers of Civic Education should have education background relevant to Civic Education science, i.e. those coming from Civic Education, Legal Science, and Political Science study program. The background of education is relevant to Civic Education material enables the lecturers to have sufficient competencies to master Civic Education. Moreover they are supported with their positive attitude to the course enabling them to undertake their duty professionally as the lecturer of Civic Education. (b) The availability of Civic Education training/course/briefing before the course starts every semester. This intensive training increases their clear and accurate insight on Civic Education science concerning the substance of Civic Education. In this training, interaction and discussion occur between the lecturers assuming Civic Education thereby increasing their vocabulary of Civic Education materials.
2. The development strategies were taken intensively (92.5%) and extensively (7,5%). Most lecturers make intensive development by means of nullifying the studies irrelevant to Civic Education competency, for example Pancasila Philosophy with Pancasila sub-substance as the philosophical system and

Pancasila as nation and state ideology are removed from Civic Education study, whereas according to the Director General of High Education of RI National Education Department's Decree No.43/Dikti/Kep/2006, Pancasila Philosophy is included into Civic Education study. 39 out of 42 lecturers (95%) asprate this opinion. Thus, Civic Education study consists of (a) national identity, (b) politics and strategy, (c) Indonesian Democracy, (d) human rights and rule of law, (e) citizen's right and obligation, (f) Indonesian geopolitics and (g) Indonesian geostrategy.<sup>8</sup> Meanwhile, 3 (7.5%) lecturers require the expansion of Civic Education study, by means of increasing the substance of archipelago insight and national tenacity study in various ideological, economic, social, cultural, and political aspects.

3. The constraints encountered in implementing Civic Education curriculum include co-curricular and extracurricular activities resulting from no civic education laboratory available, and inadequate number of lecturer. The Article 35 clause (4) of the Republic of Indonesia's Law Number 12 of 2012 about High Education states that curriculum, including Civic Education, is undertaken through curricular, co-curricular and extracurricular activities. Most co-curricular and extracurricular activities have not been implemented because of limited number of lectures and large workload of Civic Education lecturers. It is because the Civic Education lecturers, in addition to having main duty in their own study program, can also help the duty in General Course Development and Management Center. The stock of Civic Education lecturers is limited because their recruitment use specified standard or qualification and P3MKU has not have specialized permanent lecturers who occupy in the protecting institution, Education Quality Development and Guaranty Institution (LPPMP).

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<sup>8</sup>. Consistent with the substance of study according to Director General of High Education of RI National Education Department's Decree No.43/Dikti/Kep/2006 without Pancasila Philosophy.

## CONCLUSION

Considering the description and study on the general course material, it can be concluded that (1) the lecturers' level of conception on Civic Education material was 95% very good; 5% good, (2) the development strategies taken were 92.5% intensive and 7.5% extensive, and (3), the constraints encountered in implementing curriculum were co-curricular and extracurricular activities.

## RECOMMENDATION

Considering the conclusion of research, the following recommendations can be given. (1) The Civic Education lecturers' very good conception ability can be used as an effective resource to develop a new Civic Education curriculum with National Standard of High Education and Indonesian National Qualification Frame. (2) Archipelago Insight and National Tenacity should be included into Civic Education study by involving student, lecture, stakeholders, and department/Faculty components. And (3) the lecturers of Civic Education should conduct co-curricular and extracurricular activities in a programmed Civic Education course and not independent of curricular activities.

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Tinggi*



# **TALKING STICK LEARNING MODEL AS THE EFFORT TO INCREASE THE ABILITY OF WORKING TOGETHER FOR THE STUDENT OF OFFICE ADMINISTRATION EDUCATION ON THE SECRETARIAL SUBJECT**

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## **ABSTRACT**

The importance of working together ability for the student of Office Administration Education Study Program 2013 B on the secretarial subject is needed to train them in speaking, create an interesting condition and make the students active in doing learning activities in the class. This research uses *talking stick* learning model which is used to describe learning activities and the increase of student's working together ability through applying *talking stick* learning model. This research is Classroom Action Research using four steps: planning, action, observation, and reflection which are done for three cycles. The instrument used in this research is observation sheet of student's learning activities and observation sheet of student's working together ability. The result of this research shows that the student's activities in the cycle I got the average value of 2,5 (not really good), in the cycle II the average value is 3,25 (good), and in the cycle III the result is 3,58 (good). While the student's working together ability in the cycle I get the average value of 2,10 (not really good), in the cycle II the result is 2,79 (good) and the cycle III the result is 3,57 (good).

*Keywords: Talking Stick Learning Model, Working Together Ability*

## **Preface**

In learning activity, the lecturer should often make interaction among the students in order to create learning process which is communicative and interesting. Interacting with the students will help them to train their communication, make them active, and it can increase their working together ability. This is appropriate with Isjoni's opinion (2009) which says that students who work together in a group will create a close friendship among the students and it influences on their behavior or their own activities. With working together, students can develop their knowledge, ability, and skill in open ended and democratic learning.

Secretarial subject is an obligatory subject which must be taken by the students of Office Administration Education Study Program. This subject makes the students able to do interaction and working together in the class. However, the effort of increasing the ability of student's working together is not easy. It can be seen from their less active, less working together, and interaction among the students of Office Administration Education Study Program 2013 B on learning process in the class. For this reason, it is needed a learning model which is interactive and communicative. *Talking stick* learning model is the suitable learning model which is used on the secretarial subject to increase the student's working together ability.

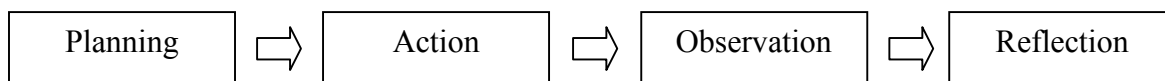
*Talking stick* is a method which is first used by the American native to invite everyone talking or telling their opinion in a forum (meeting among the ethnic), as what carol locust said, *Talking Stick* has been used for centuries by Indian ethnics as a tool for doing scrutinize fairly and not taking sides. *Talking Stick* is often used in the council circle to decide who has right to talk. In the time the leader of meeting start to discuss the problem, he must hold the talking stick. The stick will move to other people if they want to talk or perceive. By this way, the talking stick will move from one to another if the one wants to show their opinion, the talking stick learning model is a learning model which used a stick as the learning media. The teacher gives the stick to one of the students and the student who holds the stick must answer the question given by the teacher after the student studied the matter. The talking stick learning model can make the students charming, happy, and train their mental to be ready for whatever situation and condition. This is as what Widayatun (2012) said about the excess of talking stick learning model: 1) examine the student's readiness, 2) train reading and understanding fast, 3) in order to be more diligent in studying. Ramadhan (2010)

also explained about the syntax in Talking stick learning model: 1) teacher make a group consists of 5 students; 2) teacher prepares a stick 20 cm length; 3) teacher conveys the main matter will be learnt, then gives opportunity for the group to read and study about the matter; 4) students discuss about the problem in the text; 5) after the group finish reading the matter and study about it, teacher pleases the members of the group to close the reading; 6) teacher takes the stick and gives it to one of the members in the group, then teacher gives a question and the member of the group which hold the stick must answer the question, and so on until almost the students get chance to answer every question from the teacher; 7) other students may help to answer the question if the member of the group can't answer the question; 8) teacher gives conclusion; 9) teacher does evaluation or assessment, both group and individual; 10) teacher closes the lesson.

The purpose of this research is to describe: 1) learning activities of Office Administration Education Study Program student 2013 B in applying *talking stick* learning model on secretarial subject, 2) raising the ability in working together of Office Administration Education Study Program student 2013 B through applying *talking stick* learning model on secretarial subject.

**Research Plan**

This research is Classroom Action Research using four cycles: 1) planning, 2) action, 3) observation, 4) reflection which is done in three cycles. The model of the implementation of Classroom Action research according to Arikunto (2006) can be shown as following:



**Picture 1. Model of The Implementation of Classroom Action Research**  
Source: Arikunto (2006)

**Subject and Object of The Research**

The subject of this research is the students of Office Administration Education Study Program 2013 B. There are 39 students. While the object of this research is the raising student's ability in working together on secretarial subject in the basic competence Analyzing the space area of secretary and Analyzing the time management.

**Research Instrument**

Instrument which is used in this classroom action research are:

1. Sheet of Student's Learning Activities

**Table 1. Sheet of Student's Learning Activities**

No.	Indicator of students learning activities	Assesment
1.	Students make group consists of 5 students	1. Not really good 2. Enough 3. Good 4. Very good
2.	Students read and understand the main matter	
3.	Students discuss about the problem in the text	
4.	Students answer the questions given by the lecturer	
5.	Students from other group help to answer the question	
6.	Students make conclusion	

2. Sheet of Student's Working Together Ability

**Table 2. Sheet of Student's Working Together Ability**

No.	Observed Aspect	Assesment
1.	Sharing the duties	1. Not really good 2. Enough 3. Good 4. Very good
2.	Willing to get responsibility	
3.	Pay attention on what is done by other students	
4.	Support every member to stay working together	
5.	Asking opinion in other people	

6.	Finishing the duty on time	
7.	Skillful in arranging and organizing	
8.	Checking the accuracy	
9.	Working together	

### Data Analyze

Data analyze which is used in this research is analyze of student's learning activities and student's ability in working together. The assessment of observation sheet on student's learning activities and student's ability in working together is value 1-4 with the criteria: 1) value 1 is for not really good criteria, 2) value 2 is for enough, 3) value 3 is for good, 4) value 4 is for very good (Iskandar 2009). The obtained data is analyzed by calculating the average of every aspect from many meetings done. Then the average, according to Kunandar (2008) is conversed with the criteria: 1) 1,00 – 1,50 (not good); 2) 1,60 – 2,50 (not really good); 3) 2,60 – 3,50 (good); 4) 3,60 – 4,00 (very good).

### Result of The Research and The Discussion

1. Cycle I, the implementation of the learning is as following:

a. Planning

In planning activity, the thing that need to be prepared is Satuan Acara Perkuliahan (SAP), the material explains the position of secretary in an organization and the qualification of organization secretary, the observation sheet of student's learning activity and observation sheet of student's ability in working together.

b. Action

Action activity consists of the beginning activity, the main activity and the finishing activity. The beginning activity is the lecturer comes to the class and greets the students; the lecturer checks the presence of students; the lecturer makes the students ready to get the material; and the lecturer also explains the procedure by using talking stick learning model with the purpose of the learning model. The main activity is started by the lecturer gives few apperception about the previous material; the lecturer divides students into some groups that consists of 5 students; the lecturer prepares a stick 20 cm length; the lecturer gives hand out and delivers the introductory material about the position of secretary in organization and explains the qualification of organization secretary; the lecturer gives opportunity to each group reading and learning the material; the students are asked to discuss the problem in material; the lecturer takes the stick and gives it to one of group member and the lecturer gives questions to the groups that hold the stick; the other group may help to answer the question which can't be answered. The last activity, the students and lecturer give conclusion about the material learnt. The lecturer evaluates both group and individual and closes the class by salam.

c. Observation

In observation activity, student's learning activity in learning activity cycle I the students get an average value of 2,5 with not really good criteria. It can be seen from the aspect of students who do not understand the break-out groups, the students discuss the problem in the material, the students answer the questions given by the lecturer, the other groups help to answer the questions, and the students give conclusion. While the ability to cooperate on the cycle I students scored an average of 2,10 with not really good criteria

d. Reflection

Reflection activity is done to know the shortcomings that must be fixed in the second cycle, those are: 1) the lecturer has to condition the students so that the students can be more ready in receiving material and divide their own groups; 2) the lecturer has to motivates the students more so that the students can be active in discussing and answering the questions given by the lecturer; 3) the lecturer has to motivates the students to be active in concluding the material.

2. Cycle II the implementation of the learning is as following:

a. Planning

In the planning activity, lecturer does remedial in cycle II as following: 1) lecturer must be able to condition the students in order to be more ready in receiving the lesson so the students can divide their groups by themselves, 2) lecturer must be able to motivate the students in order to be more active in discussing and answering the question given by lecturer, 3) lecturer must be able to motivate students to be active in concluding the matter in the class. Lecturer also prepares SAP the matter will be taught that is analyze the duties of secretary and explain the effectiveness and the efficiency, sheet of student's learning activities and student's ability in working together.

b. Action

Action activity consists of three activities: beginning activities, main activities, finishing activities. Beginning activities is done by the lecturer gives salam and presence the students; lecturer conditions the students in order to be ready in receiving the matter using talking stick learning model; main activity is started by the lecturer gives apperception about the previous lesson; lecturer divide the students into 5 students; lecturer prepares the stick 20 cm length; and gives hand out to the students; then the lecturer gives preface about the matter analyzing the duties of secretary and explains efficiency and effectiveness; lecturer gives chance to each group to read and study about the lesson; students are asked to discuss the problem in the text; lecturer takes the stick and gives it to the one of the member in the group and gives question the student who hold the stick; the students from other group may help to answer the question which can't be answered. Finishing activity, students and lecturer gives conclusion; lecturer does evaluation both group and individual. Lecturer closes the lesson by salam.

c. Observation

In observation activity, student's learning activity in cycle II derived average value 3,25 with the criteria good. This can be seen from the aspect that the students from other group help to answer the question. While in the ability of working together in cycle II derived average value 2,79 with the criteria good.

d. Reflection

In reflection activity, it is found the lacks which must be corrected in the cycle III, those are: lecturer must guide and motivate students to be able to give belief in working together with other students.

3. Cycle III the implementation of the learning is as following:

a. Planning

In the planning activity, lecturer prepares the remedial planning on cycle III, that is the lecturer must be able to guide and motivate students in order to be able to give belief in working together with other students. In planning activity, lecturer prepares SAP, the matter will be taught is explaining the things influence the efficiency of working and analyze working professionally, sheet of student's learning activities and sheet of student's ability.

b. Action

Action activity consists of beginning activity, main activity and finishing activity. Beginning activity starts with the lecturer comes to the class and gives greeting; lecturer presence the students and conditioned the students; lecturer explains the procedure using talking stick learning model. The lecturer gives apperception about the last matter; lecturer divides the students into 5 students and gives hand out of the lesson; lecturer prepares the stick 20 cm length; lecturer gives preface about the matter , explains things influence the efficiency of working and analyze working professionally; lecturer gives chance to each group to read and understand the matter; students are asked to discuss about the matter in the text; lecturer takes the stick and gives it to on of the member of the group and gives question to the member who holds the stick; students of the other groups may help to answer the question which can't be answered. While in the finishing activity, students and lecturer gives conclusion about the

matter. Lecturer does evaluation both group and individual and close the lesson. Lecturer says greeting and leave the class.

c. Observation

In observation activity, student's learning activity in the cycle III derived average value 3,58 with a good criteria. While in ability of working together in cycle III derived average value 3,57 with a good criteria.

d. Reflection

In the reflection activity in cycle III, there is a rising in student's learning activity and student's ability in working together using talking stick learning model, so the learning activities in the cycle III is done.

## Conclusion

Talking stick learning model can increase the student's learning activities and the student's ability in working together the students of Office Administration Education Study Program 2013 B. This can be seen according to the result of the observation of student's learning activities in the cycle I, the average value is 2,5 (not really good), the cycle II is 3,25 (good), the cycle III is 3,58 (good) also the result of the observation of student's ability in working together in the cycle I the average value is 2,10 (not really good), the cycle II is 2,79 (good), the cycle III is 3,57 (good). According to those results, we know that talking stick learning model can be used as the reference as the effort in increasing the ability in working together students of Office Administration Education Study Program 2013 B.

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# Surabaya Hinterland Area Development In Asean Economic Community

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Sustainable development, economic independence, as well as increased competitiveness has become a priority agenda of the government. It is embodied in *Nawa Cita* government programs contained in the document Medium Term Development Plan (RPJMN) 2015-2019. The purpose of this study was to analyze the potential of agricultural sector and analyze models of improving the competitiveness of the agricultural sector in the hinterland of Surabaya. The results of the combination of overlay analysis and shift share indicates that Gresik potential in fisheries sub-sector with a model of development in the fisheries sub-sector, Lamongan potential in fisheries sub-sector and sub-sector agricultural development model in the sub sectors of forestry and fisheries, Sidoarjo regency potential sub the fisheries sector with the development model in the fisheries sub-sector, Mojokerto regency potential in the sub-sector perikananandan agricultural sub-sector, but the development model that is appropriate is the plantation sub-sector, Pasuruan and Bangkalan potential in the agricultural sector with the development model of the sub-sectors of the food crops while Mojokerto and Pasuruan not have the potential sub-sector but appropriate development model that is based blue economy in the fisheries sub-sector

*Keywords: Agriculture, Competitiveness, Overlay*

## I. Introduction

Surabaya's success as a center of economy due to the existence of Surabaya hinterland region. However, most of its hinterland region excluding a region that has economic competitiveness such as Surabaya. Acquisition of GDP hinterland areas such as Mojokerto and Surabaya, Pasuruan only the range of 1.3 trillion. Mojokerto district, Lamongan district, Pasuruan, and Bangkalan the range of Rp. 3-7 trillion. The most notable was the acquisition of GDP in Sidoarjo regency which reached 26 trillion and Gresik which reached 17 trillion (East Java BPS, 2012). If the hinterland area of Surabaya do not have a uniform competitiveness, will lead to economic disparities. Regions such as the hinterland of Surabaya and Sidoarjo Regency Gresik in contributing to the GDP is still largely dominated by secondary sectors such as the manufacturing sector. While the agricultural sector into one of the bases of sustainable development of economic sectors have not been developed to the maximum. Though many people still rely on agriculture as the main occupation. BPS data Jawa Timur (2012) in the month of August there were 115 400 inhabitants in Mojokerto, 49 861 inhabitants in the district of Sidoarjo, 233 480 people in Pasuruan, 277 321 people in Bangkalan, 89 919 people in Gresik, 289 009 people in Lamongan, 14 842 inhabitants in Mojokerto and 4,769 souls in Pasuruan who will lose their jobs if the agricultural sector in the hinterland replaced with other sectors.

In general, the agricultural sector in the hinterland of Surabaya can be developed using the approach of increasing production and economic competitiveness. Development of increased production and competitiveness can be done by determining the agricultural sub-sector with a competitive advantage. If the agricultural sub-sector has a comparative advantage is well developed, will increase employment in the agricultural sub-sectors. The purpose of this research is to analyze the agricultural sector in the hinterland of Surabaya potentially enhanced competitiveness. To analyze the increasing competitiveness of the agricultural sector in the hinterland of Surabaya.

## II. Literature review

Economic base theory (economic base theory) basing its view that the pace of economic growth of a region is determined by the magnitude of the increase in exports from the region (Tarigan, 2006). Economic activities are grouped on the basis of activities and the activities of non-base. The basic sector is an economic sector that can export goods and services outside the region's economy. While the base is non sector or activity sector goods and services needed by the community. Only the basis of activities that can encourage economic growth in the region. Activity base has a role as a prime mover (primary mover) in the growth of a region. The greater exports of an area to another will further advance the growth of the region, and vice versa. More and more sectors of the base in an area will increase revenue flows to the region, increasing the demand for goods and services in it, and give rise to increase in the volume of the non bases (Adisasmita, 2005).

The economic potential of the region is the ability of the economy in the area is possible and feasible to be developed so that it will continue to be a source of life of local people can even encourage the regional economy as a whole to grow by itself and berkesimambungan (Suparmoko, 2002). Potential sectors/seed should have the advantage, that comparatively superior and competitively superior.

Area have the opportunity to develop its resources by utilizing the existing workforce, including from outside the region in order to increase export opportunities. Further in its analysis, the theory of economic base is usually used data of GRDP to identify and determine the potential sectors. If the potential of the sector is well developed will have a significant impact on regional economic growth, which in turn can generate income optimally (Riadi, 2008). Economic growth in an area can be measured by using a picture of the relationship between the region's economy with the surrounding environment as the sector that supports economic growth in the region is concerned, among other uses: Analysis Location Quotiente (LQ), Shift Share Analysis, Analysis of Growth Ratio Model (MRP), Analysis Overlay.Regional.

Comparative Advantage the economic potential of the region can be determined by identifying the strengths and weaknesses of various economic sectors and sub-sectors in the region. The comparative advantages of a commodity for a country or region means the commodity is superior relative to other commodities in the region. Understanding excel in this case is in the form of comparison and is not in the form of value-added riel. If the lead is in the form of value-added riel then referred to as an absolute advantage. Commodity which has the advantage, although only in the form of comparison, prefers to be developed compared with other commodities that are both produced by the two countries or regions (Tarigan, 2006).

In the analysis of regional economic, competitive advantage is defined as the ability of the competitiveness of the economic activity of a region of the same economic activity in other areas. Regional competitiveness is a potential strategy to be implemented in the district in order to improve the welfare of local communities. Decentralization in the management of economic sectors submitted to the Local Government and the gap between regions is uneven economic performance may also lead to the emergence of the concept of regional competitiveness.

## III. Methodology

This type of research in this research that uses a mathematical approach to regional economic analysis tools. The selected research locations in the whole area of research is the hinterland of Surabaya. Hinterland region is a region synergistically intertwined with areas of the city and serves as an area of production that could be supply for other regions (Suwarni, 2011). According to the Chamber of Commerce and Industry Surabaya (2013), belonging to the hinterland area of Surabaya include the following Gresik, Lamongan district, Sidoarjo district, Mojokerto, Pasuruan, Bangkalan, Mojokerto and Pasuruan.

Analysis of location quotient (LQ) is used to identify and formulate the composition as well as a shift in the sectors of an area basis using the Gross Regional Domestic Product (GDP) as an indicator of growth in the region (Adisasmita, 2005). Shift share analysis is an analysis that aims to determine the performance or productivity of the region's economy by comparing it to a larger area (regional or national). Shift share analysis have analytical techniques sharper than LQ analysis because it provides an explanation for the factors that cause changes on some variables (Tarigan, 2006). Analysis of Growth Ratio Model (MRP) is an activity to compare the growth of a good activity in a smaller scale and in a larger scale (Riadi, 2008). Overlay analysis is a technique that can be used to determine the description of a potential agricultural sub-sector in the study area by combining the results of the analysis of LQ with MRP analysis. So this analysis consists of three component that location quotient (LQ), the ratio of growth in the reference region (RPR) and the ratio of growth in the study area (RPs).

#### **IV. Result and Analysis**

The result using overlay analysis on the agricultural sub-sector GDP Gresik get the result that there is only one sub-sector in agriculture in Gresik which has the potential to be developed that fisheries sub-sector. Fisheries sub-sector has the potential to be developed on based economy. Fisheries sub-sector based overlay analysis included in the first classification, that has value growth ratio studies (RPs) and positive values quotiente location (LQ) is positive. RPs value positive, meaning that the fisheries sub-sector has a more prominent growth in Gresik than the rate of growth in East Java Province. LQ positive value, meaning the fisheries sub-sector has the highest contribution to the GDP formation agricultural sub-sector in Gresik. Overlay analysis results in Gresik which states that there is a sub-sector of the agricultural sub-sector or sub-sector basis proven superior to the value of  $LQ > 1$ , that is equal to 3.55. It was in accordance with the theory of location analysis quotiente (Tarigan, 2006) which states that if the value of  $LQ > 1$  means that the role of the sub-sector in the region is more prominent than the role of the national sub-sector. Often as an indication that the region will be a surplus of certain sub-sector products and export them to other regions. Previous research conducted by Husna (2010) states that if the agricultural sector, especially marine and fisheries sub-sector is the next sector to which the priority program. Combination calculation results between overlay and shift share analysis is used to determine the appropriate development model for Gresik that the agricultural sub-sector can be developed based blue economy or the green economy.

Fisheries sub-sector is the dominant sector sub and became the basis of the economy in Gresik. The sub-sector has a surplus of growth and specializes in fast-growing sub-sector. Moreover Gresik is one of the district's rich marine wealth as nearly a third of Gresik region is an area of the coast. That is, geographically Gresik has a locational advantage and abundant natural resources. Locational advantage in one area can make the region has a comparative advantage. Theory of comparative advantage states that the region has a comparative advantage (comparative advantage) because of one factor or a combination of several factors (Tarigan, 2006). Some fisheries sub-sector products which can be developed and able to be a small industrial raw materials household Gresik society, namely milkfish and shrimp. Milkfish and shrimp for export outside the region Gresik derived from inland fisheries potential to do good aquaculture using brackish water or fresh water.

The result using overlay analysis on the agricultural sub-sector GDP Lamongan get the result that there are three sub-sectors in agriculture in Lamongan which has the potential to be developed include plantation sub-sector, forestry and fisheries. Plantation sub-sector and forestry-based economy has the potential to be developed on a green economy while the fisheries sub-sector has the potential to be developed in the fisheries sub-sector based economy. Putra previous studies conducted in the District and the City of Yogyakarta and found the results were worth + MRP calculation. Thus the sector has the potential competitive and comparative competitiveness in Sleman are superior to the same activity at the level of DIY (Putra, 2013). Both



analyzes both LQ and MRP showed positive numbers so that the agricultural sub-sector can be developed based sub-sectors of agriculture and fisheries sub-sector.

The result using overlay analysis and shift share analysis shows the model of development that fits on the agricultural sub-sector sub-sectors, namely forestry and fisheries sub-sector. Type commodities fisheries sub-sector being excellent fishery commodity that results in aquaculture which generate milkfish and crab. In addition there are marine fishery products are tuna into high value commodities. There are also the result of fisheries in river-fish sili high value when processed into typical food Lamongan. Commodities forestry sub-sector can be developed that is the result of teak planted along the forest in Lamongan. Based on the Ministry of Maritime Affairs and Fisheries (2012), explains that the development of marine and fisheries have a lot of strategic value. It was obtained from Lamongan locational advantage as coastal areas and resource-rich land, marine resources and geographically corresponding weeks to the development of the forestry sector, so the potential for the development of blue economy and green economy. If the sub-sector is retained, it will generate a huge contribution to the GDP Lamongan. The development of the forestry sub-sector is done by protecting and restoring biodiversity and natural habitats as an integral part of development and human welfare. Additionally done innovations both biologically and chemically. Biologically with the use of quality seeds and chemical innovations carried out with the use of artificial fertilizers, pesticides, insecticides and others that do not damage the environment (Sunoto, 2013).

The result using overlay analysis on the agricultural sub-sector GDP Sidoarjo regency get the result that there is a sub-sector in agriculture in Sidoarjo the potential to be developed that fisheries sub-sector. Fisheries sub-sector has the potential to be developed on a fishery-based economy. Previous research conducted by Riadi prove if a sub-sector is stated to have the advantage means there is great potential in the sub-sector is because of a variety of analysis tools used showed that the sub-sector of the economy has a comparative advantage, competitive advantage, specialization and Also have the ratio of god growth when Compared to the national economy (Riadi, 2008). The development of appropriate models to be applied in Sidoarjo is based on the development of fisheries by developing the fisheries sub-sector just to increase its contribution to GDP Sidoarjo. Results of the fisheries sub-sector and high-value export commodities in Sidoarjo that aquaculture can produce milkfish and shrimp. It also catches the sea in the form of mussel. Not surprisingly, all the way Sidoarjo many domestic industries that offer typical food Sidoarjo either presto milkfish, shrimp crackers and petis. The existence of the industrial sector in Sidoarjo can also be utilized for the development of fisheries-based blue economy is to promote fish feed industry to reduce the supply of feed from outside the area that the production cost can be reduced.

The result using overlay analysis on the agricultural sub-sector GDP Mojokerto get the result that there are two sub-sectors in agriculture in Mojokerto regency has the potential to be developed include plantation sub-sector and fisheries. Plantation sub-sector has the potential to be developed on a green economy based economy while the fisheries sub-sector has the potential to be developed on a fishery-based economy. According Arsyad (1999) in Riadi (2008), stated that the main determinants of economic growth in an area directly related to the demand for goods and services from outside the area. The growth of industries that use local resources, including labor and raw materials to be exported will generate local wealth and create employment opportunities. The calculation result combinations overlay and shift share analysis shows in Mojokerto regency has a comparative advantage and competitive if specialized for producing plantation sub-sector. That is in addition to developing the fisheries sub-sector, Mojokerto also be to develop an economy based on agriculture.

Plantation sub-sector that is able to make value added for Mojokerto is sugarcane, crops, cloves, durian and dragon fruit. While the fisheries sub-sector the main commodity in Mojokerto namely freshwater fish farming in the form of catfish, carp, and catfish. Treatment in taking the plantation crop is currently not degrade public utility obtained all the time and consumption has not decreased (Sunoto, 2013). Thus making these resources remain in the limits of reasonableness. Use natural resources more efficiently and does not damage the environment by the production system

more efficient without damaging the environment. It was able to produce value-added products and greater economy in GDP Mojokerto.

The result using overlay analysis on the agricultural sub-sector GDP Pasuruan get the result that there is only one sub-sector in agriculture in Pasuruan potential to be developed, namely sub-sectors of the food crops. Food crops sub-sector has the potential to be developed in the agriculture-based economy. Overlay analysis result of a combination of calculation and shift share in Pasuruan shows that there is a sub-sector of agriculture is able to deliver maximum added value when received special attention from the Government of Pasuruan that the food crops sub-sector. That is Pasuruan has a comparative advantage and competitive when specialized to produce the food crops sub-sector alone. Pasuruan so it is better to develop agriculture-based economy. Food crops sub-sector potential value in Pasuruan, namely rice and corn. Model of development that the food crops sub-sector both in Pasuruan in order to be excellent namely the development of a green economy through agricultural development involving absolute terms. According Arsyad (1992) in the theory of economic development of the region mention a few terms that absolutely must be done to keep developing the sub-sector of food crops, among others, there is a market to create demand, the technology, the availability of tools and materials production, the existence of stimulating the production and availability of carrier agricultural products are cheap and efficient.

The result using overlay analysis on the agricultural sub-sector GDP Bangkalan show that Bangkalan potential in the food crops sub-sector. Food crops sub-sector has the potential to be developed on a green economy based economy. Commodity which has the advantage, although only in the form of comparison, prefers to be developed compared with other commodities that are both produced by the two countries or regions (Tarigan, 2006). Results of calculation combination of overlay analysis and shift share in Bangkalan not vary much with the analysis in Pasuruan. There is one sub-sector of agriculture which if developed could generate maximum added value compared to other sectors when developing sub namely food crops sub-sector with specialization in crops of corn and beans. That is Bangkalan has a comparative advantage and competitive when specialized to produce the food crops sub-sector based on agriculture.

The result using overlay analysis on the agricultural sub-sector GDP Mojokerto obtain results that none of the sub-sectors in agriculture that have the potential to be developed well based fisheries and agriculture. Mojokerto not have sub-sector seed farms to be developed in the fisheries and agriculture-based economy, it is necessary the action of the local city government to not only spur other sub deposited but left the agricultural sub-sector. The city government should have guidelines that serve as a reference in preparing the development strategy of the potential that exists in the area (Mangun, 2007). Based on the analysis and shift share overlay obtained, Mojokerto not have specialized seed sub-sector of agriculture. It can be seen from the overlay analysis, none of which included in the sub-sector for the development of fisheries and fisheries. Likewise, shift share analysis results which showed only a sub-sector of livestock and fisheries sub-sector who have positive value both at national share calculation, proportional share or diffenential shift. So that the development model that fits in Mojokerto in order to realize the agriculture-based economy that is just to produce more specialized fisheries sub-sector. Fisheries sub-sector are well developed in Mojokerto namely freshwater aquaculture fish such as catfish, catfish, carp and tilapia.

The result using overlay analysis on the agricultural sub-sector GDP Pasuruan obtain results that none of the sub-sectors in agriculture that have the potential to be developed well based fisheries and agriculture. So that the local municipal government action is needed to not only spur other sub deposited but left the agricultural sub-sector. The city government should have guidelines that serve as a reference in preparing the development strategy of the potential that exists in the area (Mangun, 2007), among others: (a) Identify the sectors of activity which has the potential to be developed. (b) Identify sectors a low potential to be developed as well as the search for the factors that cause the low potential of the sector to be developed. (c) Identify the resources (factors of production) that is including human resources to be deployed to support the development of each sector concerned. (d) With the model of weighted variables - variables strengths and weaknesses, will be found as the mainstay sectors of economic potential that should be developed in the area

concerned. e) Determine the strategy to be adopted for the development of the mainstay sectors that are expected to attract other sectors to grow so that the economy will be able to grow by itself on an ongoing basis.

Based on the analysis and shift share overlay obtained, Pasuruan do not have the agricultural sub-sector that is able to contribute greater than the contribution rate of East Java. But there is a sub sector into sub-sectors agricultural seed sub-sector, namely forestry and fisheries sub-sector. No doubt if each district / city Surabaya hinterland region has a wealth of natural resources (natural resources) are abundant. Abundant natural resources can be viewed as a source of economic growth for a country (Yustika, 2013). Moreover, the population in the hinterland of Surabaya totaled exceeds the capacity to become economic actors in the agricultural sector, could facilitate an area for growing economies with low production costs. Most areas in East Java has a low land ownership due to high population, it is often encountered in the economic actors in the agricultural sector. Where each head of household only have less than 0.5 hectares of land (Yustika, 2013), as a result of agricultural activities are carried out just enough to meet their own needs (subsistence) and not for commercial needs.

As happened in Gresik and Sidoarjo Regency which is rich in resources fishery, Lamongan rich in forestry resources and fisheries, Mojokerto which is rich plantation resources and fisheries, Pasuruan and Bangkalan the resource-rich crops food. However, the wealth of natural resources and adequate human resources are not fully become a key economic prosperity of a region. When the country experienced economic crises such as inflation; decline in manufacturing exports; declining economic growth and increased unemployment, the wealth of natural resources that are not accompanied by a good institutional system causing poor economic performance (disease). Search an explanation of the factors that lead to obtaining economic growth continues to experience renewal. There are other factors that grows and develops in people who are not separated socially separated by social realias among economic actors, namely the agricultural sector institutional sectors. If an institutional performance has a fragile economy, causing economic actors agriculture sector will take the welfare / opinions of other groups to obtain welfare / a high opinion of his own group.

Institutional indeed be rules that are not written in a group, but the rules are respected and upheld to achieve common interests and feeling of well-being evenly distributed. Customs and moral principles run through social interaction in rural communities (Yustika, 2013). Hence the tradition, kinship, affinity for a place to stay the same and the need to work together for the sake of safety and survival at a minimal level, then a familiar social interaction is characteristic of the community of farmers and fishermen.

## V. Conclusion and Recommendation

1. Results of the discussion through the overlay analysis can be concluded that the Gresik and Sidoarjo regency potentially be developed that fisheries sub-sector with the approach of the blue economy, Lamongan potentially be developed that plantation and forestry sub-sector with the green economy approach while the fisheries sub-sector with the approach blue economy, Mojokerto which could potentially be developed that is plantation sub-sector approach to the green economy while the fisheries sub-sector with the approach of the blue economy, Pasuruan and Bangkalan that could potentially be developed, namely sub-sector of food crops done with the approach to the green economy, and the City Mojokerto or in Pasuruan equally likely to be developed either by the blue economy approach and the approach to the green economy.
2. Discussion of the results through analytical tools and shift share overlay can be concluded that the model of development that is appropriate to be used in Gresik and Sidoarjo regency that is specialized to produce and develop the fisheries sub-sector based on an approach that is producing blue economy milkfish and shrimp, specializes in Lamongan green economy is teak and fisheries sub-sector based on the blue economy, namely milk, tuna, sili and crab, Mojokerto which specialize in the plantation sub-sector approach to the green economy and

fisheries sub-sector based on blue economy, Pasuruan and District Bangkalan specialize in producing and developing the sub-sector of food crops based on the green economy, especially crops of rice, maize and beans and Mojokerto and Pasuruan that is specialized to produce and develop the fisheries sub-sector based on an approach blue economy especially catfish farming, tilapia, catfish and carp.

The recommendations are:

1. It should more accurately determine regions that have economic potential of specialists and low economic potential so wise in determining development priorities and on target.
2. Need to revitalize all sectors began sectors that have a value  $LQ > 1$  and  $RPR > 1$ , in order to have a comparative advantage to increase pedapatan district / city and province.
3. Local governments support agriculture by providing agricultural technology that is constantly evolving and agricultural development can run.
4. It should be supported by local government institutions strengthen the agricultural sector to break the chain seekers profits (rent seeking) and asymmetry information.
5. Should, when the local government confirmed the institutional system in the agricultural sector does not eliminate the values and kinship farmers and fishermen.
6. Should local governments develop the institutional system of the financial sector with an uncomplicated procedure, applying the principle of kinship, to know each other with the interest rate charged is lower.

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# Effectiveness Course Introduction to Accounting in the financial records in Accounting Education among Students in 2013

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## Abstract

Introductory Accounting courses are courses of financial records keeping process obtained first in one semester or odd. Expected with the introductory accounting courses at the beginning of this semester so that students can learn more about the financial records-keeping process undertaken by the company and the student can apply the financial records begin process in the daily lives because of the average student up 17 years. The purpose of this study is to find out how the effect of the college introduction of accounting against the financial records begin student every month. The method used is a quantitative deskriptive. to the subject of the study accounting education student research force in 2013 of class A and B. The results of the research suggests that 40% of students have done their financial records and 60% of the students have not made financial records.

*Keywords: introductory courses accounting, financial literacy and financial records*

## Introduction

Financial literacy is a basic need for everyone to avoid problems Finance. According to the financial services authority (OJK) Financial literacy of the Treasury is a series of processes or activities to enhance the knowledge, skills, and confidence of consumers and society wide so that they are able to manage your finances better. Financial literacy is not only It is important for families and businesses, but also for professionals, students, educators, and others. Bakken (in Lutfi & Iramani, 2008) revealed some of the groups that have the lowest level of the financial literacy is the age group 18 to 24 years of age and student. Students generally have greater freedom to make decisions, including in terms of finance. Some indicators of financial literacy is planning good financial, was able to make the recording financial and understanding report balance sheet, income and cash flow.

Financial planning includes planning the sources of income, spending plan, and the plan of investment or saving. According to Masassya (in warsono) use of income It is generally allocated to three components: consumption, saving, and investment. The allocation of an ideal income on all three of these components are fixed for workers: 60%:10%: 30%. For worker profession, should reverse its formulas, namely: 30%: 10%: 60%. Part of the income a person who is used for the purposes of consumption in General is used to meet the needs of everyday life as well as in the long run. Part of this revenue is used to the procurement of goods or services, whether used once discharged as for eat-drinking, as well as for long-term use, such as homes and cars. In doing the purchase of goods and services, financial principles that can be used are: purchase of goods and services which is indeed needed (need), rather than the desired (want). Purchasing decisions are based on a healthy logic, not merely emotional.

Euromonitor International study results show that in the past 25 years, i.e. 1990-2015 household Indonesia suffered an incredible consumption revolution. Consumer spending for air conditioner rises 330%, cable TV rose 600%, the camera goes up 471%, motorbike riding 17.430%, a dishwasher rose 291%, and the phone goes up 1.643 per cent. With the revolution in consumption This has occurred, meaning that panning priority households, from the secondary to the needs of consumption, even the tertiary into the primary needs, and vice versa. In addition, the panning also occurred over the proportion of the allocation of income from the components that should be for savings and investment consumption.

In the selection of savings plan there are six factors that need to be considered according to the Kapoor et. A (Warsono 2010), namely: 1. the rate of return (the percentage increase in the value of savings, 2. Inflation (needs to be compared with the rate of return, because it can reduce purchasing power), 3. Consideration-concideration tax (reducing the repayment/interest), 4. Liquidity (ease in interesting short-term funds without loss of principal or fee), 5. Security (there was not protection against losing money if the bank is experiencing financial difficulties), and 6. Such limitations and the fee (a delay over the interest payments are entered in the accounts and the imposition of fee a certain transactions for the withdrawal of deposits).

Students as young people who are ready to become adults and start a life independently and make financial decisions independently, it should be prepared to have personal financial planning is good and correct. Students must begin to understand the investment already to prepare a more complex life at the moment he works and preclude. The concept of a natural investment income and expenses among others walking with a balanced, spend the treasure for good, give priority to the primary things, avoiding luxury shopping, avoid shopping not has prescribed, and being in the midst of spending. Phenomena that occur in the life of today, many young people are consumptive for example shopping bags branded with a price of hundreds of millions of on investing or saving. Do financial record keeping is a simple step and the beginning of good financial preparation for become familiar and get a better financial life in the future. Do daily financial recording can also prevent students from applicable wasteful and impulsive against the purchase.

According to the (Warren et al. 2015) is a system of Accounting information that provides reports for stakeholders regarding the activity and the company's economic condition, accounting provides information for stakeholders within the company through the process as follows: 1) Identify stakeholders; 2) Assesses the needs of stakeholders; 3) accounting information system Designed to meet the needs of stakeholders; 4) notes the economic data about the activities and events of the company; 5) prepare a report accounting for the stakeholders. Introductory accounting course is a core course of accounting education study program students earned in semester 1 (one), because this subject is basic that must be understood and able accounting education student and it is expected that the accounting education courses students can implement it in everyday life.

The age of the student accounting education courses above 17 years (Teen). According to Piaget brain Growth to reach the perfection in HIGH SCHOOL age (15 – 18) years functionally, the development of cognitive (thinking ability) teenagers can be described as follows: a) the intellectually logical thinking can start teen about abstract ideas; b) proper functioning of the cognitive activities of high level that is making plans, strategies, make decisions, and solve problems ;c) are able to use abstraction-abstraction, distinguish the concrete with the abstract; d) emergence of a scientifically logical reasoning abilities, learn to test the hypothesis; e) think of the future, planning, and explore alternatives to achieve this teenage psychology; f) began to realize the process of efficient thinking and learning introspection; g) Insightberfikirnya increasingly widespread, can include religion, justice, morality, and identity (identity). Piaget's theory based on the above it can be concluded that the average age of students in accounting education courses above 17 years so as to the capability of thinking is

ripe in every way. Accounting education students come from several areas that existed in Indonesia, especially in East Java which includes several cities: Surabaya, Sidoarjo, Bojonegoro, Tuban, Lamongan, Mojokerto, Jombang, Magetan, Madiun, Nganjuk, Ponorogo and Pacitan

With the introductory accounting courses it is expected that students are capable and can make simple financial reports about the acceptance of money earned from their parents each month as well as being able to record the expenses done every month given the age of the students is no longer small but already a teenager. Lucardi and Mitchell (2007) defines a financial literacy as knowledge of finance and skills in applying it in everyday life with the aim of achieving prosperity. According to Nababan 2012 Student is one of the components of a size able community in providing investments against economics matter due later in the day students will be entering the world of work and began independent in managing its Treasury. According to the theory of 2financial literacy student financial literacy was already expected and being able to make their personal financial records every month, but only a handful of students student financial literacy and do record keeping. The outline of this research is how the influence of introductory Accounting courses against financial record keeping each month? The purpose of this research is to know how to influence the course of introduction to financial Accountancy against the logging of every month.

### Research Methods

The method used is descriptive quantitative. With the subject accounting education students host the 2013class A and B which consists of 12 students are male and 58 female students. The location of the research done at the Faculty of Economics University of Surabaya Country with long research 8 months starting from February 2015 up to October 2015. Research results are analyzed in quantitative descriptive based on the scale in the table following 1sebagai Guttman:

**Table 1 Scale Guttman**

Answer	The Value Score
Yes (Y)	1
No (T)	0

Source: (Riduwan (2013))

After the calculated percentage then in interpretasi right to learn the value of accounting education students force the 2013 class A and B are already doing his personal financial record-keeping are as follows:

**Table 2 Criteria of Interpretation**

Assessment	Criteria Of Interpretation
0 % - 20 %	very weak
21 % - 40 %	Weak
41 % - 60 %	enough
61 % - 80 %	Stronger
81 % - 100 %	very strong

Source: Riduwan (2013)

### The results of the research and the discussion

Data research results seen in Figure 1 below:



Figure 1 Sex Student

From Figure 1 above shows that the students in this study examined amounted to 70 students of accounting education forces 2015. By gender male female 58 people and 12 people.

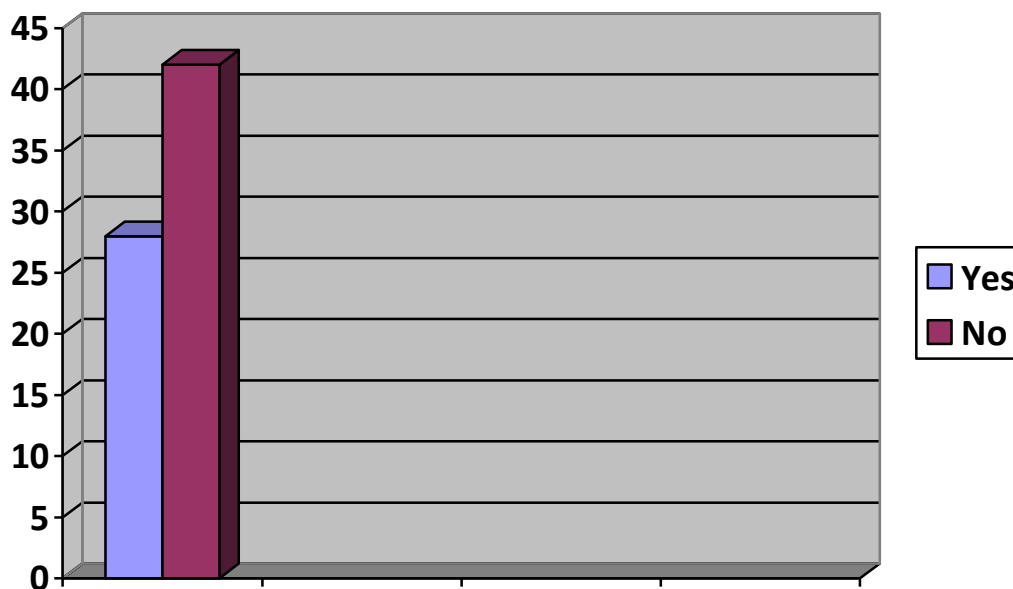


Figure 2 Graph of students doing the recording and do not



From the above data can be known that students who have conducted the recording of his personal financial related income and expenses every month as many as 28 students, while not yet doing the recording of his personal financial statement related income and expenses every month as many as 42 students. If in prosentasi right according to the Riduwan generate a percentage of 40% which indicates the student is still weak in performing their personal financial record-keeping.

This is very contrary to the theory of financial literacy to the effect that financial literacy and financial capability as knowledge in applying it in everyday life with the aim of achieving welfare and research previous Mandell (2008) explains that, students who use the ATM can manage finances practically since they can do financial transactions easily remember ATM functions as a debit card that can be used to pay for a specific expenditure without giving cash. He also found that the use of the ATM can affect the level of financial literacy.

So as at this time the students felt it was in a spoiled with the existence of ATM so that students feel lazy to do her personal financial record-keeping. Students the importance of financial literacy student or know the finances to applicable in everyday life in this case to record income and expenses that are incurred every month, let alone students already get an introductory accounting courses.

## Conclusion

Student accounting education 2013 in General still have not made the financial record-keeping, it is seen from the percentage of students who do financial record-keeping the remaining 40% 60% have not made financial record-keeping.

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## MEREK DAN NIAT BELI ULANG

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### **ABSTRACT**

*This study was conducted aimed to determine and analyze the effect on the brand attitude and brand equity to the repurchase intention. Population in this study was STIESIA students who used SAMSUNG smartphone. Specified number of samples in this study was 114 respondents. The sampling technique used in this study is accidental with survey method.*

*After analysis with SEM, the following results were found: brand attitude significantly affected brand equity; brand equity significantly affected repurchase intention, but involvement showed brand attitude not significantly affected repurchase intention.*

### **ABSTRAK**

Penelitian ini bertujuan untuk menganalisis sikap pada merek dan ekuitas merek terhadap niat beli ulang. Populasi dalam penelitian ini adalah seluruh mahasiswa Sekolah Tinggi Ilmu Ekonomi Indonesia (STIESIA) Surabaya yang menggunakan smartphone Samsung. Jumlah sampel yang ditentukan dalam penelitian ini adalah 114 responden. Teknik sampling yang digunakan dalam penelitian ini adalah *Accidental Sampling*. Sedangkan metode yang digunakan adalah metode survey. Teknik analisis data yang digunakan adalah SEM dengan software AMOS 20.0.

Hasil dalam penelitian ini menunjukkan bahwa sikap pada merek berpengaruh signifikan terhadap ekuitas merek; ekuitas merek berpengaruh signifikan terhadap niat beli ulang; sedangkan sikap pada merek tidak mempunyai pengaruh yang signifikan terhadap niat beli ulang.

Kata Kunci: Sikap Pada Merek, Ekuitas Merek, Niat Beli Ulang.

### **PENDAHULUAN**

Perkembangan teknologi komunikasi yang sangat pesat, menjadikan *handphone* saat ini tidak hanya sebatas untuk melakukan komunikasi. Dengan berbagai fasilitas yang dimilikinya, saat ini *handphone* telah berkembang menjadi sebuah penanda status sosial dan gaya hidup konsumen. Inovasi yang terus dilakukan oleh perusahaan dalam menyempurnakan fitur-fiturnya menyebabkan *handphone* semakin penting untuk dimiliki. Keadaan yang demikian ini menyebabkan intensitas persaingan *handphone* semakin meningkat. Di Indonesia, salah satu perusahaan *handphone* yang memiliki *brand* ternama adalah Samsung. Samsung mengalami peningkatan penjualan sejak meluncurkan *smartphone* berbasis *android*. Berdasarkan data yang dikutip peneliti dari *International Data Corporation* (IDC) dalam

[www.teknojurnal.com/2012](http://www.teknojurnal.com/2012) dan [www.trenologi.com/2013](http://www.trenologi.com/2013) dapat diketahui bahwa pada tahun 2011 sampai 2013 *market share* Samsung selalu meningkat. Untuk kategori handphone, tahun 2011 Samsung memperoleh *market share* 17,1% dan meningkat menjadi 27,5% pada tahun 2013. Untuk kategori smarphone, Samsung juga berada di urutan pertama dengan *market share* yang meningkat dari 28,8% (tahun 2012) menjadi 32,7% (tahun 2013).

Banyak faktor yang berpengaruh terhadap kesuksesan suatu perusahaan, sikap pada merek menjadi salah satu faktor yang juga harus diperhatikan dalam usaha pemasaran sebuah produk. Konsep pemasaran menegaskan bahwa kunci untuk mencapai tujuan organisasi yang ditetapkan adalah perusahaan tersebut harus menjadi lebih efektif dibandingkan para pesaing dalam menciptakan, menyerahkan, dan mengkomunikasikan nilai pelanggan kepada pasar sasaran yang dipilih (Kotler dan Keller, 2012: 18). Jadi, konsep pemasaran menyatakan bahwa memuaskan kebutuhan konsumen merupakan syarat ekonomi dan sosial bagi kelangsungan hidup perusahaan. Jika suatu produk dapat memenuhi kebutuhan dan keinginan konsumen, maka konsumen akan bersikap positif terhadap produk tersebut. Sikap yang positif akan menghasilkan pembelian dan rekomendasi kepada orang-orang disekitarnya. Sebaliknya, sikap negatif ditunjukkan dengan penolakan, dan sikap yang demikian ini akan diteruskan untuk mempengaruhi orang lain.

Sikap positif konsumen terhadap suatu merek sangat penting karena dapat memperkuat ekuitas merek. Seperti yang ditunjukkan oleh penelitian Chang *et al.* (2008) bahwa terdapat pengaruh langsung yang signifikan antara sikap merek (*brand attitude*) terhadap ekuitas merek (*brand equity*). Akan tetapi penelitian Chang *et al.* (2008) berbeda dengan penelitian Sitinjak dan Tumpal (2005) dalam Rizky dan Pantawis (2011) yang menunjukkan bahwa sikap merek tidak berpengaruh langsung terhadap ekuitas merek. Namun secara teoritis sikap terhadap merek cenderung berpengaruh positif terhadap ekuitas merek.

Kemudian Kurniawati (2009) menunjukkan bahwa sikap terhadap merek berpengaruh positif terhadap minat beli ulang. Produk yang memiliki *brand equity* yang kuat dapat mempengaruhi niat untuk membeli ulang (Aaker, 1996). Aaker (1997) menyatakan bahwa *brand equity* (yang dibentuk oleh dimensi-dimensi *brand equity* yaitu *brand awareness*, *brand association*, *perceived quality*, dan *brand loyalty*) dapat mempengaruhi keinginan membeli ulang. Akan tetapi, pernyataan Aaker (1997) tersebut berbeda dengan hasil penelitian Hartini (2012) yang menunjukkan bahwa *brand equity* tidak berpengaruh signifikan terhadap niat beli ulang.

Berdasarkan *research gap* dalam penelitian terdahulu dan fakta di pasar handphone mengenai Samsung, maka judul penelitian ini adalah "***Pengaruh Sikap Pada Merek dan Ekuitas Merek Terhadap Niat Beli Ulang Smartphone Samsung***".

## TINJAUAN TEORI DAN PENGEMBANGAN HIPOTESIS

### **Merek (*Brand*)**

Merek merupakan aset tidak berwujud yang dimiliki perusahaan yang sifatnya tetap. Merek harus dikelola dan dipantau secara terus menerus oleh setiap perusahaan agar nilainya tidak menyusut. Merek menandakan tingkat kualitas tertentu dari suatu produk sehingga pembeli yang puas dapat dengan mudah memilih produk tersebut untuk digunakan kembali. Pengertian merek menurut Kotler dan Keller (2009: 258) adalah produk atau jasa yang dimensinya mendiferensiasikan merek tersebut dengan beberapa cara dari produk atau jasa lainnya dirancang untuk memuaskan kebutuhan yang sama. Merek mengidentifikasi sumber atau pembuat produk dan memungkinkan konsumen-bisa individual atau organisasi-untuk menuntut tanggung jawab atas kinerjanya kepada pabrikan atau distributor tertentu (Kotler dan Keller, 2009:259).

### **Sikap Pada Merek (*Brand Attitude*)**

Menurut Schiffman dan Kanuk (2008: 222) sikap adalah kecenderungan yang dipelajari dalam berperilaku dengan cara yang menyenangkan atau tidak menyenangkan terhadap suatu obyek tertentu. Sikap juga merupakan salah satu konsep yang paling penting yang digunakan pemasar untuk memahami konsumen (Peter & Olson, 2005: 23). Pemasar sangat berkepentingan pada sikap konsumen terhadap produknya, karena sikap merupakan salah satu faktor yang berpengaruh dalam pengambilan keputusan pembelian oleh konsumen.

Menurut Chaundhuri (1999) sikap pada merek (*brand attitude*) adalah evaluasi keseluruhan konsumen terhadap merek. Dalam model ekuitas merek, ditemukan bahwa peningkatan pangsa pasar terjadi ketika sikap pada merek semakin positif, dan sikap pada merek akan berpengaruh pada ekuitas merek (Chaudhuri, 1999). Sikap positif terhadap merek tertentu akan memungkinkan konsumen untuk melakukan pembelian terhadap merek tersebut, sebaliknya jika negatif akan menghalangi konsumen untuk melakukan pembelian (Sutisna, 2002:98). Ada 2 dasar konsep sikap pada merek, konsep pertama, yang juga disebut konsep klasik adalah sikap yang merujuk kepada komponen kognitif, afektif dan konatif (Chang, *et al.*, 2008). Konsep yang lebih sederhana, menjelaskan sikap pada merek sebagai bentuk dimensi yang merepresentasikan akibat positif atau negatif. Indikator sikap pada merek (*brand attitude*) menurut Chang *et al.* (2008) adalah: 1) Suka atau tidak suka terhadap produk; 2) Kepuasan terhadap layanan; 3) Opini; 4) Akan terus menggunakan produk.

### **Ekuitas Merek (*Brand Equity*)**

*Brand equity* dapat diartikan sebagai kekuatan dari sebuah merek. Merek yang dimiliki oleh perusahaan akan menjadi kuat bila memiliki ekuitas merek yang kuat juga (Kotler dan Keller, 2009: 275). Ekuitas merek dapat tercermin dalam cara konsumen berpikir, merasa, dan bertindak dalam hubungannya dengan merek, dan juga harga, pangsa pasar, dan profitabilitas yang diberikan

merek bagi perusahaan (Kotler dan Keller, 2009: 263). Ekuitas merek sangat terkait dengan sikap pada merek yang positif dan kuat yang didasarkan pada arti, keyakinan positif tentang merek dalam memori. Seperti pendapat yang dikemukakan oleh (Kotler dan Keller, 2009: 265), bahwa memahami pengetahuan merek konsumen-semua hal yang terhubung dengan merek yang bersangkutan dalam pikiran konsumen-sangat penting karena merupakan dasar ekuitas merek.

### Model Ekuitas Merek

Menurut Kotler dan Keller (2009: 265-268), ada empat model ekuitas merek, yaitu:

#### Model "Penilai aset merek (*Brand Asset Valuator*-BAV)"

Ada lima komponen-atau pilar-kunci dari ekuitas merek, menurut BAV: a. *Diferensiasi (Differentiation)*, mengukur tingkat sejauh mana merek dianggap berbeda dari merek lain; b. *Energi (Energy)*, mengukur arti momentum merek; c. *Relevansi (relevance)*, mengukur cakupan daya tarik merek; d. *Harga diri (Esteem)*, mengukur seberapa baik merek dihargai dan dihormati; e. *Pengetahuan (Knowledge)*, mengukur kadar keakraban dan keintiman konsumen dengan merek.

Diferensiasi, energi, dan relevansi digabungkan untuk menentukan *Kekuatan Merek yang Menggerakkan*. Ketiga pilar ini menunjukkan masa depan merek. Harga Diri dan Pengetahuan bersama-sama menciptakan *Reputasi Merek*, yang lebih merupakan "kartu laporan" tentang kinerja masa lalu.

#### Model "BRANDZ"

Menurut model ini, pembangunan merek mengikuti sederet langkah yang berurutan, masing-masing bergantung pada keberhasilan pencapaian langkah sebelumnya. Gambar 1.1 menunjukkan kuatnya hubungan dalam setiap tingkat. Konsumen "terikat", yang berada di puncak pyramid, membangun hubungan yang lebih kuat dengan merek dan menghabiskan lebih banyak untuk merek tersebut dibandingkan konsumen yang berada pada tingkat yang lebih rendah.



Gambar 1.1 Piramida Brand Dynamics

Sumber: Kotler dan Keller (2009: 267)

### Model "RESONANSI MEREK"

Model resonansi merek memandang pembangunan merek sebagai sederet langkah yang menapak naik, dari bawah ke atas: (1) memastikan teridentifikasinya merek oleh pelanggan dan memastikan asosiasi merek dalam pikiran pelanggan dengan satu kelas produk atau kebutuhan pelanggan tertentu; (2) memastikan tertanamnya arti merek secara total dalam pikiran pelanggan dengan mengaitkan sejumlah asosiasi merek yang nyata dan tidak nyata secara strategis; (3) mendapatkan respon pelanggan yang tepat dalam hubungannya dengan penilaian dan perasaan terkait dengan merek; dan (4) mengubah respons merek untuk menciptakan hubungan loyalitas yang intens dan aktif antara pelanggan dan merek. Menurut model ini, menerapkan keempat langkah ini berarti membangun sebuah pyramid yang terdiri atas enam "kotak pembangunan merek" dengan pelanggan. Ekuitas merek yang signifikan tercipta jika kotak bangunan yang tepat terpasang pada tempatnya.

### Model "AAKER"

Dalam model Aaker (Kotler dan Keller, 2009: 268), ekuitas merek dikelompokkan ke dalam lima kategori, yaitu: 1) *Brand awareness*; 2) *Brand Associations*; 3) *Perceived quality*; 4) *Brand loyalty*; 5) *Other Proprietary Brand Assets* (asset merek lain seperti: *trademark* dan paten)

### Kesadaran Merek (*Brand Awareness*)

Menurut Kotler & Keller (2007: 213) kesadaran merek adalah kemampuan untuk mengidentifikasi (mengakui atau mengingat) merek dalam kategori, secara cukup rinci untuk melakukan pembelian. Rangkuti (2009: 40-41) menjelaskan tingkatan *brand awareness* dari tingkat terendah sampai tingkat tertinggi sebagai berikut: 1. *Unaware of Brand* (Tidak Menyadari Merek), Pada tahapan ini, pelanggan merasa ragu atau tidak yakin apakah sudah mengenali merek yang disebutkan atau belum; 2. *Brand Recognition* (Pengenalan Merek), Pada tahapan ini, pelanggan mampu mengidentifikasi merek yang disebutkan; 3. *Brand Recall* (Peningkatan Kembali Terhadap Merek), Pada tahapan ini, pelanggan mampu mengingat merek tanpa diberikan stimulus; 4. *Top of Mind* (Puncak Pikiran), Pada tahapan ini, pelanggan mengingat merek sebagai yang pertama kali muncul di pikiran saat berbicara mengenai kategori produk tertentu.

### Loyalitas Merek (*Brand Loyalty*)

Loyalitas merek (*brand loyalty*) adalah komitmen yang dipegang kuat untuk membeli atau berlangganan lagi produk atau jasa tertentu di masa depan meskipun ada pengaruh situasi dan usaha pemasaran yang berpotensi menyebabkan peralihan perilaku (Kotler & Keller, 2012: 149). Menurut Rangkuti (2009: 62-63), tingkat kedekatan pelanggan terhadap suatu merek dapat dibagi ke dalam empat tingkat yaitu: 1. *Switchers/Price Sensitive*, pada tingkat ini merek dipersepsikan memberi kepuasan yang sama. Merek berperan kecil dalam keputusan pembelian. Pada tingkatan ini, pelanggan lebih sensitif dengan perbedaan harga; 2. *Satisfied / Habitual Buyer*, pada tingkat ini pelanggan merasa puas terhadap produk atau setidaknya tidak merasa tidak

puas terhadap suatu produk. Konsumen akan memerhatikan benefit yang ditawarkan sebuah produk; 3. *Satisfied buyer with switching cost*, pada tahap ini pelanggan merasa puas terhadap produk. Mereka harus mengeluarkan biaya tertentu apabila ingin berpindah merek; 4. *Committed buyer*, pada tingkatan ini pelanggan merasa bangga menggunakan sebuah merek dan merekomendasikannya kepada orang lain.

#### **Persepsi Kualitas (*Perceived Quality*)**

Aaker (1991) dalam Rangkuti (2009: 41) mendefinisikan *perceived quality* sebagai persepsi pelanggan terhadap kualitas atau keunggulan suatu produk atau jasa sehubungan dengan tujuan yang diinginkannya, dibandingkan dengan alternatif lain.

#### **Asosiasi Merek (*Brand Association*)**

Aaker (1991) dalam Rangkuti (2009: 44) mendefinisikan *brand association* sebagai segala sesuatu yang terhubung di memori pelanggan terhadap suatu merek. Asosiasi merek dapat menciptakan suatu nilai bagi perusahaan dan para pelanggan, karena ia dapat membantu proses penyusunan informasi untuk membedakan merek yang satu dengan yang lainnya.

#### **Perilaku Pembelian Konsumen**

Setiap konsumen memiliki perlakuan yang berbeda terhadap suatu produk karena para konsumen ini memiliki pertimbangan yang juga cenderung berbeda-beda. Menurut Kotler dan Keller (2012: 151) perilaku konsumen adalah studi tentang bagaimana individu, kelompok, dan organisasi memilih, membeli, menggunakan, dan menghabiskan barang, jasa, ide, atau pengalaman untuk memuaskan kebutuhan dan keinginannya. Dalam melakukan pembelian, konsumen melewati lima tahap, yaitu pengenalan masalah, pencarian informasi, evaluasi alternatif, keputusan pembelian, dan perilaku pasca pembelian (Kotler dan Keller, 2009: 235).

#### **Niat Beli Ulang (*Repurchase Intention*)**

Menurut Hellier *et al.* (2003) minat beli ulang merupakan keputusan konsumen untuk melakukan pembelian kembali suatu produk atau jasa berdasarkan apa yang telah diperoleh dari perusahaan yang sama, melakukan pengeluaran untuk memperoleh barang dan jasa tersebut dan ada kecenderungan dilakukan secara berkala. Konsumen beranggapan bahwa hal ini lebih ekonomis dan efisien daripada konsumen harus kembali mencari tahu tentang *brand* yang lain. Pembelian ulang merupakan perilaku pasca pembelian yang disebabkan oleh adanya kepuasan yang dirasakan konsumen atas barang atau jasa yang telah dibeli atau dikonsumsi sebelumnya.

Menurut Ferdinand (2002:129), salah satu dimensi dari perilaku pembelian adalah niat membeli ulang. Indikator minat beli ulang menurut Ferdinand (2002: 25-26) adalah:

1. Minat transaksional yaitu kecenderungan seseorang untuk selalu membeli ulang produk yang telah dikonsumsi; 2. Minat referensial yaitu kecenderungan seseorang untuk mereferensikan produk yang sudah dibelinya, agar juga dibeli oleh orang lain, dengan referensi pengalaman konsumsinya; 3. Minat preferensial yaitu minat yang menggambarkan perilaku seseorang yang selalu memiliki preferensi utama pada produk yang telah dikonsumsi. Preferensi ini hanya dapat diganti bila terjadi sesuatu dengan produk preferensinya; 4. Minat eksploratif yaitu minat yang menggambarkan perilaku seseorang yang selalu mencari informasi mengenai produk yang diminatinya dan mencari informasi untuk mendukung sifat-sifat positif dari produk yang dilungskannya.

### **Hipotesis**

Hipotesis yang diajukan dalam penelitian ini ada tiga, yaitu: 1. Sikap pada merek (*brand attitude*) berpengaruh positif dan signifikan terhadap ekuitas merek (*brand equity*); 2. Sikap pada merek (*brand attitude*) berpengaruh positif dan signifikan terhadap niat beli ulang (*repurchase intention*); 3. Ekuitas merek (*brand equity*) berpengaruh positif dan signifikan terhadap niat beli ulang (*repurchase intention*).

### **METODE PENELITIAN**

#### **Desain Penelitian**

Penelitian ini merupakan penelitian kuantitatif dengan menggunakan metode survey. Populasi dalam penelitian ini adalah seluruh mahasiswa Sekolah Tinggi Ilmu Ekonomi Indonesia (STIESIA) Surabaya yang menggunakan smartphone Samsung. Karena jumlah populasi yang dimaksud tidak diketahui secara jelas, maka peneliti memutuskan untuk mengambil sampel dari populasi tersebut. Teknik penentuan sampel yang digunakan adalah *non-probability sampling*. Sampel dalam penelitian ini adalah mahasiswa Sekolah Tinggi Ilmu Ekonomi Indonesia (STIESIA) Surabaya yang masih aktif kuliah saat pengambilan sampel dilakukan dan menggunakan smartphone Samsung. Teknik pengambilan sampel yang digunakan yaitu teknik *accidental sampling* dimana hanya mahasiswa STIESIA yang secara kebetulan bertemu dengan peneliti pada saat penelitian berlangsung dan memenuhi syarat sebagai sumber data saja yang akan dijadikan sampel. Besarnya sampel yang ditentukan dalam penelitian ini adalah 114 responden.

#### **Teknik Pengumpulan Data**

Teknik pengumpulan data yang digunakan dalam penelitian ini adalah dengan cara menyebarkan kuesioner kepada responden. Peneliti menggunakan metode ini dengan asumsi bahwa subyek penelitian merupakan orang-orang yang paling tahu tentang dirinya dan pernyataan subyek yang diberikan adalah benar dan bisa dipercaya.



### Definisi Operasional Variabel

Dalam penelitian ini dilakukan pendefinisian operasional terhadap semua variabel yang diteliti guna menyamakan persepsi atau pandangan dan menghindari penafsiran yang berbeda mengenai variabel-variabel yang diteliti serta mempermudah peneliti sendiri dalam menganalisis variabel-variabel penelitian. Definisi operasional terhadap variabel-variabel yang dianalisis dalam penelitian ini dijabarkan sebagai berikut:

#### Sikap Pada Merek (X)

Yang dimaksud sikap pada merek (*brand attitude*) dalam penelitian ini adalah sikap konsumen yang menggunakan smartphone Samsung yang mempunyai kecenderungan untuk mengevaluasi merek dengan cara mendukung (*positif*) atau tidak mendukung (*negatif*) secara konsisten. Indikator yang digunakan untuk mengukur sikap pada merek dalam penelitian ini mengacu pada Chang *et al.* (2008), yaitu: a. Suka atau tidak suka terhadap produk; b. Kepuasan terhadap produk; c. Opini tentang produk; d. Akan terus menggunakan produk

#### Ekuitas Merek (Z)

Yang dimaksud ekuitas merek (*brand equity*) dalam penelitian ini adalah nilai dari merek Samsung yang menggambarkan keseluruhan kekuatan merek Samsung di pasar. Dimensi yang digunakan untuk mengukur ekuitas merek dalam penelitian ini mengacu pada Chang *et al.* 2008 yaitu: kesadaran merek (*brand awareness*) dan asosiasi merek (*brand association*), loyalitas merek (*brand loyalty*), dan persepsi kualitas (*perceived quality*). Adapun Indikator ekuitas merek dari dimensi tersebut adalah: a. Mudah dikenali; b. Simbol yang khas; c. Ingatan terhadap merek; d. Selalu menggunakan produk; e. Pilihan pertama; f. Kualitas tinggi; g. Fungsi penting; h. Melebihi yang lain

#### Niat Beli Ulang (Y)

Yang dimaksud niat beli ulang (*repurchase intention*) dalam penelitian ini adalah niat konsumen (pengguna Samsung) untuk melakukan pembelian kembali merek Samsung pada kesempatan yang akan datang. Indikator yang digunakan untuk mengukur niat beli ulang (*repurchase intention*) dalam penelitian ini mengacu pada Ferdinand (2002: 25-26), yaitu: a) Keinginan untuk membeli kembali dimasa mendatang (Transaksional); b) Keinginan untuk mereferensikan kepada orang lain (Referensial); c) Preferensi dibanding merek lain (Preferensial); d) Keinginan untuk selalu mencari informasi tentang perkembangan (Eksploratif).

#### Skala Pengukuran

Pengukuran terhadap indikator variabel dalam penelitian ini dinyatakan dalam skoring menurut skala Likert dengan rating skor 1 sampai dengan skor 5, yaitu mulai dari skala sangat setuju (SS) yang diberi skor 5, setuju (S) diberi skor 4, netral (N) diberi skor 3, tidak setuju (TS) diberi skor 2 sampai dengan skala sangat tidak setuju (STS) yang diberi skor 1.

## Pengujian Instrumen Penelitian

### Uji Konfirmatori

Pada pengolahan SEM dengan *software* AMOS 20.0 dilakukan Analisis Faktor Konfirmatori atau *Confirmatory Factor Analysis (CFA)* antar variabel exogen dan antar variabel endogen.

### Uji Validitas dan Reliabilitas

*a. Convergent Validity; b. Variance Extracted; c. Construct Reliability; d. Discriminant Validity*

### Analisis SEM Full Model

Setelah dilakukan analisis konfirmatori, analisis selanjutnya adalah analisis terhadap model full struktural menggunakan SEM dengan memasukkan indikator yang telah diuji dengan konfirmatori.

### Uji Asumsi SEM

1. Uji Normalitas Data; 2. Evaluasi Outlier; 3. Evaluasi Terhadap Nilai Residual

## HASIL PENELITIAN DAN PEMBAHASAN

### Karakteristik Responden

Deskripsi responden berdasarkan jenis kelamin menunjukkan bahwa responden laki-laki berjumlah 42 (36,84%) dan responden perempuan berjumlah 72 (63,16%).

Deskripsi responden berdasarkan umur menunjukkan bahwa umur responden yang  $\leq 20$  tahun sebesar 61 responden dan belum bekerja. Sedangkan responden dengan kelompok umur antara 21 – 25 tahun berjumlah 41 responden dan sudah bekerja. Kelompok responden dengan umur antara 26 – 30 tahun dan sudah bekerja sebesar 9 responden, kelompok responden dengan umur antara 31 – 40 tahun berjumlah 3 responden dan sudah bekerja.

Deskripsi responden berdasarkan tipe smartphone Samsung yang digunakan menunjukkan bahwa responden seluruhnya merupakan android Samsung galaxi dengan berbagai tipe. Tipe smartphone Samsung yang paling banyak digunakan oleh responden adalah Samsung Galaxi Young yaitu sebanyak 29 responden, sedangkan tipe Galaxi mini digunakan oleh 14 responden. Untuk tipe Samsung Galaxi S plus, Galaxi S III, Galaxi Grand, dan Galaxi W merupakan tipe smartphone Samsung yang paling sedikit penggunaannya, yaitu masing-masing 1 responden dan responden yang menggunakan tipe Galaxi S duos dan Galaxi Star masing-masing 7 responden. Sedangkan responden yang menggunakan Galaxy Pocket dan Galaxy S4 masing-masing 3 responden. Kemudian responden yang menggunakan Galaxy Fit dan Galaxy Ace masing-masing 5 responden.

Deskripsi responden berdasarkan program studi menunjukkan bahwa responden yang menempuh program studi D3 yaitu sebesar 12 responden, sedangkan responden yang menempuh program studi S1 berjumlah 96 responden dan responden yang sedang menempuh program studi S2 berjumlah 6 responden.

Deskripsi responden berdasarkan lama menggunakan Samsung menunjukkan bahwa responden yang menggunakan smartphone Samsung

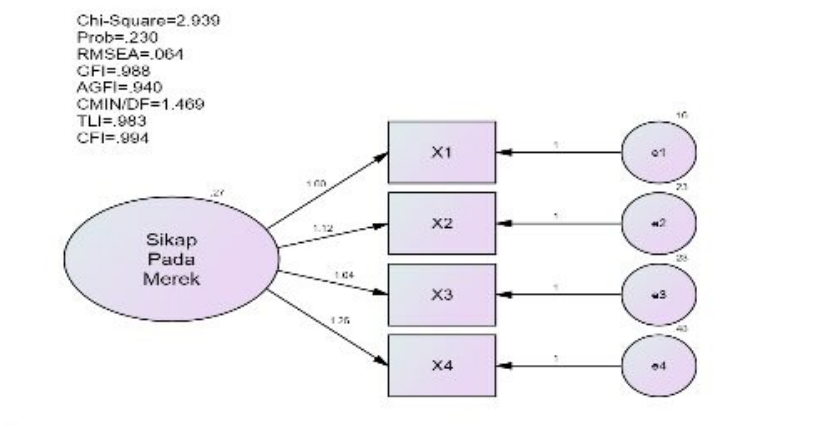
selama  $\leq 1$  tahun dan responden yang menggunakan smartphone Samsung selama  $> 1$  masing-masing sebesar 57 responden.

Deskripsi responden berdasarkan jumlah handphone menunjukkan bahwa responden yang memiliki 1 handphone berjumlah 56 responden. Yang memiliki 2 handphone yaitu sebesar 44 responden dan yang memiliki 3 handphone berjumlah 11 responden. Dan 3 responden lainnya merupakan responden yang memiliki 4 handphone. Dengan demikian responden yang mempunyai handphone lebih dari 1 berjumlah 58 responden atau 50,87% dari total responden. Responden yang mempunyai handphone lebih dari 1 tersebut menggunakan merek Samsung dan merek lain yaitu Apple, Nokia, Sony Ericsson, blackberry, Acer dan lain-lain.

### Hasil Uji Konfirmatori Pada Masing-Masing Konstruk

#### Uji Konfirmatori Konstruk Eksogen Sikap Pada Merek (X)

Berikut ini disajikan hasil pengolahan uji konfirmatori untuk konstruk eksogen sikap pada merek:



Gambar 1.2

#### *Confirmatory Factor Analysis* Konstruk Eksogen Sikap Pada Merek

Sumber: Data primer diolah

Hasil uji *chi-square* pada konstruk eksogen sikap pada merek menunjukkan nilai fit yaitu 2,939 dengan probabilitas  $p=0,230$  yang mana nilai tersebut baik karena diatas 0,05. Nilai *standardized loading* konstruk eksogen sikap pada merek (tabel 1.1) sudah diatas 0,50 maka dapat dikatakan bahwa indikator-indikator pembentuk variabel sikap pada merek telah menunjukkan unidimensional atau valid. Hasil tersebut menunjukkan konstruk dapat diolah dengan full model.

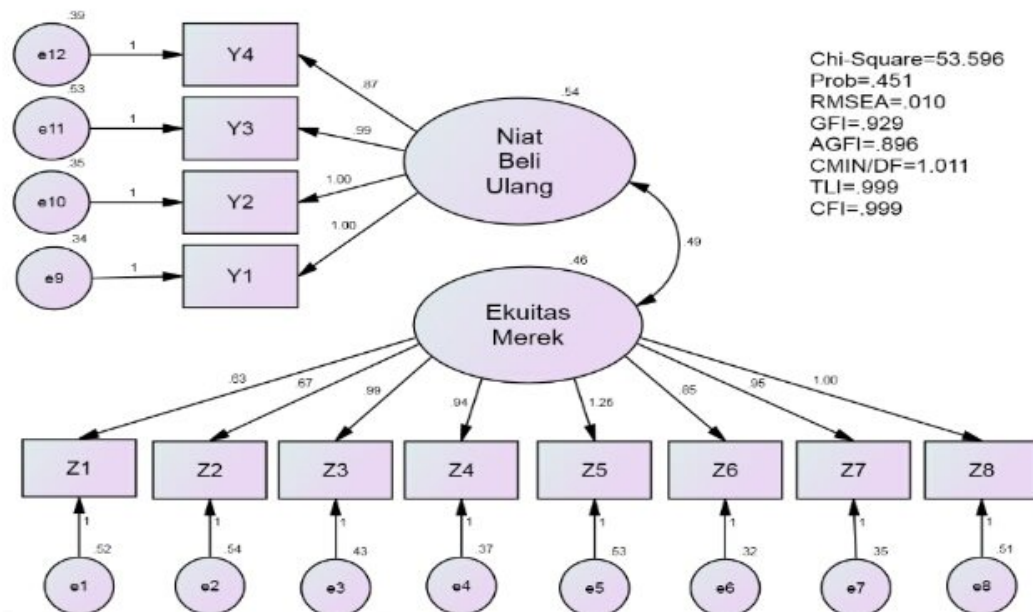
**Tabel 1.1**  
**Hasil *Standardized Regression Weights* Konstruk Eksogen**

	Estimate
X1 <-- Sikap_Pada_Merek	.792
X2 <-- Sikap_Pada_Merek	.773
X3 <-- Sikap_Pada_Merek	.754
X4 <-- Sikap_Pada_Merek	.688

Sumber: Data primer diolah

**Uji Konfirmatori Antar Konstruk Endogen Ekuitas Merek dan Niat Beli Ulang**

Dalam penelitian ini, analisis faktor konfirmatori (*Confirmatory Factor Analysis*) pada konstruk endogen dilakukan pada dua variabel yaitu ekuitas merek dan niat beli ulang. Kedua variabel endogen ini saling dikovariankan dan berikut ini disajikan hasil pengolahan uji konfirmatori antar konstruk ekuitas merek dan niat beli ulang:



**Gambar 1.3**  
***Confirmatory Factor Analysis* Konstruk Endogen**

Sumber: Data primer diolah

Dari gambar 1.3 di atas dapat diketahui bahwa hasil uji Chi-square menunjukkan nilai 53,596 dengan probabilitas p=0,451. Untuk nilai *loading factor* setiap indikator konstruk endogen disajikan pada tabel 1.2 sebagai berikut:

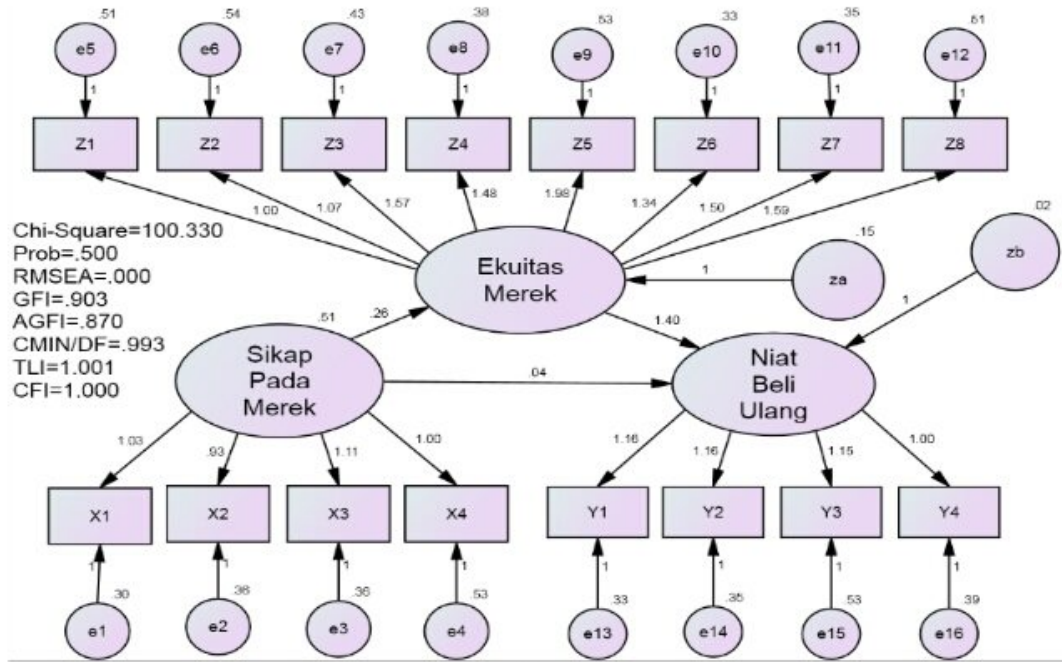
**Tabel 1.2**  
**Hasil Standardized *Regression Weights* Konstruk Endogen**

		Estimate
Z8	<-- Ekuitas_Merek	.689
Z7	<-- Ekuitas_Merek	.739
Z6	<-- Ekuitas_Merek	.713
Z5	<-- Ekuitas_Merek	.762
Z4	<-- Ekuitas_Merek	.722
Z3	<-- Ekuitas_Merek	.715
Z2	<-- Ekuitas_Merek	.529
Z1	<-- Ekuitas_Merek	.513
Y1	<-- Niat_Beli_Ulang	.783
Y2	<-- Niat_Beli_Ulang	.779
Y3	<-- Niat_Beli_Ulang	.707
Y4	<-- Niat_Beli_Ulang	.715

Sumber: Data primer diolah

#### **Analisis SEM Full Model**

Analisis terhadap model full struktural dengan menggunakan SEM dilakukan dengan memasukkan indikator yang telah diuji dengan konfirmatori.



Gambar 1.4 Full Model Struktural

Sumber: Data primer diolah

Hasil output menunjukkan nilai *goodness-fit* sangat baik yaitu nilai Chi-square = 100,330 probabilitas 0,500. Nilai GFI, AGFI, CMIN/DF, TLI, dan CFI semua sesuai dengan yang dipersyaratkan. Dengan demikian model sesuai dengan data empirisnya.

Tabel 1.3 Indeks Pengujian Kelayakan Full Model

<i>Goodness of fit index</i>	<i>Cut off value</i>	Hasil	Evaluasi
$\chi^2$ - Chi-square	Diharapkan kecil (sesuai df)	100,330	Baik
Significaned Probability	$\geq 0,05$	0,500	Baik
RMSEA	$\leq 0,08$	0,000	Baik
GFI	$\geq 0,90$	0,903	Baik
AGFI	$\geq 0,90$	0,870	Cukup Baik
CMIN/DF	$\leq 2,00$	0,993	Baik
TLI	$\geq 0,95$	1,001	Baik
CFI	$\geq 0,95$	1,000	Baik

Sumber: Data primer diolah

Uji Validitas dan Reliabilitas

*Convergent Validity*

Nilai *standardized loading estimate* harus sama dengan 0,50 atau lebih dan idealnya harus 0,70. Berdasarkan hasil output *standardized loading estimate* di atas (tabel 1.1 dan tabel 1.2), semua *loading factor* signifikan secara statistik dan nilai *loading* sudah di atas 0,50.

### *Variance Extracted*

Nilai *variance extracted* (AVE) sama dengan atau di atas 0,50 menunjukkan adanya *convergent* yang baik. Nilai AVE harus dihitung untuk setiap konstruk laten.

**Tabel 1.4**  
Perhitungan *Variance Extracted*

Variabel	<i>Variance Extracted</i>
Sikap Pada Merek	0,567
Ekuitas Merek	0,460
Niat Beli Ulang	0,557

Sumber: Data primer diolah

Perhitungan AVE di atas menunjukkan bahwa semua konstruk memiliki nilai yang baik karena di atas 0,50. Kecuali konstruk ekuitas merek yang nilainya masih berada di bawah 0,50. Hal ini dikarenakan nilai loading untuk konstruk ekuitas merek masih ada yang di bawah 0,70 yaitu Z1, Z2, dan Z8. Nilai loading di bawah 0,70 akan menarik nilai AVE ke bawah atau di bawah nilai 0,50 (Ghozali 2011:139). Akan tetapi, dalam penelitian ini indikator Z1, Z2 dan Z8 tidak dibuang dari analisis karena nilai loadingnya sudah berada di atas 0,50.

### *Construct Reliability*

*Construct Reliability* 0,70 atau lebih menunjukkan reliabilitas yang baik, sedangkan reliabilitas 0,60 – 0,70 masih dapat diterima dengan syarat validitas indikator dalam model baik. Dari hasil perhitungan reliabilitas dapat diketahui bahwa untuk masing-masing konstruk memiliki nilai di atas *cut-off value* 0,70. Dengan demikian dapat disimpulkan bahwa indikator dalam penelitian ini menunjukkan reliabilitas yang baik.

**Tabel 1.5**  
Perhitungan *Construct Reliability*

Variabel	<i>Construct Reliability</i>
Sikap Pada Merek	0,839
Ekuitas Merek	0,870
Niat Beli Ulang	0,834

Sumber: Data primer diolah

### *Discriminant Validity*

*Discriminant validity* mengukur sampai seberapa jauh suatu konstruk benar-benar berbeda dari konstruk lainnya. Nilai *discriminant validity* yang tinggi memberikan bukti bahwa suatu konstruk adalah unik dan mampu menangkap fenomena yang diukur. Hasil korelasi antar konstruk dan akar kuadrat AVE disajikan pada tabel 1.6 sebagai berikut:

**Tabel 1.6 Output Korelasi Antar Konstruk dan Akar Kuadrat AVE**

	Sikap Merek	Ekuitas Merek	Niat Beli Ulang
Sikap Merek	<b>0,753</b>		
Ekuitas Merek	0,431	<b>0,678</b>	
Niat Beli Ulang	0,043	0,954	<b>0,746</b>

Sumber: Data primer diolah

Dari tabel 1.6 di atas menunjukkan bahwa masing-masing konstruk laten memiliki *discriminant validity* yang baik. Hal ini dapat dilihat dari nilai akar kuadrat dari AVE ( $\sqrt{AVE}$ ) masing-masing konstuk laten yang lebih tinggi nilainya dibandingkan dengan nilai korelasi antara konstruk. Kecuali untuk konstruk ekuitas merek yang nilai akar kuadrat dari AVE lebih kecil dari nilai korelasi antar konstruk.

Sama halnya dengan konstruk ekuitas merek yang perhitungan *variance extracted*-nya masih di bawah 0,50 karena nilai *loading factor* yang tidak semuanya berada di atas 0,70, maka dalam perhitungan *discriminant validity* ini nilai konstruk ekuitas merek juga memiliki nilai ( $\sqrt{AVE}$ ) yang lebih rendah dibandingkan dengan nilai korelasi antara konstruk karena nilai *loading factor* yang tidak semuanya berada di atas 0,70.

### Uji Asumsi Model Struktural

#### Evaluasi Normalitas Data

Pengujian normalitas *multivariate* dapat dilakukan dengan melihat nilai CR *multivariate*. Karena nilai CR *multivariate* lebih kecil dari  $\pm 2,58$ , maka disimpulkan bahwa tidak terdapat bukti bahwa distribusi ini tidak normal. Oleh karena itu asumsi normalitas telah terpenuhi dan data yang digunakan dalam penelitian ini layak untuk digunakan dalam estimasi selanjutnya.

#### Evaluasi Outlier

Kriteria yang digunakan adalah memperhatikan nilai Chi-square pada derajat kebebasan (*degree of freedom*) 16 yaitu jumlah variabel indikator pada tingkat signifikansi  $p < 0,001$ . Nilai Mahalanobis distance  $\chi^2 (16; 0,001) = 39,25$ . Dengan demikian jika nilai *mahalanobis distance* penelitian ini lebih besar dari 39,25 adalah *multivariate outliers*. Karena dalam penelitian ini nilai *mahalanobis distance* tidak ada yang lebih besar dari 39,25 maka dapat disimpulkan bahwa tidak ada outlier pada data.

#### Evaluasi Terhadap Nilai Residual

Berdasarkan hasil output *standardized residual* pada penelitian ini tidak menunjukkan adanya nilai *standardized residual covariance* yang melebihi 2,58. Dengan demikian maka data tidak perlu dimodifikasi terhadap model yang dikembangkan dalam penelitian ini.

#### Uji Hipotesis

Uji Hipotesis I: Dari hasil output koefisien parameter diketahui bahwa hubungan konstruk sikap pada merek (*brand attitude*) ke ekuitas merek (*brand*



*equity*) signifikan pada 0,001 (tanda  $p=***$ ) dengan standardized koefisien parameter sebesar 0,431. Hasil hipotesis 1 dalam penelitian ini mendukung penelitian Chang et.al. (2008) yang menyatakan bahwa terdapat pengaruh yang positif dan signifikan antara sikap merek terhadap ekuitas merek. Artinya semakin tinggi (positif) sikap konsumen terhadap suatu merek Samsung, maka semakin tinggi pula ekuitas merek Samsung.

Uji Hipotesis II: Dari hasil output koefisien parameter diketahui bahwa hubungan konstruk sikap pada merek (*brand attitude*) ke niat beli ulang (*repurchase intention*) memiliki nilai standardized koefisien parameter sebesar 0,043 dengan nilai signifikansi 0,550. Dengan demikian maka hipotesis 2 dalam penelitian ini ditolak (tidak diterima kebenarannya). Hal ini dimungkinkan sikap positif responden tidak hanya pada satu merek (Samsung). Hal ini ditunjukkan dari jumlah handphone yang digunakan oleh responden yaitu 58 responden menggunakan handphone lebih dari satu dengan merek yang berbeda. Sikap positif konsumen terhadap banyak merek handphone inilah yang dimungkinkan menjadi penyebab tidak signifikannya pengaruh sikap pada merek (*brand attitude*) terhadap niat beli ulang.

Kemudian keunggulan yang dimiliki oleh masing-masing merek handphone (contohnya merek Samsung yang memiliki OS android unggul dalam hal koneksi internet) dan layanan purna jual dari merek handphone tersebut menjadikan responden bersikap positif pada beberapa merek handphone sesuai dengan kebutuhan responden. Kemudian *life cycle* produk handphone yang saat ini relatif cepat khususnya untuk segmen remaja dengan rentang usia antara 17 sampai 25 tahun serta banyaknya persaingan merek yang mengeluarkan produk sejenis juga dimungkinkan menjadi penyebab sikap positif pada merek Samsung berpengaruh tidak signifikan terhadap niat beli ulang tanpa adanya variabel lain seperti ekuitas merek sebagai pemediasi untuk pengaruh tidak langsung. Hal lain yang dimungkinkan menjadi penyebab sikap positif responden berpengaruh tidak signifikan terhadap niat beli ulang smartphone merek Samsung adalah umur/usia responden. Berdasarkan teori ekonomi mikro, terdapat asumsi bahwa konsumen selalu mencoba untuk memaksimalkan kepuasannya dalam batas-batas kemampuan finansialnya. Dengan demikian maka sikap pada merek tidak berpengaruh signifikan terhadap niat beli ulang smartphone merek Samsung dimungkinkan oleh kemampuan finansial dari 61 responden atau 53,52% dari total responden berumur  $\leq 20$  yang belum mencukupi karena belum bekerja dan kemampuan finansial responden cenderung masih dipenuhi oleh orang tua responden. Hal ini sesuai dengan pernyataan Kotler (2003: 202) yang menyatakan bahwa perilaku pembelian konsumen (dalam hal ini adalah niat konsumen untuk melakukan pembelian ulang) dipengaruhi oleh empat faktor yaitu faktor budaya, faktor sosial, faktor pribadi, dan faktor psikologis. Faktor pribadi yang dimaksud adalah keputusan pembelian konsumen dipengaruhi oleh karakteristik pribadi diantaranya usia dan tahap siklus hidup, pekerjaan, keadaan ekonomi, gaya hidup, serta kepribadian dan konsep-diri pembeli. Hasil hipotesis II dalam penelitian ini tidak mendukung penelitian Kurniawati (2009) yang menunjukkan bahwa sikap terhadap merek berpengaruh positif dan signifikan terhadap minat beli ulang.

Uji Hipotesis III: Dari hasil output koefisien parameter diketahui bahwa hubungan konstruk ekuitas merek (*brand equity*) Samsung ke niat beli ulang (*repurchase intention*) memiliki nilai standardized koefisien parameter sebesar 0,954 dengan tingkat signifikansi 0,001 (tanda p=\*\*\*). Hal ini memenuhi teori Aaker (1996) yang menyatakan bahwa produk yang memiliki *brand equity* yang kuat dapat mempengaruhi niat untuk membeli ulang.

## PENUTUP

### Simpulan

1. Terdapat pengaruh yang signifikan dan positif antara sikap pada merek terhadap ekuitas merek. Hal ini ditunjukkan oleh nilai standardized koefisien parameter sebesar 0,431 dengan signifikansi 0,001 (tanda p=\*\*\*).
2. Tidak terdapat pengaruh yang signifikan dan positif antara sikap pada merek terhadap niat beli ulang. Hal ini dapat dilihat dari hasil output koefisien parameter yaitu nilai standardized koefisien parameter sebesar 0,043 dengan nilai signifikansi 0,550.
3. Terdapat pengaruh yang signifikan dan positif antara ekuitas merek terhadap niat beli ulang. Hal ini dapat dilihat dari hasil output koefisien parameter hubungan konstruk ekuitas merek ke niat beli ulang memiliki nilai standardized koefisien parameter sebesar 0,954 dengan tingkat signifikansi 0,001 (tanda p=\*\*\*).

### Implikasi

Berdasarkan kesimpulan yang diambil dalam penelitian ini, maka saran yang dapat diberikan oleh peneliti adalah:

1. Produsen ponsel hendaknya memperhatikan bahwa ekuitas merek berpengaruh sangat tinggi terhadap niat beli ulang yaitu 95,4%, sehingga diharapkan produsen ponsel dapat terus meningkatkan ekuitas mereknya, agar memberikan efek yang optimal dalam meningkatkan jumlah pembelian yang aktual. Selain itu promosi juga perlu ditingkatkan supaya dapat meyakinkan dan merangsang konsumen untuk mengambil keputusan dalam menggunakan ulang produknya (Samsung).
2. Dengan mengetahui hasil penelitian ini bahwa sikap pada merek tidak memiliki pengaruh yang signifikan terhadap niat beli ulang, maka untuk penelitian selanjutnya dapat mengeksplorasi penyebab *research gap* pengaruh tidak signifikan antara sikap pada merek terhadap niat beli ulang. Selain itu, penelitian selanjutnya hendaknya memperluas obyek penelitian pada produk lain dan melakukan penelitian di luar variabel yang telah diteliti.

### Keterbatasan Penelitian

Dalam penelitian ini masih terdapat banyak keterbatasan yang memungkinkan untuk disempurnakan dan dikembangkan pada penelitian mendatang. Keterbatasan dalam penelitian ini antara lain:

1. Penelitian ini hanya dilakukan pada pengguna android Samsung di Sekolah Tinggi Ilmu Ekonomi Indonesia (STIESIA) Surabaya. Sehingga hasil penelitian ini tidak berlaku pada semua merek handphone.

2. Dua dimensi dari *brand equity* yaitu *brand awareness* dan *brand association* adalah dua elemen yang spesifik, namun dalam penelitian ini peneliti mengintegrasikan dua elemen tersebut menjadi satu sehingga sulit untuk menggambarkan yang betul-betul signifikan.
3. Variabel penelitian terbatas pada 3 variabel yaitu niat beli ulang, sikap pada merek dan ekuitas merek. Sehingga penelitian ini tidak dapat menjelaskan variabel lain yang potensial berpengaruh terhadap niat beli ulang.

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# SOME CONTRIBUTING FACTORS TO THE STUDENTS' ENGLISH ACHIEVEMENT

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*Abstract:* The present study is aimed to investigate the factors contribute to the junior high schools students' English achievement in East Java. The result of the study gives worth information about the contributing factors to the students' achievement as a part of the study of second language acquisition. It also provides a significant contribution to the area of language teaching of EFL. The study is qualitative which employs descriptive design. The method is applied as it is relevant to the aim of the study in which the researcher sets out the study by posing himself as the key instrument. A representative population and sample determination becomes one of the important aspects of consideration. The other aspects of the study such as data collection instrument and data analysis are designed and conducted carefully to obtain accurate and valid findings. The study discovers that there exist the external and internal factors which contribute or affect the junior high schools students' English achievement in East Java.

**Keywords:** contributing factors, students' English achievement, second language acquisition

## INTRODUCTION

The efforts to enhance English learners' achievement have been done by implementing various approaches and methods of English language teaching. One of the approaches is the integration of subjects matters and language learning which is commonly known as Content and Language Integrated Learning or CLIL. This approach is based on sound theoretical premises and has been trialled for many years in some countries. This approach firstly was coined by David Marsh from University of Jyväskylä, Finland in 1994. CLIL refers to situations where subjects, or parts of subjects, are taught through a foreign language with dual-focused aims, namely the learning of content and the simultaneous learning of a foreign language.

In recent years, the educational approach of Content and Language Integrated Learning (CLIL) has gained significant attention and acknowledgement in Europe and beyond. However, CLIL teaching has been practised for many years, from the Babylonian era to the early sixties when bilingual education was introduced in many schools around the world. Even if you are unaware of

the term CLIL, you may already have been using CLIL methodology for many years. CLIL aims to create an improvement in the second language competence and development of knowledge and skills in the other non-language areas (Lange, 2001)

In Indonesian context, this idea has been implemented as a part of the efforts to promote student achievements both for subjects matters and foreign language. Based on its Education System Act No. 20 2003, officially the Indonesian Government ran a school model called *Sekolah Bertaraf Internasional* or always abbreviated as *SBI* (International Standard School). This school model was stopped in July 2013 just as *Mahkamah Konstitusi* (the Indonesian Constitution Court) abolished Article No. 50 which regulated the setting up of the school.

Three major issues emerged on *SBI* in Indonesia i.e., 1) the curriculum to be used in such schools, 2) the use of the information and communication technology or ICT-based instructional media, and 3) the use of English as the medium of instruction (EMI) for Math, Science and Technology. In such model of school, the curriculum was enriched up in terms of the content of subjects materials by adapting to the curriculum used in OECD (Organization for Economic Cooperation and Development) or other developed countries (Depdiknas, 2006).

The use EMI appeared to be main problematic issue of the curriculum of *SBI*. The students should be taught Mathematics and Sciences in English. In the same time, the students have to struggle to learn English since the subject is the mandatory foreign language subjects to be taught in formal education. So far, no parties in Indonesia may claim that the English language teaching is supposed to be successful.

While the teaching of English as a mandatory subject in Indonesia still remains some problems, the teaching of academic subject matters had to be taught in English. Whereas, the kind of language associated with the learning of Mathematics and Science was very different from general English. Scientific and mathematical discourses were less contextualised and required high cognitive levels of comprehension. Cummins (1991:45) claimed that there were two levels of language proficiency i.e., the basic interpersonal communicative skills (BICS) and cognitive academic language proficiency (CALP). The second level of proficiency concerns with the language that was context-reduced and highly demanding cognitively. In other words, to perform effectively in Mathematics and Science, students should acquire CALP. In the same time, to develop CALP, the students should be given extra language support to help them deal with academic content, that was English.

The idea to put English as the medium of instruction was originally rooted on the theory which was introduced by Krashen (1985:15) well known as Input Hypothesis. Basically, this theory was due to the L1 developmet which perceived that the development from a learner's current stage of L1 development, I, to the next stage, i+1, is achieved through the learner comprehending

language which contains linguistic components at  $i+1$ . This theory is transferable to the context of L2 or foreign language acquisition. As Krashen (1985:71) claimed that for acquisition, whether L1 or L2, to occur the student should be exposed to large amounts of comprehensible input. Based on this underlying assumption, maximizing learners' exposure to the target language (EFL/ESL) would be very beneficial to the learners. Given more learning opportunity by exposing the learner to the target language is also called immersion model. Johnson and Swain (1997:53) asserted that immersion is a learning situation where learners with a high-status L1 are taught through the medium of the L2 in classes containing only such learners, usually by bilingual teachers.

The model of education to enact English as the medium of instruction or bilingual teaching was implemented in some countries. The Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT) announced an action plan that aimed to produce Japanese citizens who could function effectively in English in international setting in 2003 (Taguchi & Naganuma, 2006: 121). This action plan became the legal standing of the implementation of English as the medium of instruction in Japan.

In Indonesia, the implementation of English as the medium of instruction was based on the issuance of National Education Act No. 20/2003 which regulated that a particular model of school named *Sekolah Bertaraf Internasional* (International Standard School) should use English or biligually (English and Indonesian) in teaching Math and Sciences subjects. It means that the students learnt Math and Science in English or both in English and Indonesian. However, in Indonesian formal secondary education, English is the first foreign language learnt by the students.

Up to the present time, there have been several studies of the use of English as the medium of instruction both as second language (ESL) and foreign language (EFL) and native language of the learners in Asia but a few in the Indonesian context. The so-far studies were concerned with the teachers' attitude and belief about such kind of model as seen in a research by Mohammed and Nordin (2007), Pandhian and Ramlah (2008) and Fadhili et al (2009) conducted in Malaysia in which in some extents had similar characteristics with *RSBI/SBI* Indonesia. They investigated the impact of the implementation of bilingualism in teaching subject matters in the Malaysian school system. They found that the stakeholders' attitude on the use of English as the medium of instruction was positive. However, some other research on the area indicated disadvantages of the implementation of the program in Malaysia. Later, the research contributed to the policy of Malaysian government to stop the program in July 2009 (Jawa Pos, 2009).

A slightly different focus of the study was done in investigating the learners' feeling which was shown by the activation of languages and attitude to the languages they acquired. This study was to reveal the effects of English as the medium of instruction to the student's communication activities in the Philippines. From the result, it could be concluded that the use of English as the

medium of instruction for Science and Mathematics in schools throughout the country (Philippines) had not affected significantly to the use of Philippines languages as a means of oral communication in other domains (Smolicz and Secombe, 2004).

However, there have been very limited studies focusing on learning output and outcomes such as students' achievement on subject matters and the students' language proficiency. In Nigeria, a study by Makinde and Olobade (2006) investigated the achievement of student in learning Biology using Yoruba (the mother tongue). The study revealed that the Biology achievement of students who were taught in Yoruba were better than those who were taught in English. It means that the use of English as the medium of instruction for another subject in Nigerian context was not beneficial for the students' subject achievement. The study also revealed that in the other measure, the oral English proficiency of the students who were taught Biology bilingually were better than those taught in their mother tongue (Yoruba).

Therefore, conducting a study in this area in Indonesian context was critical as it related to the learning output and outcomes which became more important due to the government's policy. The scarcity of reserach in the area had encouraged the writer to conduct a study on English achievement of the students who were taught Math and Sciences in English in international standard schools. So it is tangible scientific effort to investigate the impact of such kind of instruction by describing and comparing the students' English achievement who were taught Math and Sciences in English and those who were instructed in *bahasa Indonesia*.

On the basis of the rationale, the present study investigated the potential factors contribute the students' English achievement of ex *Sekolah Menengah Pertama Bertaraf Internasional* (International Standard Junior Secondary School) or ex *SMP RSBI* and those of *Sekolah Menengah Pertama* (National Standard Junior Secondary School) or *SMP SSN*. The result of this study presumably will give theoretical and practical contribution to the theories of the teaching of English as a foreign language, the use of English as the medium of instruction in teaching subjects matters, and the authority of education. The result of the study is expected to be one of the considrations of policy maker in designing school model which employ English as medium of instruction, in particular in Indonesia to replace *RSBI*.

## RESEARCH METHOD

This study is qualitative which focuses in investigating the factors contributed the students' English achievement of the group which was taught Math and Science in English and of that which was taught Math and Science in *Bahasa Indonesia* (Indonesian). The subjects of the study who became the respondents or the source of data were the students of ex *SMPs RSBI* and *SMPs SSN* throughout East Java in academic year 2013/2014. Due to the broadness of the population and the



category of the subject of the study, sampling was applied in the study. Randomly the researcher selected the sample of each group which was treated as cluster from the list of schools and then included all the students in those schools in the sample. 3 (three) schools of each group were determined as the sample of this research.

The instruments employed in this research were documentation and interview. The first instrument was employed to get the data of the good achievers of English in junior high schools. It was also used to investigate the standard achieved by the sample schools. The second instrument was used to get data about the factors contribute to their achievement. Interview was carried out to investigate the factors which might contribute the students' English achievement. Patton (1990:196) claims that the purpose of interview was to find out what was in and on someone else's mind. The type of the interview in this study was guided one. The guided interview involved outlining a set of issues to be explored with each respondent prior to the interview, and was usually held in appointed time (Spradley, 1980:129).

The data analysis was conducted in three stages: reducing data, displaying data, and drawing conclusion or verifying the data (Miles & Huberman, 1992). Data collection, data reduction, data display, and data conclusion drawing or verification were cycles which are interacted before, during, and after finishing data collection.

## **RESULTS AND DISCUSSION**

Based on the interview, the data obtained were presented in respective order following the aspects appeared during the interview i.e., a) the students' attitude to English subject; b) learning strategy; c) the length of learning English; d) learning facility; e) English learning environment

### **a) The Students' Attitude to English Subject**

The most of the students (71 %) of ex *SMPs RSBI* and *SMP SSN* had a strong motivation to learn English. They had a good awareness that learning English would give them benefit. Being able to communicate in English made them possible to interact with various people all over the world. Some of the students (25 %) did not think that English was more important than the other school lessons. They supposed English as a common lesson and learnt it as what they did in another lessons. Therefore, the students did not count heavily on English. Some others (4 %) did not like English because they supposed that English was so complicated. They felt that learning English was burdensome for them because they had to do a lot things such as memorizing vocabulary, understanding tenses, and other linguistic rules.

**b) Learning Strategy**

The result of interview also described that there was a variety of ways or strategies performed by students in learning English. As the basis of analysis, definition of learning strategy given by Ellis (2001), Chamot (1987), and Rubin (1987) were used in this study. They defined way of learning and learning strategy as both general approaches and specific activities or techniques used to learn L2.

To support their English learning, the students employed varieties of ways. Some of them read English fiction as their supplementary reading materials. Many of them tried to find and read drug or food packages which provided the instruction of usage written in English. Several spent their time to listen popular English songs, to watch English television programs and films. They claimed that those strategies improved their English especially in terms of vocabulary acquisition.

**c) The Length of Learning English**

In terms of the length of time, the students' English learning was in the range between 7 up to 12 years. Most of the students (43 % of the total) had learnt English formally 7 years or since they were at the third grade of elementary school. Some of them (32 %) had learnt English since the first year of their elementary education. Many of them (25 %) had learnt English at school setting for 11 year or since they entered kindergarten. The average length of time of learning English of the students was 9,8 years. It means that they studied English since they were in kindergarten.

**d) Learning Facility**

Besides the school academic environment, the students got a good support from their parents in learning English. They were facilitated with adequate English learning materials and sources, like books and internet. Some of them were sent to private English courses. Some others were provided by their parents the private teachers to teach them English at home. Several of the students were asked to use English when they communicated with their parents.

Based on the data collection, in facilitating their learning, some of the students read English fiction such short stories and fairy tales. They did it to support their effort to learn English. They thought that the activity could help them enrich their vocabulary. In addition, a few of the students practiced their English with their schoolmates. They did it at school outside the lesson hours. Sometimes they practiced their English in another setting outside the school. Even in one of the schools, some of the students sometimes were conditioned by their parents to communicate with them in English. One of them was provided everything she needed to support her English learning because her parents planned to send her to pursue her tertiary education at overseas university.

### e) Learning Environment

Learning environment factor, in this case, concerned all the aspects of school which formally are well known as the standards of education. Based on the data collected from the document available in the schools, it was evident that all *SMPs SSN* and ex *SMP RSBI* already reached the eight national standards of education with variation of additional standards. The achievement of 8 national standards of education which covers Standard of Content, Process Standard, Graduate Competency Standard, Educators and Educational Personnel Standard, Infra-structure Standard, Management Standard, Finance Standard, Assessment Standard.

Based on the data obtained, ex *SMP RSBI* and *SMP SSN* almost shared the same standard of education. The very distinguish standard was the second one or process standard. In *SSN* schools, the medium of instruction was Indonesian but in ex *RSBI* schools, the Math and Sciences subjects were delivered in English or both in English and Indonesian.

There was a tendency that the students of both groups shared the same factors which potentially contributed to their learning outcomes. The factors investigated in the study were classified into three categories. i.e., individual, social, and formal learning factors. Individual factor in this study was related specifically to the students' attitude towards target language they learn. The students' attitudes towards English, which Gardner and McIntyre in Ellis (2001:510) included it as integrative motivation aspect, influenced much on the students' achievement. Even Gardner and Lambert in Ellis (2001:510) proposed that attitude was used as powerful predictor of achievement in formal situation. In other words, the students' achievement were aftermath of their attitude towards the language learning target. Therefore, in contrast to the previous group, the students with negative attitude towards English or they who devoted less time for learning English tended to possess low range of achievement. However attitude, as the other contributing factors to learning outcome also determined the students' success of learning. Smolicz & Secombe (2004) claimed that the learners' positive attitude considerably affected the success of language learning.

In relation to learning strategy, there existed a variety of ways or strategies performed by the students in learning English. This study had identified a number of strategies i.e., reading English fiction or another English reading materials, practicing their English outside the lesson hours and another setting outside the school, listening popular English songs, watching English television programs and films. The students who equipped themselves with those learning strategies reached a good English achievement. Based on a number of the studies Ellis (2001) concluded that learning strategy undisputedly influenced the development of language the learners attempted to master.

The last sub factor the students got in learning English was supportive things which facilitated the learning. Many of the students got a good support particularly from their parents in

terms of learning facility fulfilment. Besides books and dictionary which were relevant to English lesson, many of the students were given the internet facility at home from their parents. Some of them were sent to private English courses or the parents invited the private teachers to come their homes. Several of the students got a good supportive learning environment in which the parents asked them to use English when they communicated with their parents. Even a few of them had instrumental motivation as the effect of the parents who planned to send them studying overseas. The students with those learning supportive facilities tended to reach a good achievement.

It is undisputedly that the fulfilment of the facility standards which are also commonly known as formal learning environment contributed much on the students' learning achievement. This is congruent with the literature, where findings determined that facility adequacy was directly related to student performance (O'Neill, 2000). The facility standards reached by ex *SMPs RSBI* potentially gave the students chance to explore themselves in internalizing their knowledge. The sufficient and convenient learning facilities had a strong link with the learning process (Blair, 1998 in McGowan, 2007:4). Many studies showed that environmental topics such as lighting, color and indoor air quality positively correlate with increase academic performance (Chan, 1996; Hale 2002; Rydeen, 2003 in McGowan 2007:95). Different studies conducted by Ayodele (2000) and Vandiver (2011) in Alimi et al (2012:45), showed that a positive relationship exists between availability of facilities and student academic performances. Even in specific area of studies, Cynthia & Megan (2008:67) and Philiat & Wanjobi (2011:110) confirmed that there existed a strong and positive relationship between quality of school facilities and student achievement in English and Mathematics.

In the study of second or foreign acquisition, learning factors covered a lot of aspects which were in general could be classified into external and internal ones. Individual and social learners/students factors fell under the discussion of external factors of second language acquisition. The study of these aspects tried to explain how learners learnt a second language, why learners varied in the speed with which they learnt, and why most learners failed to achieve full target-language competence (Ellis, 2001:193-4). The individual learner factors which actually originated within then students themselves could be affected by socio-psychological factors and vice versa.

### **The Implication of EMI on Education of Indonesia**

Recently, EMI or CLIL (Content and Language Integrated Learning), or also known as 'Content-based instruction', 'English across the curriculum', and 'Bilingual education' was adopted in many schools in the EFL contexts including Indonesia before it was cancelled by Constitution Court in January 2013. The objectives of using English to teach Math and Science was to enhance the students to possess good command of English and enable school graduates to participate in

global communication in Math and Science. The objectives were parallel to Deller and Price (2007:34) who revealed that the belief underlying EMI was that teaching subjects through English provides a better preparation for professional life than teaching English as a subject empty of content.

The policy triggered overwhelming reactions of many parties throughout the countries especially the stakeholders of education. Some asserted that with the implementation of the policy of teaching Math and Science in English, students would become more prepared to face globalization. Others were worried that the usage of English would erode the function of Indonesian language which led to the decrease of nationality (Jawa Pos, 2013)

The previous scientific investigation seemed not endorse the policy. Rachmajanti, Sulistyono, and Widiati (2008:71) investigated that the English proficiency of the English teachers and the Math and Science teachers was not really sufficient as indicated by their low score in TOEFL-Equivalent (ranging from 300-400), far from 500 as the minimal requirement. They also found out that the schools which have implemented the *RSBI* curriculum (NSE+X) in the last 3 years failed to show signs of success.

The present study, which was conducted 5 years later, found out that the use of EMI in Math and Sciences contributed on the students' English achievement. The span of time of 5 years gave enough time and chance to ex *SMP RSBI* enhancing their standard of education quality. However, there were some other things besides EMI which influenced the students' achievement. In other words, the use of EMI would be beneficial to enhance the quality of instruction specifically the students' achievement if some other conditions were fulfilled in terms of the teachers' qualification, conducive learning environment, and other learning instruments which were required in the process or all aspects as what were regulated in 8 National Standards of Education.

To trace back, EMI became one of the characteristics of *RSBI/SBI*. The government expended a big budget to run the school model or education program which was pioneered since 2006. A lot of energies of all the parties involved in the program was consumed to run *RSBI/SBI*. Apart from the cancellation of Article 50 Item no. 3 the Educational Act no 20/2003 by Constitutional Court, from academic perspective at least, the implementation of the school model should become a good lesson for the nation especially the government. The model of education implemented in *RSBI/SBI* can be used as the basis of plan and strategy in designing quality of education.

## CONCLUSION

The factors which contributed to the students' English achievement of ex *SMPs RSBI* and those of *SMPs SSN* were individual, social, and formal learning ones. Individual factor related

to the students' attitude and motivation to learn English. Social factor comprised the length of time of learning, the way or strategy of learning, and the supportive things the students got in learning English. The formal learning factor is concerned with the fulfilment of 8 National Standard of Education by the schools where the students studied in. Specifically, the use of English as the medium of instruction of Math and Science in ex *SMPs RSBI*, as a part of Process Standard, was potential to result in the students' English achievement. Those factors coexisted to contribute much on the students' success of English learning or the students' English achievement. However the students' English achievement of ex *SMPs RSBI* was better than those of *SMP SSN*. It is in line with the Input Hypothesis theory, the input of English which appeared as language exposure obtained by the students ex *SMPs RSBI* was much more than those of *SMP SSN*.

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# BIOLOGY TEACHERS' SELF PERCEPTION ON PEDAGOGICAL COMPETENCE

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*Abstract:* The present study aims at investigating biology teachers' self perception on pedagogical competence in secondary schools in Jember regency. Pedagogical competence as of the teachers' competence has been mandated by Peraturan Pemerintah Republik Indonesia (Government Regulation of Indonesia) Number 19 Year 2005 Article 28 which states that teacher must possess academic qualification and competence as the learning agent, healthy both physically and mentally, and be able to achieve national education goal. This study is qualitative which employs questionnaire to collect the teachers' profiles as the data of the research. The questionnaire consists of 20 items which covers aspects of 1) Preparation (3 indicators items); 2) Instructional Planning (3 indicators of items); 3) Instructional Implementation (4 indicators items); 4) the Use of Instructional Media ( 3 indicator items; and 5) Conducting Instructional Evaluation (2 indicator items). The study reveals that the teachers' perception on pedagogical competence is fair (the average score is 3.86) which falls under the sub aspect of indicators i.e., preparation (3.83); planning (3.46); implementation (4.12); the use of instructional media (3.80);

Keywords: biology teacher, self perception and pedagogical competence

## INTRODUCTION

The very essential and required skills in the corporate world of the 21st century are problem solving, communication, collaboration, learning skill, critical thinking, ethics, technical skill, and variously working (Stein et al., 2003). This is in line with the *Framework for 21st Century Learning* (2008) which states that students' learning skills and innovations required for a more and more complex life and working environment in the 21st century are: 1) Creativity and Innovation, 2) Critical Thinking and Problem Solving, and 3) Communication and Collaboration.

Skills as expected in the 21st century can also be carried out in learning Biology. where Biology as a field of science provides a variety of learning experiences to understand the concept through the process of science and produce the attitude and creativity. This skills of process include the skills to observe, hypothesize, use materials and tools properly by considering the security and

safety, ask questions, classify and interpret the data, and communicate the findings orally or in writing, understand and sort factual information relevant to test ideas or solve everyday problems. Biology is developed through realistic thinking ability, inductive and deductive to resolve issues related to the natural events. Solving qualitative and quantitative problems is performed by understanding mathematics, physics, chemistry and other supporting knowledge.

In Indonesia, as a part of the Asean Economic Community (AEC), the skills are carried out through scientific inquiry learning to foster the ability to think, work and behave scientifically and communicate it as an important aspect of life skills. Therefore, it is necessary that teachers prepare the materials well and evaluate learning achievement for feedback and reflection for themselves and learners.

Expert teachers are effective and experienced teachers, who have developed various solutions of problems in class, their knowledge of the extensive process and content of teaching and well organized (Woolfolk, 2008).

This research is conducted, therefore, to know Biology teachers' pedagogical competence teaching in SMP/MTs and SMA/MA from self perspective carried out in Biology learning to prepare learners in the 21st century and AEC.

## **RESEARCH METHOD**

This is a qualitative research by collecting data as the technique with purposive sampling technique by considering: 1) Biology teachers who are teaching in SMP/MTs and SMA/MA/SMK in Jember regency, 2) He/She is willing to fill up the questionnaire, and 3) The schools are in cooperation with Biology Department (Major) of Teacher Training and Education Faculty of University of Muhammadiyah Jember, held on October 2013.

The data collecting instrument used a questionnaire with scale 5. The questionnaire used to know biology teachers' pedagogical competence are 20 items comprising: 1) Preparation with 3 indicators items, 2) Instructional Planning with 3 indicators items, 3) Instructional Implementation with 4 indicators items, 4) The Use of Instructional Media with 3 indicators items, and 5) Conducting Instructional Evaluation with 2 indicators items (modified from Uno, 2012). The data is the score from the questionnaire resulted from the biology teachers and is analyzed according to qualitative descriptive.

## **RESULT AND DISCUSSION**

There are 10 Biology teachers who are willing to fill up and return the questionnaire coming from 10 schools. The schools of the teachers can be classified into: 1) 6 teachers of SMA,



2) 2 teachers of SMP, 3) 2 teachers of MTs (Table 1). Among the ten schools, the school status are six state schools and four private schools.

**Table 1. The Biology Teachers' Schools**

No.	School	Total
1	SMA	6
2	SMP	2
3	MTs	2

The mean score of the Biology teachers' pedagogical competence teaching in SMA is 78,33 or the mean score of each indicator item is 3,91 or is completed as 4 (categorized as "often" to do or "good"). The mean score of the Biology teachers' pedagogical competence teaching in SMP is 79,5 or the mean score of each indicator item is 3,975 or is completed as 4 (categorized as "often" to do or "good"). While The mean score of the Biology teachers' pedagogical competence teaching in MTs is 71,5 or the mean score of each indicator item is 3,575 or is completed as 4 (categorized as "often" to do or "good") (Table 2).

**Table 2. Mean Score of the Biology Teachers' Pedagogical Competence**

No.	School	Range of Score	Mean Score
1	SMA	72-87	78.33
2	SMP	79-80	79.5
3	MTs	69-74	71.5

NB.: Maximum score: 100

Based on the mean score of each indicator group, the result shows that: 1) Preparation is 11.5 with 3.83 as the mean score, 2) Instructional Planning is 10.4 with 3.46 as the mean score, 3) Instructional Implementation is 16.5 with 4.12 as the mean score, 4) The Use of Instructional Media is 11.4 with 3.80 as the mean score, and 5) Conducting Instructional Evaluation is 7.8 with 3.90 as the mean score (Table 3).

However, the use of media based Information and Communication Technology in particular, the mean score is 3.6 and the range of score is 2-5. The mean score of 3.6 shows that Biology teachers using the media based Information and Communication Technology is "seldom" to "often".

**Table 3. Biology Teachers' Pedagogical Competence**

No	Pedagogical Competence	Score		
		Range	Mean	Per Indicator
1	Preparation (3 indicators)	9-14	11.5	3.83
2	Plan (3 indicators)	9-12	10.4	3.46
3	Implementation (4 indicators)	15-19	16.5	4.12
4	Use of Instructional Media (3 indicators)	9-15	11.4	3.80
5	Conducting Instructional Evaluation (2 indicators)	6-10	7.8	3.90
	Total	69-87	77.2	3.86

Based on the data analysis, Biology teachers' pedagogical competence per indicator is only around 3.86 or less than the score of a good category. The Biology teachers' preparation in biology learning obtained an mean score of 3.83 . While for the instructional planning, the mean score is 3.46; implementation is 4.12 ; use of media is 3.80 ; and instructional evaluation at the end of the study is 3.90. Among the scores mentioned, they are generally still less than good , except on implementation with good score .This shows that the biology teachers' pedagogical competence are below "good" and above "enough".

That professional teachers are those mastering seven fields of professional knowledge . 1) academic subjects they teach ( master content of material taught) 2) General teaching strategies for all subjects (such as the principle of class management, effective teaching and evaluation) 3) Appropriate curriculum materials and models of teaching for the subject matter and taught class 4) knowledge of the specific subject (eg, strategy or specific ways to teach certain students , to teach certain concepts) 5) characteristics and cultural background of students 6) management or students setting (eg, in pairs , small groups, teams, class, school, and society) and 7) suggestions and aim of teaching.

The results of Lubis' research (2012) are basically biology teacher has been able to draw up lesson plans well, its total mean score of SMA Biology teachers on aspects of assessment is  $\bar{X}$  (2.81±1.33). In addition, the mean score of the highest aspects of assessment is  $\bar{X}$  (4.29±0.76) to the aspects of assessment formulation of the problem and the mean score of the lowest aspects of assessment is  $\bar{X}$  (1.86±1.07) to the aspects of detail assessment of learning scenarios. Besides, in the student assessment, the mean score of the total aspects of assessment is  $\bar{X}$  (3.02±1.29). In addition, the mean score of the assessments of students in the aspects of the highest ratings is  $\bar{X}$  (4.00±1.26) to aspects of the assessment of the formulation of each item using words / phrases causing double interpretation and the mean score of the lowest assessment aspects is  $\bar{X}$  (1.33±0.51) to aspects of assessment clarity of assessment criteria described in the assessment. Classroom observation results show the total mean score of Biology teachers on aspects of assessment is  $\bar{X}$  (3.60±1.13). In addition, the mean score of the highest aspects of assessment is  $\bar{X}$  (4.25±1.38) to aspects of the pre-learning assessment and the mean score of the lowest aspects of assessment is  $\bar{X}$  (3.00±1.06) to the aspects of the process and the assessments of learning outcomes and  $\bar{X}$  (3.00±1.30) to the aspects of assessment of learning cover. A peer assessment results demonstrate personal competence and social competence of Biology teachers who have passed the certification is good, and the student questionnaire shows good results as well. In the personal competence, the mean score of the aspects of assessment is  $\bar{X}$  (4.11±0.50) on teachers' questionnaire and in the social competence, the mean score of the aspects of assessment is  $\bar{X}$  (4.01±0.51) on the teacher questionnaire. This study has implications for the importance of sustainable development for certified biology teachers.

Whereas the process of Biology learning prepared by teachers with good or adequate pedagogical competence will result learners in accordance with the purpose of education . This is like the result of Rachmawati's research (2007) that teachers who apply the student worksheet with inquiry learning was effective in increasing the students' activity and achievement.

In the process of class learning, the very urgent thing a teacher needs to do is seeking or creating a good teaching and learning conditions. with good learning conditions, it is expected that learning process will take place well too (Munandar, 2013). good learning process to minimize the possibility of failures and errors in learning. Therefore, it is important for a teacher to have the ability of creating good teaching and learning conditions and to achieve an optimal level of effectiveness in instructional activity class processing capability is one factor that a teacher needs to master, in addition to other factors. The success of a teacher's teaching is not only directly related to teaching and learning, for example purposes..... Besides, Cain and evans (1990 in Nuryani, 2005) state that science contains four things: 1 content or products 2 process or method 3 attitudes, and 4 technology. if science contains four terms, then when learning science students have to undergo four points. Thus in learning science, students should not only learn the product, but also the aspects of the process, attitudes, and technology for students to truly understand the science as a whole. To that end, Biology teachers' pedagogical pedagogical competence are indispensable in the process of teaching and learning biology.

## CONCLUSION

The result of the research is concluded that Biology teachers' pedagogical competence in Jember is 3.86 (or categorized as above enough and below good). The details are: The mean score of preparation is 3.83 ; Planning is 3.46 ; implementation is 4.12 ; use of instructional media is 3.80 ; and evaluation of learning is 3.90. While ICT-based learning media usage by is 3.6

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## INCREASE ABILITY CREATIVE ECONOMIC THINKING THROUGH ENTREPRENUERSHIP EDUCATION

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### *Abstract*

*Entrepreneurship education is importance to thinking development about creative economic for student, who seek students to become good entrepreneur in the around or their society. Thinking development for creative economic, very importance to increase ability of student for welfare and good studentship. Phenomena of Indonesian countries, in the era of ASEAN Economic Society will be open capital and resources. With spirit of free trade and liberalization can will be entry of foreign capital and human resources through opened of free trade and competitiveness so nurturing impact on high competitiveness in the welfare of live. Moreover, student need to increase ability about creative thinking for creative economic through Entrepreneurship Education, with hope can be competitive for welfare in the live. With the Entrepreneurship Education, student can be treatment and drill in the case studies about free trade and liberalization, so they have ability to foster creative thinking and development creative economic in their live for welfare on their society. So, Entrepreneurship Education is very importance for increase creative thinking to develop ability creative economic for welfare development of student.*

Keyword: Creative Economic; Entrepreneurship Education; Student Ability.

## **I. INTRODUCTION**

### **A. Introduction**

Creative economy has emerged from economic environment of the 21st century and is based not on plain consumerism made of utilitarian demand consumption, but on sophisticated symbolic consumerism constructed of elaborate higher social demand. (Rasa, 2011). Creativities in the economy and in education distinguishing two accounts, personal aesthetics and the design principle. The first emerges in the psychological literature from sources in the emphasizing the creative genius and the way in which creativity emerges from deep subconscious processes, involves the imagination, is anchored in the passions, cannot be directed and is beyond the rational control of the individual. This account has a close fit to business as a form of brainstorming, mind-mapping or strategic planning, and is closely associated with the figure of the risk-taking entrepreneur. Design principle is both relational and social and surfaces in related ideas of social capital, situated learning, and accounts of commons-based peer production. It is seen to be a product of social and networked environments and intelligent environments in which everything speaks.

Creativity is the ability to generate something new, merging data perceptions and matters in order to produce new and useful things Economic development of a country is always associated with political development. Reciprocation of economic growth under the influence of government policy and regulatory power. The business world is the backbone of the national economy, so efforts should be made to be improved continuously. National movement is expected to foster a culture of entrepreneurship and work ethic of Indonesia, so as to give birth entrepreneurs-new entrepreneurs a reliable, competent and independent. It is very important to remember that the actual entrepreneurial activity not only at the level of micro-economy, but also at the level of incoming macro-economy. All that is in the development of an intelligent, a comprehensive and fully as highlighted in the Strategic Various observations of the reality on the ground describe the learning system in colleges and in high schools today have not been fully and effectively build innovative creativity to develop a comprehensive strategic plan as expected by Kemendikbud (2011).

Entrepreneurship education is defined as life-long learning, as a process of developing concepts and practical skills to recognize opportunities, major resources and efforts to manage a business. Entrepreneurship education requires paradigm in learning methodologies. According Leonardos (2011) there are some cases where individuals training centered on students and followed by coaching support and connecting to the private sector, so the impact is obvious, particularly in relation to: (a) practical approaches, (b) the amount of students who are considering opening a business in the future, (c) the number of students who can now connect their learning and their work in the future. Young people need help in formulating business ideas, encouragement and motivation, while adults require more assistance related to business management. Besides planting values and entrepreneurial spirit still needs to be pursued to foster the younger generation so that interested to go and pursue the profession entrepreneur. With this effort expected quality and quantity of youth entrepreneur can be increased gradually towards quotas that are ideal for accelerating economic development and improving people's welfare.

## **B. Theories Overview.**

Creativity and innovation had a close relationship, because creativity means the ability to think of something new and different, while innovation is the ability to perform, apply something different. Thus, the most important in entrepreneurship is the ability of employers to be more creative and take advantage of innovations in everyday business activities. An entrepreneur will be successful if it has always been the creative and use their

creativity. According Gwee (2007) to the face of increasingly complex in the global economic competition, then creativity is very important to create competitive advantage and business continuity. Basic values that are important in entrepreneur include: creativity, innovation, courage to face risks, business ethics and norms, as well as responsible and self-disciplined.

Define conceptually the “creativity economy” and suggest a model that interrelates creativity, knowledge, and innovation economies. The “creativity economy” surpasses earlier concepts of the “creative economy” (creative industries, creative occupations). Discuss patterns of a complex dialectic and cyclical interaction between phenomena of a crisis and creative and/or innovative activities. Economic growth stimulates investments in innovation that drive creativity and innovation, consequently resulting in further economic growth. However, at a certain level, creative and innovative activity may peak in context of the economic cycle, and the rate of economic growth could be slowing down again. If there is too much innovation, then this creates challenges in the sense of questioning the established structures, finally creating a need for developing new structures. Organizations, societies, economies, or systems can be more or less successful in doing so. There operates a coevolution between knowledge, innovation, and creativity on the one hand, and the knowledge economy and knowledge society on the other. The more advanced and mature a knowledge economy (creativity economy) and knowledge society (creativity society) are, the more knowledge, innovation, and creativity can be absorbed and are even being demanded for further progress.

Theories in economic development incorporate entrepreneurship education as an important tool for the development of micro and small business sector is dominant. Many businesses cannot develop due to, among others, the lack of qualified human resources. Foster the spirit of entrepreneurship among the younger generation will not only contribute to reducing unemployment, but also can help boost the productivity and competitiveness. Attempts to conceptualize entrepreneurship education, still continues to be done. But until now has not appeared to be mutually agreed definition. Where as, in fact, entrepreneurship is not always synonymous with entrepreneurial character because an entrepreneurial character may also be owned by a non-entrepreneur. Entrepreneurial covers all aspects of the work, both private and government employees. Boopen says (2009) the linked between entrepreneurship education and entrepreneurs are those who make efforts in creative and innovative way to economic growth. Entrepreneurship is a process of applying creativity and innovation in gathering resources to find opportunities and Santrock (2005) share if

entrepreneurship improvements in solving problems and finding opportunities to improve life. Entrepreneurship is an attempt to create added value by way of Entrepreneurship that arise when an individual dared to combine resources in ways new and different for developing businesses and new ideas. Entrepreneurial process includes the use of all the functions, activities and actions related to acquisition opportunities and the creation of business organization to win the competition (Thor & Harries, 2013).

According to economist Poulis & Plakoyiannaki (2013), the idea is a very important economic goods, is more important than the object that is emphasized in most economic models. In a world with physical limitations, the discovery of great ideas along with the discovery of millions of small ideas that caused the economy to keep growing. Says of Lon Chen (2009) the idea entrepreneurship is to combine instructions that make our physical resources are limited preparation becomes more valuable. Internationally, the creative economy plays an important role in enhancing the image and identity of a nation within the framework of Nation Branding. The image is the impression that a poor country because people do not have access to the ideas and perceptions received by a person when he saw and heard that used in the national industry to generate economic value feel something about Indonesia. The image should be built in a planned and found measurable results that can provide a positive impact on the nation. According to Howkins (2009) new economy has emerged around the creative industries are controlled by the law of intellectual property such as patents, copyrights, trademarks. Creative Economy is a new economic era that intensify information and creativity by relying on the ideas and the stock of knowledge of human resource royalties, and design. Creative economy is a development concept based on the main production factor in economic activities. The economic structure of creative assets that have the potential to increase economic growth. (Ozughalu & Ogwumike, 2013). World transformed rapidly with the growth of the natural resource-based economist for Human Resources based, from the agricultural era to the industrial era and can be seen from the development of an economy based on the flow of ideas. In theory, economic growth is divided into several waves. Which has been accepted as an economic flow that can be seen in the economic development of civilization into three waves. The first, wave is the wave of the agricultural economy. Secondly, the wave of the industrial economy, and the third is the wave of the information economy. Then predicted the fourth wave is a wave of creative economy-oriented ideas and creative ideas.

That makes entrepreneurship attracts many parties to understand it is to contribute entrepreneurial attitudes acquired various parties to perform actions related to



entrepreneurship. For example, Timons and Spinelli (2007) make the grouping needed for entrepreneurial action in six issues: (1) Commitment and determination, (2) Leadership, (3) Obsession to the opportunity, (4) tolerance toward risks, ambiguity, and uncertainty, (5) Creativity, and (6) Motivation for achievement. Entrepreneurship is a dynamic process for the planned economic activity taking into account the strengths and weaknesses and the opportunities and barriers in an effort for welfare. Therefore, the significance of which is contained in entrepreneurship, namely: science, art, behavior, traits, characteristics, and one character who has the ability to bring innovative ideas into real world creatively. So (Hamid, 2004) there are three major indicators of entrepreneurship, namely: (1) finding a job, preparing a business, find it impossible to get a job, (2) already have a job but have not begun to think of something new (creative), acting to do something new (innovative), and (3) desire to create value-added. Therefore, a person called the "entrepreneur" absolutely must have the ability to always think of something new, do something new act, and wants better. Central Bureau of Statistics (2009) shows that the largest number of unemployed graduates from the education unit at the elementary and secondary education. The government has sought to promote entrepreneurship, but these efforts have not brought any significant effect because there are many people who are not productive every year. That raises the question, how far the successful implementation of the National Movement Promoting and Cultivating Entrepreneurship has been done since 1995 and what the impact of the program as it is. If no serious treatment to this problem is not likely the unemployment rate will continue to increase every year.

Importance of Entrepreneurship Education in Higher Education can foster entrepreneurship in students character can even be integrated in a variety of related subjects. Alma (2009) says lecture material developed from courses related to the norms or values associated with the entrepreneurial context of everyday life. Thus, learning the norms and values of the various subjects that can complement and enrich the vision of entrepreneurship education is not only on the cognitive level, but touched on internalization, and practice in the life of students. Entrepreneurship Education in Higher Education in physiological, cognitive, moral reasoning, psychological development can in still a responsible attitude to improve the welfare of the students themselves. Some people say that entrepreneurship education a shared responsibility between families, communities and the government, as implemented entrepreneurship education within the community. In terms of organizing learning experiences would be better if students have empirical experience in managing a business or entrepreneurial spirit. This does not mean that the organization of the entrepreneurship

education should be abandoned. Organizing the course needs to grow through relevant courses, and experience developing business processes need to be developed so as to support the development of talent and interest in entrepreneurship. Suryana says (2011) Lectures entrepreneurship needs to communicate learning gives students the opportunity to actively develop the potential and aspirations of its business that clearly can inspire students to experience daily life in the community.

Creative economy is an economic flow that is more effective in bringing better economic growth. Recognizing this, the Government through the Ministry of Commerce, Ministry of Industry and Ministry of Cooperatives continue to study as the basis for the development of creative economic. Given their potential for creative industries to the economy, the government continued to hold events (activities) to stimulate the growth of the creative industries. In Indonesia, the echo of the Creative Economy will start from the problems the importance of improving the competitiveness of national products to face the global market. The Government through the Ministry of Commerce in collaboration with the Ministry of Industry and Ministry of Cooperatives and Small and Medium Enterprises (SMEs) and supported by the Indonesian Chamber of Commerce and then form teams Design Power which aims to put Indonesia into products of international standard products but still has a national character received in the market world. Once aware of the contribution of the creative economy of the state, the government subsequently conducted a more intensive study and launch the standard guidelines for the development of the creative economy.

Strategies need to be developed in Entrepreneurship course is to develop the art and talent backed by knowledge, skills and attitudes to effectively achieve success in the business world. Therefore, the strategy is a combination of science and art. Studies related to knowledge, attitudes and skills. While the arts are more likely to talents and interests and attitudes of one's life.

### **C. Entrepreneurship Education to Increase Creative Economic.**

Creativity is the ability to generate something new, merging data perceptions and matters in order to produce new and useful things Economic revolution continues to roll into various aspects of life towards the improvement and viability. Policy makers have realized the importance of the role of entrepreneurs in creating economic growth to create economic welfare of society. Madalina says (2012) entrepreneurship holds a dominant role in turning the wheels of the economy both locally, regionally and globally. According Zimmerer (2008) and the dynamic entrepreneurs who are committed to success, shown to affect the economic

growth and prosperity. Entrepreneur who has a leadership spirit and soul of this entrepreneur will lead the economic revolution towards raising living standards more viable. Amid the liberalization of the ASEAN Economic Community, according Frinces (2011) need to be instilled values of entrepreneurship, such as creativity, innovation, moderate risk, spirit and optimistic and is responsible, in the younger generation, especially through Entrepreneurship education, so that the soul and spirit the younger generation can be more competitive in the face of competition in the era of the ASEAN Economic Community. The Role of Entrepreneurship education, Duanmu (2013) says its needed to prepare the spirit of young people to become active participants in the revolution and participatory economy toward positive change and lasting.

As a discipline, then entrepreneurship science can be learned and taught, so that every individual has the opportunity to perform as an entrepreneur. Even to be a successful entrepreneur, having talent is not enough, but also need to have knowledge of all aspects of the business to be practiced. The task of the entrepreneur very much, among others the task of taking a decision, technical leadership, organizational leadership and to instill the values, attitudes and nature entrepreneurship in entrepreneurship education should be developed models of creative learning and innovative economy, among others: (1) Direct instruction, (2) Cooperative learning, (3) Problem Based Learning, and (4) Learning Through Inquiry.

Direct Learning Model many inspired by social learning theory is often called learning by observation. John Dollard and Albert Bandura (in Rusman, 2007) believes that most people learn through observation selectively and considering the behavior of others. The rationale of this direct teaching model is that students learn by observing selective, remembering and analyzing. On the basis of these ideas, which needs to be avoided is the transmission of knowledge is too complex. In general, knowledge can be divided into two types: declarative knowledge and procedural knowledge. Declarative knowledge is knowledge about something. While procedural knowledge is knowledge about how to do something. In applying direct teaching, knowledge is delivered to students need to be simplified, both declarative and procedural knowledge.

Learning Model Cooperative by John Dewey (in Rusman, 2007) classroom should be a reflection of the larger society. Then the activities in the classroom needs to provide experiences for students to work in groups. Cooperative learning model is reminded that the cooperation and work in the group will give better results. Setting the class in cooperative learning, need to meet three conditions, namely: (a) any direct contact, (b) equally participate in group work, (c) an agreement between members of the group about the classroom setting.

Cooperative learning model is quite important because students can learn by working with friends. Members of the group are more able to be able to help his less fortunate. Each member of the group still contributes to the achievement of the group. And more importantly all the group members can socialize with other group members so that it will train social skills of students in society.

Problem Based Learning, these have common characteristics that present to students an authentic and meaningful issues that will provide convenience to students to conduct an investigation and inquiry. While the special features in this model, namely the submission of questions and issues, focusing on the linkages between disciplines, the investigation is authentic, to produce a product / work, and their cooperation. Authentic problem is that there are problems in daily life and directly beneficial if found to completion. While academic problems are problems that arise due to the influence of a problem giving rise to other problems. For example, how the influence of fuel price increases of prices of basic materials?

Model of learning through inquiry is a teaching model that emphasizes the importance of helping students understand the structure or the key ideas of a discipline, the students actively involved in the learning process, and gives confidence that learning will occur through personal discovery. Bruner (in Rusman, 2007) who pioneered the discovery learning model is believed that the model of the present invention will stimulate students to conduct investigations so finding something. For example lecturer presents a topic to the students about the events that provoke or cognitive conflict, so the motivation and curiosity of students hooked. Discovery learning model is better suited to instill the concepts that can be found through trial and investigation.

Policies related to Entrepreneurship Education is an effort to allow students to create a business/self employment. The college graduates are expected to have the integration of entrepreneurship education from entrepreneurial character and conduct yourself. College graduates are required to face obstacles and challenges arising from the change. Challenges that occurred in the era of globalization is the depletion of the quality and competitiveness of the Indonesian independence. Through the development of entrepreneurship lectures, students are expected to be more creative and innovative ways to face the changes and challenges of the future. Students are able to enhance the competitiveness required in the global competition. The trend of change can not be avoided all the parties, whether individuals, communities, nations. Students need to gain access to quality education, affordable, relevant, efficient and effective, so that they can compete with the entrepreneurial spirit.

Business ethics and norms in the basic values that must be held to ensure sustainability in business activities in any field. Business ethics is an important basis and must be considered primarily to create and protect the reputation (goodwill) of business regardless of its form. Therefore, according to Zimmerer (2008), business ethics is an issue that is very sensitive and complex, because ethics is more difficult to maintain its reputation rather than destroy it.

Entrepreneurship Education Program is essentially trying to develop the science and the art of entrepreneurship. Since economic growth is influenced by the social and political conditions of a country, the entrepreneurship education should equip students' skills in reading and observing the social and political developments in their communities. At first, entrepreneurship is an innate talent and honed through hands-on experience in the field, it is now the paradigm has shifted. Entrepreneurship has become a discipline that studies the values, skills (abilities) and behavior in the face of life's challenges with the opportunity to obtain a variety of risks that may be encountered. As a scientific discipline, the science of entrepreneurship can be learned and taught, so that every individual has the opportunity to perform as an entrepreneur. Even to be a successful entrepreneur, having talent is not enough, but also must have knowledge of all aspects of the business that will be practiced. The task of the entrepreneur is very much, such as the task of taking decisions, technical leadership, organizational leadership and commercial, capital adequacy etc.

Entrepreneurship education seeks foster creativity and innovation in business opportunities. Creativity is thinking new thinking and innovation is doing something new (doing new things). Creativity is defined as the ability to develop new ideas and to discover new ways to solve problems and find opportunities. Innovation defined as the ability to apply creativity in order to solve the problems and opportunities to enhance and improve living standards. Therefore, entrepreneurship education seeks to train students to think and act patterned new or something old thinking in new ways.

#### **D. Conclusion**

Based on the above analysis of the exposure can be stated conclusions, as follows:

1. Development Entrepreneurship Education, can be treatment and drill in the case studies about free trade and liberalization, so they have ability to foster creative thinking and development creative economic in their live for welfare on their society.
2. Creative economic ability can be foster skill to of student a strong workforce in spirit to employment their source. The substance of entrepreneurship education is as a vehicle to

encourage the creation of human resources for competitive excellence and support the growth of the welfare society.

3. Entrepreneurship Education is very importance for increase creative thinking to develop ability creative economic for welfare development of student.

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# **APPLICATION OF PROJECT BASED LEARNING MODEL TO IMPROVE STUDENT LEARNING OUTCOMES ON BUSINESS PRESENTATION THEME**

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## **Abstract**

The purpose of this research is to improve learning outcomes of administration office education student faculty of economy Surabaya State University through the implementation of project-based learning model learning on business presentation theme. It is a class act research consisting of two cycles. The subject is students of administrative offices education 2nd semester of academic year 2014/2015. Data is gained from lecturer and students through research instruments for affective aspect, non-test of observation for psychomotor aspects, and through written test instrument for cognitive aspect. Affective aspect is observed from the attitude with 4 assessment aspects using scale of range assessment of 4. Psychomotor aspect is observed through product assessment with 7 assessment aspects using scale of range assessment of 5. Cognitive aspect is observed by written test instrument. The result showed that the implementation of project-based learning model learning improve learning outcomes of students, the percentage of students who complete increase from 50% in the first cycle to 87.5% in the second cycle. Affective aspect indicates achievement increase from 40.62% in the first cycle to 93.75% in the second cycle. As for the psychomotor aspect, increase from 28.13% in the first cycle to 100% in the second cycle.

**Keyword (s): Project Based Learning, Learning Outcomes, Business Presentation**

## **I PRELIMINARY**

Education is essentially an effort to provide the knowledge, insight, skills and specific expertise to individuals to develop their talents and personalities, because it has got the attention of education should be constantly in an effort to increase quality. Education is essentially an effort to provide the knowledge, insight, skills and specific expertise to individuals to develop their talents and personalities, because it has got the attention of education should be constantly in an effort to increase quality. Santyasa in Parma (2005 ) improving the quality of education also means improving the quality of human resources. According Winataputra in Parma (2005) national education goals is to improve the quality of education in every type and level of education.

Based on the observations of researchers in education courses that the administrative offices, the results of study on subjects of public relations, in particular the presentation materials business in 2012 semester student of the academic year 2014-2015 can be categorized economics faculty of Surabaya in low learning outcomes. This is indicated by the value of pre-test at the beginning of the delivery of the material by researchers, the results are very low. This is due to lack of interest and attention of students to the subject matter, of course this will greatly affect student learning outcomes. To increase the interest and attention of the students and also simultaneously improve learning outcomes on student presentation materials business office administration education 2nd half 2012



economic faculty of Surabaya in force, need to be designed so that students' learning model can improve understanding of the concept, so that the problems encountered can be overcome.

With the relevant research beforehand, so that the researchers got the reference of the study conducted by prasada (2014) conducted a research project based learning, entitled Implementation of Model-Based Learning Projec in Subjects Assembling PC To Improve Student Results Class X TKJ2 Public Vocational School 3 Singaraja. Where mastery learning completeness percentage increase of 28.58% with an average value of 66.31 in the first cycle, an average value of 79.10 with 85.71% completeness in the second cycle. So of reference of the researchers got the idea and tend to choose to use alternative the same, namely the application of the model Project Based Learning, because of the application of this model has many benefits that can be achieved, for example: (1) students to be learners active, (2) learning becoming more interactive or multidirectional, (3) be a student-centered learning, etc. Due to project-based learning can provide learning outcomes in the form of knowledge (knowledge), skills (or psychomotor skills) and attitude (attitude or affective), the assessment is carried out for the third realm. Forms of assessment can be either a test or nontes. Project Based Learning is a model or innovative learning approach, which emphasizes learning through activities that complex contextual (Cord, 2001; Thomas, Mergendoller, and Michaelson, 1999) in Trianto (2014: 42). According to Gagne (in Khoerul, 2013) of learning outcomes is an internal capability (capability) which includes knowledge, skills and attitudes that have become private property and allow someone to do something. There are three learning outcomes that should be achieved through this learning process, namely cognitive, affective, and psychomotor. According Munadi (Siswoyo, 2013) where the assessment of learning outcomes, of course, influenced by internal factors and external factors that can alter the student. Where internal factors can be divided into two, namely (1) the general Fisiologis. Secara factor physiological conditions, such as good health, not in a state of exhausted and tired, not in a state of physical disability and so on. This can affect learners to receive course materials, (2) Psychological Factors. Each individu in this case the students basically have psychological conditions vary, of course this also influence the learning results. Several psychological factors include intelligence (IQ), attention, interests, talents, motives, motivation, cognitive and reasoning power participants didik. Dan external factors can also be divided into two, namely (1) Environmental Factors. Environmental factors can affect learning outcomes. Environmental factors include the physical environment and natural sosial. Environment eg temperature, humidity and other. Study at midday in the room will be less air circulation would be devastating and would be very different in the morning learning conditions are still fresh and with enough space to breathe. (2) Instrumental Factor. Factors instrumental factor is the existence and use is designed in accordance with the expected learning outcomes. These factors are expected to serve as a means for the achievement of learning objectives that are planned. This instrumental factors such as curriculum, facilities and teachers.

The material in the 2nd half of college public relations for education student administration office is a business presentation with a few sub materials namely; (1) The form for business presentations. (2) Matters to be considered in making a business presentation script. (3) The process of writing the script business presentations. (4) The importance of business presentations for public relations. (5) The basic technique business presentations. Through the implementation of project-based learning models researchers try to help afflictions lecturer in delivering learning materials to students. Based on the above problems, the authors tried to raise this topic into a research titled: "Application of Project Based Learning Model to Improve Student Learning Outcomes On Business Presentation Theme".

## **II LITERATURE REVIEW**

### **A. Methods Research Project Based Learning**

According to Thomas cited by Made Wena (2012: 144) "Learning Project Based Learning is a learning model that provides the opportunity for teachers to manage classroom learning with work involving the project". Project work includes complex tasks that require students to design, solve problems, make decisions, investigate, and provide an opportunity for students to work independently.

Sane Kamdi (2008: 7) states "learning projects can be prepared in collaboration with the trainer single or double instructor, while students learn in collaborative groups between 4-5 people". When students work in teams, recording find the skills to plan, organize, negotiate and build consensus on issues of task to be done, who is responsible for each task, and how the information will be collected and presented.

Based on these descriptions can be concluded that the method of project-based learning can improve student motivation in other words students are more diligent and strive to complete the project given by the lecturer.

## **B. Learning Outcomes**

Implementation of learning is learning outcomes. Here's proposed definition of learning outcomes according to experts:

1. Nana Sudjana (2009: 3) student learning outcomes is essentially a change in behavior as a result of learning in a broader sense include the areas of cognitive, affective, and psychomotor.
2. Dimiyati and Mudjiono (2006: 3-4) learning outcomes is the result of an interaction acts and acts of teaching and learning. In terms of teachers, teaching acts ends with the evaluation of learning outcomes. In terms of students, learning outcomes is the end of the teaching of the peak of the learning process.
3. Forijad (1989) defines the learning outcomes is a mental process that leads to the acquisition of knowledge, skills, and attitudes with process skills and implemented in order to create a progressive and adaptive behavior.
4. Udin S. Winataputra (2007: 110) study results are proof of the success that has been achieved by students in which every learning activity can lead to a change in the typical. In this case study include process skills, liveliness, motivation also learning achievement. Achievement is a person's ability to complete an activity.

From the above opinion can be concluded that the result is the ability to learn the skills, attitudes and skills acquired student after he received treatment given by the lecturers so that they can construct knowledge in everyday life.

## **C. Business Presentation**

In general, a business presentation has four main objectives (Djoko Purwanto, 2006) which can be described below:

- 1) Inform messages to the Audience Business  
One of the goals of the most common business presentation is to convey or inform (inform) business messages to the audience (audience).
- 2) Entertain Audience  
In addition to providing information, business presentation also aims to entertain (entertain) audience. That is, to achieve the goal of business presentations of the speakers need to tuck fresh humor that is able to turn the atmosphere.
- 3) Touching Emotion Audience  
In addition to giving information clan entertaining, business presentations also have a goal to be able to touch the emotions (emotion) audience. With the diction and intonation sounds interesting, a speaker able to arouse the emotions of the audience.

4) Motivate Audience to Action

Provide motivation (motivation) to the audience to do something or act as desired pembicara. Dalam motivate the audience, a speaker needs to express it explicitly can not use the language of preamble.

Thus, it can be concluded that the purpose of business presentations, among others:

- a) informs the business message.
- b) Convincing the audience.
- c) Persuading the audience.
- d) Inspire others.
- e) Entertaining the audience.
- f) As a means of education for the audience who study the technical presentation.

**RESULTS AND DISCUSSION**

Results of study subjects public relations business presentation materials at pre-test initial observations of 33 students is obtained by calculating the average of this classical there are 2 of the test and non test, for affective and psychomotor aspects of using research instruments in the form of non-test in the form of observation. Observation of attitude as much as 4 aspects of assessment using a range of assessment scales 4 to affective, psychomotor to use observation as much as 7 aspects of the product assessment using a range of assessment with 5 assessment scale and to use the instrument in the form of cognitive tests, in the form of written tests.

Table 1. Table Conversion Reference Benchmark Assessment Scale 5 (five) level learning outcomes

Percentage	Level of Learning Outcomes
90-100	Very High
80-89	High
65-79	Medium
55-64	Low
0-54	Very Low

Implementation of the action on the first cycle through the implementation of project-based learning model of the data obtained is generally not fully reach the expected target. It can be seen from the data classical completeness affective amounted to 40.62% if converted to the benchmark reference Assessment scale five in Table 1 can be categorized as very low with an average of 77.73, next to the psychomotor completeness classical amounted to 28.13% yield is considered very low when considered in the table 1 assessment benchmark reference scale of five with an average of 73.75 and the cognitive domains in the first cycle completeness classical by 50%, the average value of classical amounted to 68.84 and absorption of classical amounted to 68.84% by students who completed as many as 16 people out of 32 students, the results of the cognitive above if converted to Reference Benchmark Assessment scale five in Table 1 absorption and average classical can be categorized as moderate, while the completeness classical still at the very low category as well with classical completeness total for the third domain of the first cycle is at 39.58%. Based on the results obtained in the first cycle, then corrective measures need to be done in the second cycle to reach minimum completeness criteria 70 on cognitive and psychomotor reached minimum completeness criteria 75 on the affective and classical completeness is more than 85% for all domains as well as the target of classical completeness total for all three domains more than 85%. In applying the model of project-based learning, there are still obstacles to be overcome, these constraints include (1) During the learning process learning activeness of students already apparent, but still not optimal, (2) There are still many students are hesitant in the presentation and provide responses or answers to his friend, (3) The answer given student is still very simple and impressed memorizing it, (4) There are still some students are less developed the ability optimally to answer all the exercises, (5) When designing

writing scripts business presentations there are some groups who are less active and less cooperation. Based on the results of the reflection of the need for a solution as the basis for improving the implementation of the action on the second cycle. As a solution, namely (1) To enhance the students' understanding of the learning model is applied, the researchers first had to explain again in detail about the technical learning by using a model of project-based learning, which accepts all complaints of students and then provide motivation and guidance so that students feel ready in the learning process, (2) researchers to motivate students to bring confidence and courage in every presentation of its business and answer exercises, (3) Researchers will invite students to present their business ideas and answer questions directly, more develop affective abilities of students, as well as re-emphasizing the concept of learning independent and active, (4) Researchers will motivate when students apply the technique to make business presentations are nice as well as the work on the problems that can monitor student activities if experiencing difficulty, (5) Research by lecturer teachers motivate students to be challenged to design a power point presentation of the business and look for other learning resources in developing capabilities in the field of public relations is. Based on the results obtained in both the second cycle of the learning process and results of the test, to produce a product, it can be stated already meet the desired target researchers. This can be seen from classical completeness affective reached 93.75%, these results when converted into the benchmark reference Assessment scale five in Table 1. can be categorized as very high with an average of 92.57, followed by classical completeness on psychomotor achieve 100% results if converted into a benchmark reference Assessment scale five in Table 1 can be categorized as very high with an average of 89.28, and the last one on the cognitive mastery klasikalnya reach 87.5% this result if converted into the benchmark reference Assessment scale five in Table 1 can be categorized as high with an average of 75.84.

Table 2. Data of Student Learning Outcomes Department of Economic Education Program Office Administration Education 2012 Faculty of Economics Unesa. At Cycle I and Cycle II

LEARNING OUTCOMES	CYCLE I			CYCLE II		
	Mean	Absorption (%)	KK (%)	Mean	Absorption (%)	KK (%)
Affective	77.73		40.62	92.57		93.75
Cognitive	68.84	68.84	50	75.84	75.84	87.5
Psychomotor	73.75		28.13	89.28		100
Classical mastery Total			39.58			93.75

Judging from the above table that a significant increase in the percentage in each domain assessment. Where each sphere has reached the target assessment has been determined that the achievement of individual learning completeness minimum completeness criteria 70 for the cognitive, psychomotor minimum completeness criteria 75 for affective and classical completeness above 85% for all domains. In the cognitive domain absorption reached 75.84%, the average reached 87.5% classical completeness. results of post test the cognitive domain if converted into the benchmark reference Assessment scale five in Table 1 for absorption and average classic can be categorized as very high and the completeness classic can be categorized as very high as well with classical completeness total for all domains in cycle 2 This amounted to 93.75%. This fact shows that the results of the research have surpassed the expected target. This is caused by (1) the application of project-based learning models can be implemented effectively, (2) a conducive learning environment, (3) learning-oriented students, and (4) enthusiasm and activeness of students has shown total increase of completeness number of all the classical realm can reach above 85%. Besides achieve improved learning outcomes, the learning process in the classroom became more favorable after the implementation of this project-based learning model, students become more active in supporting the learning process, so that learning becomes more convenient.

Where classical completeness percentage increase from the first cycle to the second cycle in the affective domain of 16.02%, 37.5% cognitive and psychomotor amounted to 26.25%. Things like this

are integral to the theory underlying the application of learning models project-based learning, in which the learning process students are not expected to just listen, take notes, and then memorize the subject matter, but the model of project-based learning every student is forced to be more active thinking and acting, communicate, find and process the data, and finally concluded.

Based on the results of the action on the first cycle and the second cycle can be said that the application of the model Project Based Learning can increase learning outcomes of students of economics faculty office administration of Surabaya in the course of public relations.

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## **Board Game as a Media to Increase Students' Speaking Skill**

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### **Abstract**

The objectives of this research are: first, to know the application of board game; second, to know whether or not the use of board game can increase the students' speaking skill. This research was a classroom action research. The researcher did some steps for each cycle. They were planning, action, observation, and reflection. In collecting the data, the researcher applied several techniques including observation, interview, questionnaire, and test. The quantitative data were analyzed by using descriptive statistics. It compared between the scores of pre test (before implementing board game) and post test (after implementing board game), while the qualitative data were analyzed by using constant comparative method which consist of; comparing Incidents applicable to each category, integrating categories into their properties, delimiting theory, and writing theory. The results of this research are students are able to give expression, diction, and pronunciation properly. The improvement can also be seen from their results of the post-test. The means of the scores improve from cycle to cycle. The mean score of the pre- test is 66,7. Then, it increases to 70,64 in Post-test 1 and 80,6 in Post-test 2. Moreover, students are active in teaching-learning process.

*Keywords: board game, speaking skill, classroom action research*

## I. INTRODUCTION

English is one of the skills that must be mastered by the students of English Education Department. Speaking class plays important role to give a chance for the students to practice to express their idea orally. Speaking is important for the students to practice their skill and understanding about how to speak their idea and how to speak English well. In this case, the students' motivation and interest are important to make it easy in the process of the students' understanding.

From the observation, the fact shows that the students are less motivated to be active in speaking class. This is because they get less stimulation and interest to express a topic that will be spoken. The lectures usually ask the students to express a topic through description or explanation. They do not use any variation in the teaching and learning process in speaking class. In addition, the lecturers do not use innovative media. It is time for the educators to think about new teaching methods and media that are considered to be appropriate for the students.

Media is potential as a means to develop the students' speaking skill during teaching learning process. That is way, the lectures must be able to create and using various media for the process. One of the media is board game to increase the students' speaking skill. The speaking skill is one of the skills that must be practiced. However, speaking skill is not easy to be learnt by the students. One of the difficulties they often find is that they are not motivated during the speaking class because the media used by the lectures is not interesting and monotonous. To solve the problem, the use of board game is an appropriate solution.

There is a game essence in the use of board game as a media. Game is an enjoyable activity (Hornby, 1995: 486). Thus, board game is defined as an instrument that is used to improve the students' motivation since it can make the students more focus on learning. Hornby (2000: 126) stated that board



game is a game played on a board, using dice and small puppets to move. Children, adolescent, and even adult can play this game. In the speaking class, board game can bring the students to real life context into the classroom, and increase the flexibility of the use of English, meaningful and communicative (Carly, 2010: 21).

By using board game, it is hoped that the students of the speaking class are motivated and board game is used as a reference to express ideas and enjoyable speaking class is created. This can help the students to improve the students' skill in speaking English in their daily life.

In board game, there is a game activity. Like board game in general, the components of this media are board with colorful box pictures to put the small puppets, dice for determine how many steps must be taken by the players, some colorful cards.

The steps of this game are before the game starts, the students are grouped into six groups, each group consists of five students. The group which takes turn throws the dice and move their puppet according to the amount of the dice eye. When the puppet stops in a box, the students take card according to the color where the puppet stops. There is an instruction in the card to outline or discuss a topic or picture orally. There are three cards; yellow, green and pink. Each color has its own instruction and composition.

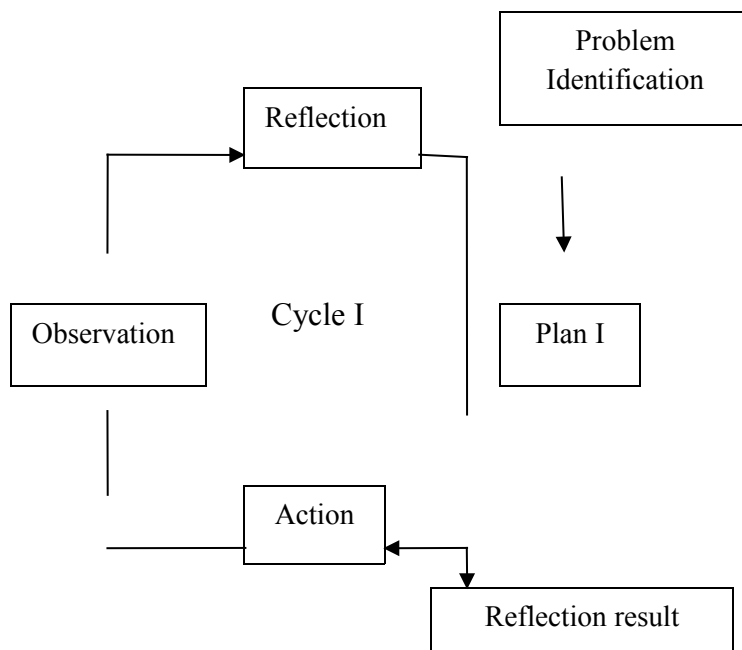
The statements of the problem in this research are as follows:

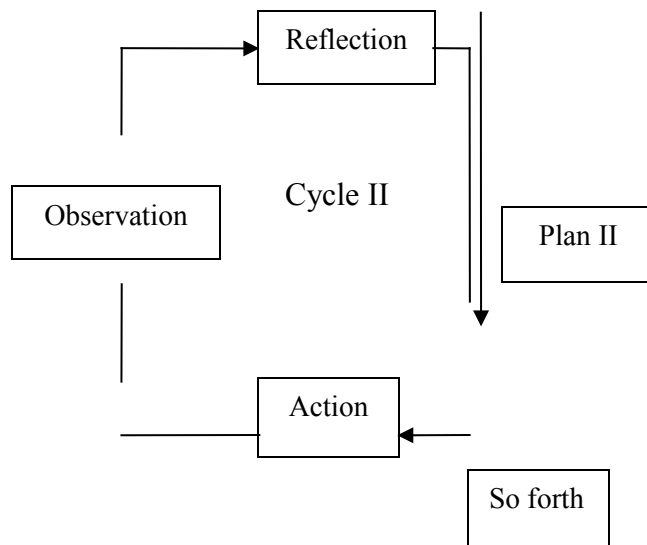
1. How is board game applied to improve the students' speaking fluency, expression, diction, and pronunciation?
2. Can board game improve the students' speaking skill?

## II. RESEARCH METHOD

The design of this research is action research. Each cycle consists of planning, action, observation, and reflection. The steps in the next cycle is planning which has been revised, action, observation, and reflection. Before the cycle I, there is a pre-action (problem identification).

The spiral cycle of each step in action research can be seen in the following:





Picture 1: Steps of Action Research

The explanation for the above steps is:

1. Planning. Before conducting a research, the researcher determines the formulation of the problem, purpose and makes action plan which includes the research instrument and action plan.
2. Action. In this step, the lecture applies an action that has been planned before, that is the steps of the teaching activity in accordance with the teaching method that has been chosen.
3. Observation. This step can be conducted in the same time with the previous step (action). And if the action (lecture) is also acted as a observer (in an individual action research, where the lecture is acted as a researcher with no collaboration), the observation instrument should be prepared systematically.
4. Reflection. This step is an activity to reflect and think about the actions that were done or will be done, the weakness and the strength, the obstacles

faced during the action, etc. If the lecture as the actor of the action as well as acted as the researcher (observer), the reflection is done for him/herself. In other word, the lecture sees through himself, doing some dialogues with himself to find the things that are in accordance with the plan or to find the things that must be revised. In this case, the lecture does “self evaluation”, introspection, and objective. To be objective, the result of the reflection must be validated or consulted with other lecture or researcher who are competent with this field. The reflection is the activity of evaluation, analysis, explanation, conclusion and identification of the next step and cycle.

In collecting the data, the researcher conducts some technique; observation, interview, questionnaire, and test. While, there are two ways of analyzing the data. The quantitative data is analyzed by using descriptive analysis and t-test for non-independent variable. Descriptive statistic compares score from pre-test and post-test. The quantitative data is analyzed by using Constant Comparative method that consists of comparing incidents applicable to each category, integrating categories into their properties, delaminating theory, and writing theory.

The location of this research is in IKIP PGRI Madiun at Jl. Setiabudi 85 Madiun. This institution is chosen because the researcher is an English lecture in the Department of English Teaching Faculty of Letters and Arts Education. The subject of this research is the students of semester II Class A English Department IKIP PGRI Madiun term 2014/2015 which consists of 31 students.

### **III. THE RESEARCH RESULT AND DISCUSSION**

The lecture introduces a teaching media to express ideas in speaking, namely Board game. Next, the lecture explains how to use Board game in speaking class. First, the representative of each group gets one puppet. The order of the game is started from the group who gets the first turn and so forth. Second, the player moves the puppet according to the amount of the number he gets. Next, the player throws the dice and gets a number, will stop in the box with color (green, pink, or yellow). Each time the player stops, the player must take one card according to the color where the puppet stops. For example: he stops in box number 7 (pink), the player must take one pink card. Next, the players must do speaking activity (limited time) according to the instruction in the card. There is different instruction and picture for each card; for example: describing difference and similarities, which one do you prefer between tea or coffee?, describing public places.

When a group gets a card, the lecture shows the instruction in the card orally in English. The lecture compares the score of the pre-action and post-action. The highest score increases from 75 to 85 in post-action. The lowest score increases from 60 to 65 in post-action. The average score increases from 66,7 to 70,64. The table below shows the data of the students' speaking score:

**Table 1.1 The students's speaking score in cycle I**

No	Aspect of Speaking Skill	Highest	Lowest	Average
1	Fluency	25	15	20
2	Diction	20	10	15
3	Pronunciation	20	10	15

4	Expression	25	15	20
	<b>Total</b>	<b>90</b>	<b>55</b>	<b>70</b>

The weakness found in cycle I is in the students’ pronunciation and diction. In addition, not all students participate actively in speaking, some students from a group dominates. Besides, there is not winner yet in each play (there is no group reach the finish box) because the game only uses one dice and the limited time for speaking class.

That is why there are some things that must be revised from cycle I. First, the students do not do their best especially in pronunciation and diction. The researcher and the collaborator plan to review the words that are often wrong pronounced and review the words, phrases, and sentences, and the expressions that are not appropriate in certain context. Second, not all students participate in speaking, some students in one group dominate. That is why, the researcher asks all students to be active in speaking and tells that during the speaking activity the students get score for their performance. Third, there is no winner in each play. That is why the researcher and the collaborator make a deal to use two dices.

**Table 1.2 The Comparison of the students’ score pre-action, post-action I, and post-action II**

Description	Pre-action	Post-action I	Post-action II
Highest score	75	85	90
Lowest score	60	65	70
Average	66,7	70,64	80,16

To support the score of post-action in cycle II in the table above, the following table shows the data about the students' speaking score from 4 aspects of speaking skill:

**Table 1.3 The students' speaking score from 4 aspects of speaking skill in cycle II**

No	Aspects of speaking skill	Highest	Lowest	Average
1	Fluency	25	20	20
2	Diction	20	15	20
3	Pronunciation	25	15	15
4	Expression	25	20	20
	<b>Total</b>	<b>95</b>	<b>65</b>	<b>75</b>

From the above explanation, it can be concluded in the table as follows:

**Table 1.4 The Comparison Between Pre-Condition and Post-Action Condition**

<b>Indicator</b>	<b>Pre-condition</b>	<b>Condition after cycle II</b>
a. Fluency	The students are not fluent in speaking  (Stammered and stopped) thus, they speak not flurntly.	The students can express their ideas and communicate fluently.
b. Diction	The students are not able to use words or expressions which are appropriate with the context.	The students can use words or expressions which are more appropriate with the context.
c. Pronunciation	Some students do not pronounce or speak certain English words correctly.	The students can pronounce or speak English words correctly.
d. Expressions	The students do not speak some expressions well (their speak sound nervous and lack of self confidence).	The students are able to speak English expressions well.

Based on the result of the research, the researcher makes some conclusions. First, the use of Board game as a media in speaking class (Speaking for Group Activities) can improve the fluency, expression, diction, and pronunciation of the students' speaking skill. It can be seen from the students' speaking average score which increases from 66,7 in pre-action to 70,64 in post-action I and increases higher to 80,6 in post-action II. Second, the students are enthusiast, interested, and motivated so that almost all students are active in the speaking activity. In addition, the students pay more attention when a group perform their speaking and when the lecture give



evaluation, so that they get more knowledge in the case of fluency, diction, pronunciation, and expression in speaking English.

#### IV. CONCLUSION

The use of board game is proved to be able to improve the speaking skill of the students. For the English lectures it is hoped that they innovate by using various models of board game to enrich the teaching media.

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## INTRODUCTION THE SCIENCE OF ADMINISTRATION AND MANAGEMENT TEACHING MATERIALS DEVELOPMENT FOR UNIVERSITY

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### ABSTRACT

Learning outcomes expected after the students take learning an Introduction the Science of Administration And Management is a student can apply and solve problems related to the administration and management in each field of the student struggled, both in education and in the field of non education. To be able to produce learning outcomes expected, hence the need for an interesting learning, so that students are able to understand and apply the theory of administration and management significantly. It is necessary for teaching materials that fit the needs of learning outcomes. This study aims to 1) develop teaching material in the form of modules an Introduction the Science of Administration and Management, and 2) determine the response of students to the module Introduction the Science of Administration and Management. The methodology used is Thiagarajan development model is a model 4-D. Thiagarajan models, there are four stages of development which define, design, develop, and disseminate. Stage of development used in developing this module only until the third stage that develop, because the module development was limited to test prototype products. Subjects in the study were Tata Niaga education study program students in 2014. Data collection techniques using study sheets, sheet validation, and questionnaire responses of students. The data obtained were analyzed descriptively by percentages techniques. The results show the feasibility of the content of 78,47% with a decent criteria, the language of 87,14% with a very decent criteria, and the graphic of 79,67% with decent criteria

Keywords: Teaching Materials, Introduction the Science of Administration and Management, University

### INTRODUCTION

Education plays an important role creating and shaping the young generation of skilled and well-educated. Education is a process whereby a person acquire knowledge, develop capabilities and skills of attitude or change of attitude. Education is a process of transformation of the students in order to achieve certain things as a result of the education process that followed. The young generation as the agent of change expected to be able to carry out the important role of education that serve as the basis of

a change of life. One of the younger generation who will be able to implement it are students. Students as educated and literate is an important asset in creating a maximum learning outcomes in accordance with existing learning objectives.

Learning outcomes of the Introduction the Science of Administration and Management subject is the students are able to understand the concepts of administration and management, the framework of the duties and responsibilities of administration and management, and system administration and management process which includes planning functions, organizing functions, actuating functions and controlling functions. In addition, students are expected to analyze and make decisions using a variety of methods to solve the problem of administration and management by leveraging technology both in education and non education (the business world of industry). Responsible and able to work independently and be given responsibility for the achievement of the group's work, communicative, aesthetic, ethical, appreciative and participatory. Based on learning outcomes, the need to be a treatment for learning Introduction the Science of Administration and Management can equip learners with the skills to take decisions, both in education and non education, so it is expected that graduates will be able to solve the problems of life faced, including applying when they enter the working world and the industrial world

But the phenomenon that occurs is a learning process Introduction the Science of Administration and Management subject is still done conventionally, namely through a lecture in the classroom and learning that is done is verbalistic solely aimed towards mastery of learning materials, so that students are not informed about the benefits of what is learned and to pass often they do not know how to use what they have learned in everyday life. Besides the teaching materials used in Introduction the Science of Administration and Management subject limited, and the lack of content design appropriate learning models to be applied to the learning process.

To support the learning process so that learning outcomes Introduction the Science of Administration and Management subjects achieved, then we need a tool or media study. Use of assistive devices or media learning is an inseparable part and an integration with learning methods used. Learning aids is one of the dynamic elements in the learning process. One type of teaching materials that can be studied alone is a module. Modules are printed teaching materials are designed to be studied

independently by study participants. The module is also called the media for independent study because it has been equipped with instructions for self study (Diknas, 2008). That is, the reader can do without the presence of the teaching and learning activities directly. The use of modules has the advantage, among others 1) increase the effectiveness of learning without having to go through face to face on a regular basis because of geographical conditions, socio economic, and social situation, 2) determine and set the time to learn more in line with the needs and development of learners, 3) expressly determine the attainment of learners gradually through the criteria established in the module, 4) identify the weaknesses or the competence of learners who have achieved based on the criteria set out in the module so that the tutor can decide and help learners to improve their learning and conduct remediation (Prastowo, 2014 ).

Modules in this research is the development of the modules Introduction the Science of Administration and Management, which already prepared to help students better understand the content of the material presented, with the use of language that is easy to understand because given students who take the Introduction the Science of Administration and Management subject this is the first semester students. Modules Introduction the Science of Administration and Management subject, is also packed with case examples and sample applications directly in the education and non education (the business world of industry) to enable students to learn from real life cases.

Based on the existing background, the study aims to 1) develop teaching material in the form of modules Introduction the Science of Administration and Management, and 2) determine the response of students to the module Introduction the Science of Administration and Management.

## **RESEARCH METHODS**

This type of research used in this study is a research and development. Method development research is a method used to produce a particular product, and test the effectiveness of the product. Development undertaken is the development of the module Introduction the Science of Administration and Management to Tata Niaga education study program students. Module development Introduction the Science of Administration and Management, this development model according to Thiagarajan, Semmel & Semmel (in Trianto, 2013) is a model 4-D. There are four stages in the

development of models Thiagarajan that define, design, develop, and disseminate. This model was chosen because the order of each step systematically arranged so that in the process of implementation of the development of each step can be controlled properly.

Stage of development used in developing this module only until the third stage that develop, because the module development Introduction the Science of Administration and Management was limited to test prototype products in the form of modules applied in teaching. Here are the stages of the process module development Introduction the Science of Administration and Management.

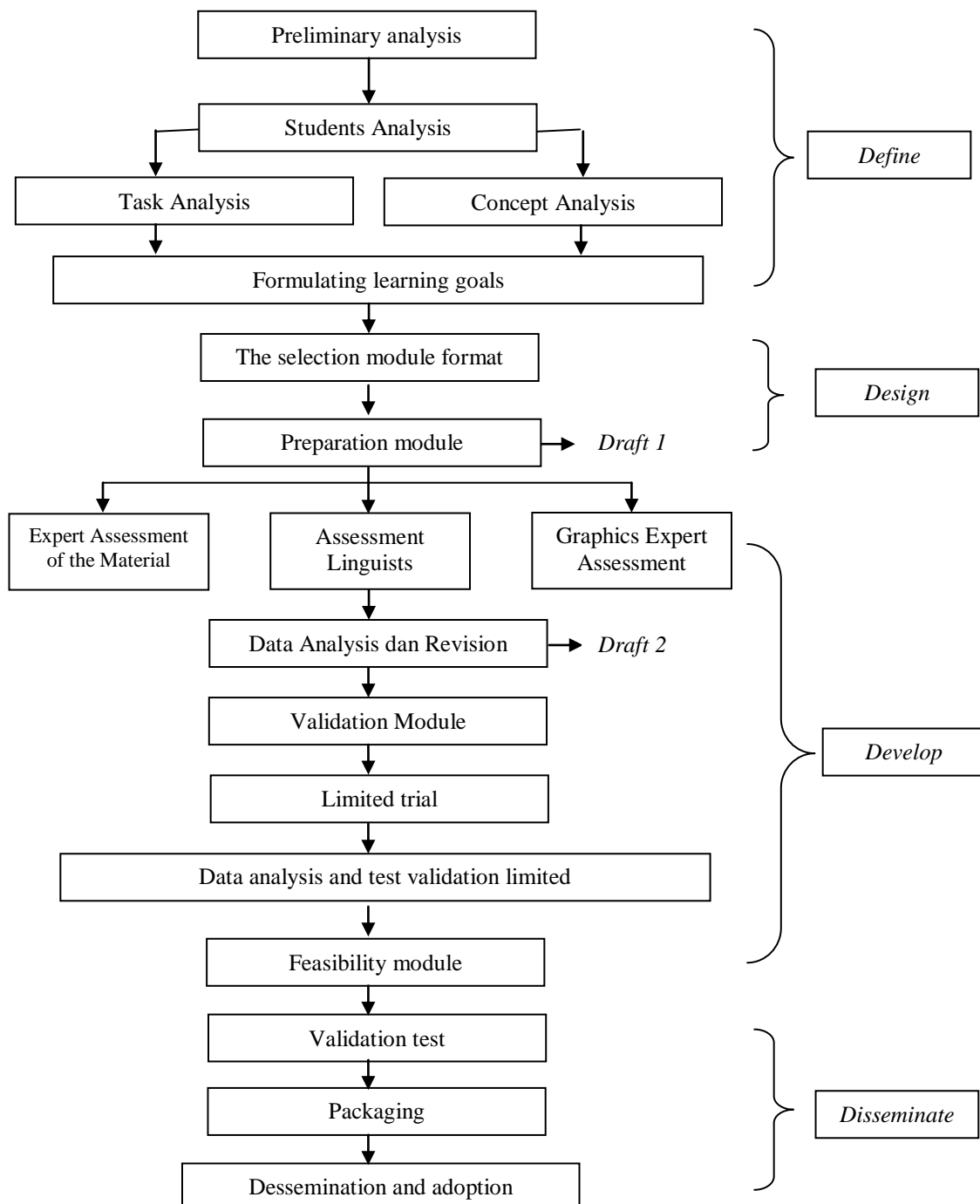


Chart 1. Stages of Development Process Module  
Introduction the Science of Administration and Management

The stages of development of the above can be explained as follows:

1. Define Phase

The purpose of this definition phase is to establish and define terms of learning. In this phase, researchers will analyze the requirements needed before designing the module. Among them are 1) the front end of the analysis required to identify and define the basic problems faced in teaching Introduction the Science of Administration and Management, 2) analysis of the student is required to determine the students characteristics such as age, cognitive ability, and enthusiasm for learning, 3) the task analysis is needed to identify the tasks that need to be done by the students in learning, 4) analysis of the concept is needed to identify the main concepts in the material that will be developed and arranged systematically .

2. Design phase

The purpose of the design stage is to prepare a prototype learning device. The activities carried out at this stage is to conduct elections and drafting module module format so as to produce a draft 1

3. Develop phase

The purpose of this development stage is to generate a module that has been revised based on input from the input of experts then conducted trials limited to the students. Study of experts covering materials experts, linguists, and graphics experts. Then the limited testing done to determine whether or not the module that was developed in terms of student responses. Limited testing done on a small group of 10-20 students who can represent the target (Sadiman et al, 2012).

4. Disseminate phase

This stage is the stage of the use of devices that have been developed on a larger scale, for example in other classes, in other majors, and by other lecturers. Another goal is to test the effectiveness of the use of the device in the teaching and learning activities.

## RESEARCH RESULT

Module development Introduction the Science of Administration and Management, using the model Thiagarajan. In order to facilitate a decisive step in the work, in this development model researchers divided into two processes, namely 1) the development process modules, and 2) the response of students to the module. The following is a presentation of the second stage of the work steps:

### 1. Introduction the Science of Administration and Management Development Process Module

This module development using the model of development according to Thiagarajan is 4-D, which define, design, develop, and disseminate.

#### a. Define stages

The activities carried out at this stage include 1) analysis of the front end, 2) analysis of the students, 3) analysis tasks, and 4) analysis of the concept. The activities can be 1) the analysis front end derived from the curriculum used in this study is a curriculum based character, and teaching materials used are reference books Introduction the Science of Administration and Management, 2) analysis of student obtained from preliminary studies conducted by researchers, that the researchers feel the spirit and independence of student learning is still lacking as more dependent on the explanation lecturer and tends to want to be led, and students want an interesting teaching materials in a style that is easy to understand, 3) For the analysis task is done by dividing the modules into chapters according to the syllabus. In each of the learning activities, students were asked to perform tasks continuously. Furthermore, the fourth stage is 4) analysis of the concept identified the concepts that exist in the module then developed in accordance with the syllabus and compiled systematically.

#### b. Design stages

At the design stage, the modules are arranged according to the chart below:



<p>FRONT COVER  IDENTITY MODULE PAGE  PREFACE  TABLE OF CONTENTS  I. CHAPTER I  Preliminary  Learning activities I  Material Description  Summary  Exercises  Case study  II CHAPTER II - CHAPTER IV (the same feature with chapter I)</p>
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Chart 2. Format Modules Developed

c. Develop stages

At this stage, the modules are developed reviewed by experts, namely materials experts, linguists, and graphics experts. Here are the results data collect from general advice and comments from experts on modules developed.

Table 1. Suggestions and Comments General Experts

Materials experts	<p><u>Suggestion:</u>  1. The material presented must be able to be motivate students  2. Introduction the Science of Administration and Management materials should be accompanied by examples from the field riil</p> <p><u>General Comments :</u>  1. ....  2. ....</p>
Linguist	<p><u>Suggestion:</u>  Fix grammar and spelling mistakes</p> <p><u>General Comments:</u>  1. ....  2. ....</p>
Graphics experts	<p><u>Suggestion:</u>  1. Cover must be adapted to the content module  2. The use of symbols and graphics must not be excessive  3. The use of color variation should not exceed five colors in one page</p> <p><u>General Comments:</u>  1. ....  2. ....</p>

Source: Data processed researcher, 2014

2. Student response against Introduction the Science of Administration and Management module

Besides reviewed by experts, the module also tested limited. Product trials conducted on 20 students, such as students from the Tata Niaga education program study. Students who follow the trials have been limited to getting the respondents who have academic ability heterogen

In the limited testing activities, the students were briefed in advance of the development being done then the students were given a module to be studied. Students were asked to form groups (4-5 people). Students are directed to study modules in stages so that students understand how to study modules developed. Students were also asked to work on group assignments and exercises contained in the module. At the end of the activity, students are asked to provide an assessment and opinion on the module developed by filling in the questionnaire responses. The following are the results of the general comments of students of limited testing.

Table 3. General Comments Students

No	Student Comments
1.	The combination of colors and nice pictures, can attract attention and increase student motivation to read
2.	The module is very interesting to read and easy to understand
3.	Module should be traded because it is very useful in learning

Source: Data processed researcher, 2014

**DISCUSSION**

This discussion describes the overall results of the development is done. The discussion presented in the form of the development process, and the student response to the modules developed.

Overall process module development Introduction the Science of Administration and Management implemented following the model of development according to Thiagarajan 4-D which define, design, develop, and disseminate. This model was chosen because the order of each step systematically arranged so that in the process of implementation of the development of each step can be controlled properly. Stage of development used in developing this module only until the third stage that

develop, because the module development Introduction the Science of Administration and Management was limited to test prototype products.

a. Define phase

At this stage, researchers conducted a pilot study in which it is known that the curriculum used in Tata Niaga education program study 2014 class is a character based curriculum that is demanded of learning centered on student character development. Teaching materials used by the student in the learning process of Introduction the Science of Administration and Management, this is a reference book from several sources in accordance with the curriculum. But reference books are mostly translations of foreign authors and material in the reference book is too broad, so that students are less able to follow the teaching given by lecturers.

Based on the analysis of the students in mind that the average student over the age of 16 years. According to cognitive development Piaget (in Nursalim, et al, 2007: 26) children at that age are able to think abstractly, can analyze the problem scientifically, and then resolve the issue. According to the lecturer, students learn self reliance spirit and still less because more dependent on explanations lecturers. In addition, students are also still difficult invited to learn independently, find, and build its own concept. In terms of availability of teaching materials for learning, the students wanted an interesting teaching materials in terms of appearance, which is supported by the use of colors (not black and white) and images. Based on the analysis front end and the analysis of students required the development of teaching materials that can make students learn independently with minimal guidance of lecturers, but can facilitate students in understanding the material Introduction the Science of Administration and Management

Then to the analysis carried out by identifying the concept of the main concepts of matter on the module to be developed. Results of this analysis in the form of a concept map for the material of each chapter is material 1) the concept of administration and management, 2) a framework of duties and responsibilities of administration and management, 3) system and the administration and management which includes planning, organizing functions, actuating function and controlling functions. Then made the formulation of learning objectives based on the analysis

of basic competencies and indicators. In the module that was developed, learning objectives which include the real of attitudes, knowledge, and skills in each learning activity.

b. Design phase

In the module that is designed, students are asked to study the material in groups. In learning to use the modules developed, it is hoped, will lecturer does not use the lecture method that explains the material in front of the class, but more faculty directing or guiding students to study modules in stages. For example, a lecturer instructs the students to observe the concept, wrote the opinion, assist students when presenting the task group, and answer questions from students. Lecturer is expected to encourage students to learn independently so as to create a student centered learning.

In addition to the use of color, the modules are designed also given drawings as illustrations to add interest, improve motivation and clarify the matter. This is in accordance with the opinion of Prastowo (2014: 99) states that the reason for the image used in the manufacture of teaching materials include 1) the image may be ornaments that make teaching materials more attractive. 2) The image could motivate, and 3) the image, the information can be conveyed more clearly to be understood.

c. Develop phase

This stage is carried out by means of study by experts. Review carried out by materials experts, linguists, and graphics experts. Draft modules produced material reviewed by experts, linguists and experts graphics using study sheets provided. Matter experts advise to add case studies to fit the learning objectives and the intended learning outcomes. Linguists suggest to correct grammar and spelling, and feedback to match the characteristics of the module is self learning. Graphics experts recommend changing the front cover, the picture on the front cover in order to be adapted to the content of the module content. Then it is also suggested to add a back cover

After revision, further validation by experts of material, linguists and graphic experts to assess the feasibility of the module. The expert validation according to research conducted by Yunita and Hakim (2014), which uses materials

experts, linguists, and graphics experts to assess the feasibility of modules developed. The experts were asked to assess the module by filling in the score on the validation sheet provided. Results of the assessment of the experts were analyzed by using percentage and then interpret the results

Feasibility modules Introduction the Science of Administration and Management, is measured using a sheet of validation experts. Experts consists of one person matter expert (Introduction the Science of Administration and Management lecturers), which assesses the module is based on eligibility criteria the content and presentation, one linguist (Indonesian lecturers) which assesses module based on the eligibility criteria of language, one of the experts in the graphic (technology education lecturers), which assesses the modules based on the eligibility graphic criteria. Questionnaire adapted expert validation of the instrument issued by the BSNP (2014). Research conducted by Yunita and Hakim (2014) also use the eligibility criteria of content, presentation , language and graphic validated by materials experts, linguists and graphic expert to determine the feasibility of modules developed. Data validation results with technical experts in the analysis of the percentage then interpreted the results. Here is a recapitulation of the validation experts for each component.

Table 7. Summary of Results Validation Experts

No	Component	Percentage	Criteria
1.	Content	78,47%	Eligible
2.	Presentation	85%	Very Worthy
3.	Language	87,14%	Very Worthy
4.	Graphic	79, 67%	Eligible
Average		82,57%	Very Worthy

Source: Data processed researchers (2014)

Based on the table above, note that the components of the content gets a percentage of 78,47% with a decent criteria (Riduwan, 2013: 15). This is because the content of the modules have loaded dimensions of attitudes, and knowledge according

to the National Education Standards (2014). In the knowledge dimension, the module has been presenting the material in complete accordance with the basic competencies and learning objectives. The material in the module are also contextual linking each material with the daily life of students and their application in the enterprise.

Presentation components get gets a percentage of 85% with a very decent criteria (Riduwan, 2013: 15). This is because the presentation of the module in accordance with aspects of the eligibility criteria penyajikan according BSNP (2014a). Which includes technical presentation, supporting the presentation of the material, presenting learning and completeness of the presentation. The module has a consistent grain systematic, coherent and complete instructions for using plants such as loading the motivation to learn at the beginning of the chapter, example problems, the concept map exercises, a bibliography and a glossary. Presentation of the learning module also asked the students to be active in the learning with study material and tasks in groups. Sentences in the module is also presented as a communicative so as if the communication takes place between writers and students

Components of the language gets a percentage of 87,14 % with a very decent criteria (Riduwan, 2013: 15). This is because the language used in accordance with aspects of the eligibility criteria of language according BSNP (2014a), which include compliance with the level of development of students, legibility, ability to motivate, directness, coherence and compliance with the rules of Indonesian and the use of terms and symbols or emblems. The language used in the modules in accordance with the level of thinking and social emotional development of students, the student is able to motivate and encourage students to think critically. In terms of sentence structure, grammar, spelling and writing foreign names used are appropriate. In addition, the use of the term and symbol or emblem has been consistent.

Graphic component gets a percentage of 79,67% with a decent criteria (Riduwan 2013: 15). It graphic module in accordance with aspects of the feasibility graphic according BSNP (2014b), which include the size of the module, the module cover design and contents of the module design. Modules developed to have a size that is using the ISO standard A4 paper. Sizes have been adjusted to the material content of the module that contains lots of tables and illustrations. Layout, typography and

illustration on the cover design and the design of the contents of the average module gets a very good assessment of graphics experts.

The average percentage of the entire validation expert is 82,57% with a very decent criteria (Riduwan, 2013: 15). That is, the module Introduction the Science of Administration and Management feasible to use in learning. The results of similar research conducted by Yunita and Hakim (2014) to obtain the contents of the feasibility of 84,11%, the feasibility of the presentation by 84,82%, the feasibility of the language by 86,61% and amounted to 84.72% graphic feasibility. So that the average of all aspects is 85,07% with a very decent criteria

Once the module gets a decent interpretation or very worth doing tests on Tata Niaga education program study students. The test is done to obtain the response of students to the modules developed. Here are the results of student responses to the modules developed.

Table 8. Summary of Responses Students

No	Component	Presentage	Criteria
1.	Content	96,44%	Very Worthy
2.	Presentation	90,44%	Very Worthy
3.	Language	95,5%	Very Worthy
4.	Graphic	90,44%	Very Worthy
Avarage		93,22%	Very Worthy

Source: Data processed researchers (2014)

From the above table it is known that the content of a percentage component of 96,44 % with a very good criterion (Riduwan 2013: 15) . This is because most students consider that the material presented in the modules to facilitate the understanding of the material Introduction the Science of Administration and Management. Based on the above table, the students commented that the module is very interesting that is easily understood in accordance opinions Prastowo (2014: 107), namely modules as teaching material should be able to explain the explanatory material well and easily understood by students according to their level of knowledge and age.

Components of the language gets a percentage of 95,5 % with very good criteria (Riduwan, 2013: 15). This is because all the students who followed this trial in the module assumes that the language is easy to understand. Use language that is easily understood in accordance with the module according to the module characteristics Daryanto (2013: 9) which is to meet the characteristics of self instruction , then the module should use simple language and communicative .

Components of the presentation got a percentage of 90,44 % with a very good criterion (Riduwan, 2013: 15). This is because most students assume that the presentation of the material can increase learning motivation, usage instructions, concept maps and summaries are also easy to understand. Presentation materials that can improve student learning motivation in accordance with one of the purposes of writing a module according to the Diknas (2008b: 5) is to improve student learning motivation and passion

Graphic component gets a percentage 90,44 % with a very good criterion (Riduwan, 2013: 15). According to most students, the module has a cover design and attractive color combinations, as well as the font is easy to read. Moreover, images and illustrations and the illustrations in module, according to the students to facilitate understanding of the matter and encourage interest in reading module. Based on the above table, the students commented that the combination of colors and nice pictures, can attract attention and increase student motivation to read.

Average of all of the components in the above table amounted to 93,22 % with very good criteria (Riduwan, 2013: 15) . It can be concluded that according to the students of the modules Introduction the Science of Administration and Management developed very well used in learning

## **CONCLUSION**

1) The process of developing the modules Introduction the Science of Administration and Management, using the model of development of Thiagarajan which define, design, develop, and disseminate. Stage of development used in developing this module only until the third stage that develop, because the development of this module was limited to testing a prototype product. 2) The response of students to the module



Introduction the Science of Administration and Management are very good based component content, presentation, language and graphic.

Based on data analysis and conclusions on the advice given is as follows 1) this study was limited to the stages develop only. Further research is needed to disseminate stages to determine the effectiveness of the module and can be used in the learning process, 2) module that was developed based on character based curriculum , it is necessary to use the approach suggested by others to be conveyed material being taught.

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# Synthesis and Characterization UiO-66 and Sn-UiO-66 by Solvothermal Method

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## ABSTRACT

UiO-66 and Sn-UiO-66 successfully obtained undergo solvothermal method at temperature 120 °C for 24 h within N,N'-dimethylformamide (DMF). In this research UiO-66 synthesized by zirconium tetrachloride with 1,4-benzendicarboxylic acid (BDC), with molar ratio 1:2, doping Sn<sup>2+</sup> from tin chloride (SnCl<sub>2</sub>) with ratio of Zr/Sn = 10%. Synthesized materials were white powder in which characterized by XRD, FTIR, and SEM-EDX. The result of XRD pattern show that both material have characteristic peaks of UiO-66 at 2θ approximately 7,3° dan 8,4°. FTIR spectra show that the characteristic bands of Sn-UiO-66 same with UiO-66. SEM image of UiO-66 showed that the solid synthesized was in the form of clusters of square morphology, whereas solids synthesized for Sn-UiO-66 showed individual square morphology.

**Key words :** synthesis, characterization, UiO-66, solvothermal, doping Sn

## 1. INTRODUCTION

Metal organic frameworks (MOF) are a class of porous crystalline materials formed by coordination of metal clusters or ions with organic linkers, called as secondary building units (SBUs). The characteristic of organic linkers that multidentant organic ligand which capable to covalently coordination with metal ion [1]. MOF have advantages that highly porosity, pore size, dan internal specific surface area [15]. Beside that, MOF give pore shape and pore size that regulated easily. It was more advantages of MOF as compared to other porous material [11-13]. So that, MOF already shown potentialities in variate application such as gas separation, ions exchange, sensor, catalyst, and hydrogen storage [5,7,9].

MOF divided into several class of its isostuctural. One of them that has attracted great interest is *University in Oslo* (UiO) that built up of inorganic octahedron Zr<sub>6</sub> clusters blocks with twelve coordination of 1,4-benzene-dicarboxylate (BDC) linker. Zirconium profitable because less corrosion and interact strongly with oxygen. So, it was obvious choices because built stable cornerstones in combination with oxygen containing linker. Its interaction result highly thermal and chemical stability of UiO-66 [4].

To increase MOF ability in several applications, researchers modified them, such as formed unsaturated metal sites, loading different metal ions, loading nano sized metal, ligand modified, surface area, and pore. Loading foreign metal ions caused partial substitution of metal

cluster of MOF by its other. This method called doping. Doping of MOF done by mixturing the solutions that containing different ions metal within solvent [6].

Study about metal doping into MOF has been reported. Botas et al.,(2011), reported about synthesise of Zn-MOF-74 with 5, 10, and 100% doping of Cobalt. That research shown that partly of Zn could replace by Co, where amount of replaced Zn limited, less than 25% [2]. Yang et al. (2014) has been studied about influence of Ni doped variation to MOF-5 in methanol and DMF solvent mixture with ratio 4:6. Crystal of Ni-MOF-5 synthesized was nano sized material with specific surface area 3023 m<sup>2</sup>/g. the widest specific surface area achieved by Ni-MOF-5 by adding of axcess Ni(NO<sub>3</sub>)<sub>2</sub>.6H<sub>2</sub>O. That researched shown that partikel size as increasing a mount of reactan, from nano to micro, and the structure change from *truncated cube* to *cube* [13]. Nurherdiana (2015) has been reported about adding Co(II) into UiO-66 synthesys by solvothermal method with Zr/Co=20, 10, 5, dan 3% of variation. In that research, shown that adding Co(II) didn't influence of framework structure, but its crystallinity, where the best crystallinity reached by adding 10% Co(II) into UiO-66 [5].

Some of the researched shown that synthesis of UiO-66 was influence by synthesis method and loading metal ions. In addition, Wee et al. reported that MOF successfully synthesized by Sn ions as center ions of MOF, that Tin-Organic Framework (Tin-EOF). That MOF then applied for esterification of oleic acid and glycerol to produce monoglyceride. Selectivity given by catalyst reach  $\geq 98\%$  and conversion 40% [10].

So far, doping of Sn<sup>2+</sup> ions into UiO-66 hasn't been reported. In this study, Sn<sup>2+</sup> will be doped into UiO-66 synthesis. Sn-UiO-66 was synthesized undergo solvothermal method at temperature 120 °C for 24 hours within DMF as solvent. Synthesized material was characterized by X-rays diffraction (XRD) to determining of materials crystallinity, FT-IR spectrophotometry to determining of functions group of Sn-UiO-66, *Scanning Elektron Microscope* (SEM) to investigating material morphologies.

## 2. Methodology

### 2.1 Synthesis of UiO-66 and Sn-UiO-66

Chemicals was used in this research including adalah Zirkonium tetrachloride (ZrCl<sub>4</sub>), tin chloride (SnCl<sub>2</sub>), N-N'-dimethylformamide (DMF), 2-amino 1,4-benzendicarboxylic acid (BDC), dan chloroform (CHCl<sub>3</sub>).

UiO-66 and Sn-UiO-66 was synthesized following the procedure reported by Cavka et al., by implementing the solvothermal method with with molar ratio of metal:ligan was 1:2. The composition of chemicals for synthesise UiO-66 and Sn-UiO-66 shown at Table 1. An amount of metal and ligan precursor dissolved in 45 mL DMF then stirred with magnetic stirrer for 30 minutes. The reaction mixture was then heated in an oven at 120 °C for 24 h. The reaction mixture allowed to cool at room temperature. The solvent was then removed from the vial bottles by decantation, the solid was washed by adding 35 mL of DMF and left for 24 hours. The washing process was repeated twice with chloroform as the solvent. The obtained solid was then dried at 90 °C and weighed.

TABLE 1. Composition of Chemical Precursor of Synthesise UiO-66 and Sn-UiO-66

Sample	ZrCl <sub>4</sub> ( mmol)	SnCl <sub>2</sub> ( mmol)	BDC ( mmol)	DMF ( mmol)
UiO-66	2.25	0	0.45	776
Sn-UiO-66	2.03	0.225	0.45	776

## 2.2 Characterization of UiO-66 and Sn-UiO-66

X-rays diffraction (XRD) was used to determine morphologies of chystalline synthesized materials. X-ray powder diffraction patterns were obtained with an X-ray diffractometer (D8 Advance-Bruker aXS) using Cu Ka radiation ( $k = 1.5406 \text{ \AA}$ ), with accelerating voltage and current of 40 kV and 40 mA, respectively. The analyzed angle of XRD was at  $2\theta$  5 until  $50^\circ$  by scan interval was  $0,02^\circ$ . XRD result was plot of sample diffraction intensity and  $2\theta$ . FT-IR characterization was detected wavelength on  $4000 \text{ cm}^{-1}$  until  $400 \text{ cm}^{-1}$  with  $4 \text{ cm}^{-1}$  of resolution, using *attenuated total reflectance* (ATR) technique. Sample powder of UiO-66 and Sn-UiO-66 was prepared in KBr pellet in ratio 1:99 (sample:KBr). A few of sample was taken in sample holder containing carbon tipe, then coating sample with palladium-gold. SEM analysis (Zeiss EVO MA 10) was used to capture the samples.

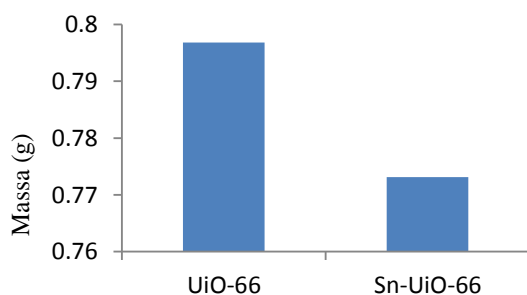
## 3. Result and Disscusion

UiO-66 and Sn-UiO-66 successfully synthesized by metal precursor zirconium tetrachloride ( $\text{ZrCl}_4$ ), tin chloride ( $\text{SnCl}_2$ ), and ligand precursor 1,4-benzena dicarboxylic acid (BDC) undergo solvothermal method at temperature  $120^\circ\text{C}$  for 24 hours within N,N'- dimethyl formamide (DMF) as solvent.

### 3.1 Synthesis UiO-66 and Sn-UiO-66

In this study, synthesis of UiO-66 was using 1:2 of ratio of metal:ligan, that was 2.25 mmol  $\text{ZrCl}_4$  and 4.5 mmol BDC, in 775 mmol DMF. Using excess of a mount of ligand head for gave higher a number of synthesized product. DMF that used as solvent in synthesis process resulted well mixture between metal and ligand. After heating at temperature  $120^\circ\text{C}$  for 24 hours in closed system resulted white colloid mixture. Then, cooled at room temperature undergo mixture become two layer, that separated by decantation. After decantation, residue was washed with DMF to remove impurities from reactant unreacted. Washing material undergo immersed for 24 hours, then decantated again. Washing residu was continued by chloroform, for twice of 24 hours. It will result good pores caused by solvent exchange that remove remaining of DMF and BDC in UiO-66 framework. After that, the mixture separated by filtration. The residu was a white jellylike material. It was dried at temperature  $90^\circ\text{C}$  for 2 hours to release remaining solvent in framework, so obtained more open porous materials. The dried material was a white powder, then weighted. In this research, UiO-66 modified with adding Sn to Zr ratio by 10%. Adding Sn was given to investigate the UiO-66 maintaining structure ability.

Mass of UiO-66 and Sn-UiO-66 shown at diagram at Picture 1. From this Picture could be known that synthesized material mass decreased by adding 10% of Sn. Decreasing of this mass was estimated that Sn associate with BDC to form framework Sn-BDC, where  $\text{Sn}^{2+}$  replace partly of  $\text{Zr}^{4+}$  position.

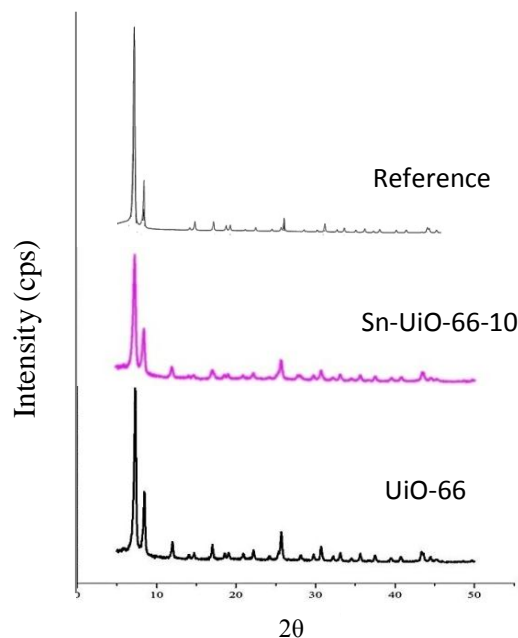


Picture 1. Diagram of mass ratio UiO-66 and Sn-UiO-66 synthesized

### 3.2 Characterization of UiO-66 and Sn-UiO-66 product synthesized

#### 3.2.1 X-Rays Diffractometry (XRD) Characterization

Diffractogram of UiO-66 and Sn-UiO-66 product synthesized were shown at Picture 2. Base on these Picture, both material show peak the first peak at  $2\theta$  approximately  $7,3^\circ$ , and second peak at  $2\theta$  approximately  $8,4^\circ$ . Both of these peaks were UiO-66 characteristic peaks, agree to Abid et al, (2012) and Cavka et al. (2008) was reported. Characteristic peak with highest intensity was the first peak that arise at  $2\theta = 7,4$  [1,2]. These picture shown that characteristic peaks intensity decrease with increasing the amount of percentage of adding Sn. Adding Sn to synthesis process cause more disorder crystal structure growth. All material shown the same diffractogram pattern. Its mean that from these synthesis process another material wasn't formed and changing material structure wasn't happen. So it can be concluded that adding Sn didn't cause structure changing, but decreasing the crystallinity.



Picture 2. Diffractogram of UiO-66 and Sn-UiO-66

Crystallinity of UiO-66 and Sn-UiO-66 shown as crystallinity degree, which obtained by data of intensity processing in origin programme. The higher intensity of material peak was used to standart to determining of crystallinity degree of synthesized material.

The crystallinity degree of synthesized materials shown at table 2. Based on these table, higher intensity was UiO-66. So that, UiO-66 be a standart to determining other synthesized materials. The crystallinity degree of synthesized materials decrease as increasing the percentage of adding Sn in synthesis process.

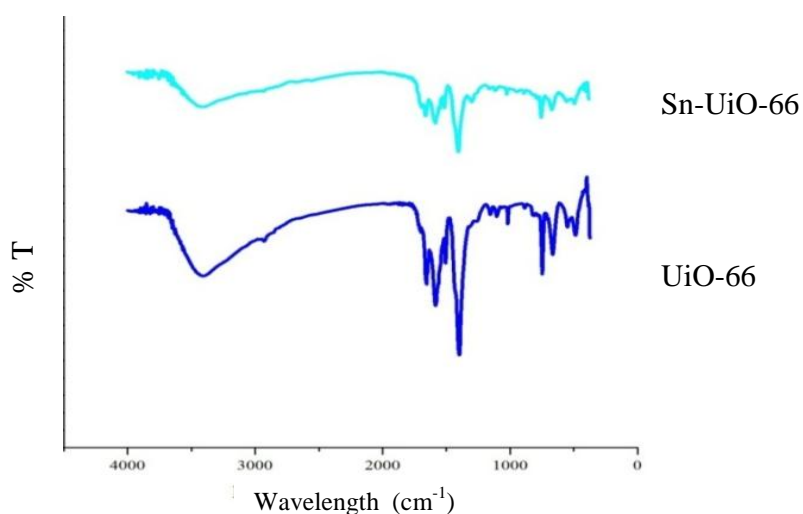
Table 2. Crystallinity Degree of UiO-66 and Sn-UiO-66

Sample	peak 1	Peak 2	Intensity	Crystallinity Degree
UiO-66	7,3577	8,3387	6582,65	100 %
Sn-UiO-66	7,3577	8,3387	4902,21	74,47 %

### 3.2.2 Fourier Transform Infra-Red (FTIR) Characterization

FTIR spectra of UiO-66 and Sn-UiO-66 shown at Picture 3. These picture shown several area that indicating characteristic absorption band of UiO-66. Those absorption band a bit shift and take a lower intensity on some absorption band. It was predicted as a result of adding  $\text{Sn}^{2+}$  cations. It agree with statement that a partly of  $\text{Zr}^{4+}$  cations as centre metal of MOF were replaced by  $\text{Sn}^{2+}$  cations. All material show absorption band at wavelength about  $663\text{ cm}^{-1}$ ,  $746\text{ cm}^{-1}$ , that signed as Zr-O vibration. It agree with Abid et al (2012) which explain that bending of Zr-O vibration give absorptions band at wavelength about  $600\text{-}700\text{ cm}^{-1}$  near of absorptions band of C-H and O-H bending vibrations.

Beside that, all spectra have absorptions band at wavelength range  $1390\text{-}1400\text{ cm}^{-1}$  sign as C-O stretching of carboxylic group. absorptions band at wavelength range  $1500\text{-}1580\text{ cm}^{-1}$  sign as aromatics C=C vibrations from organic ligand group.



Picture 3. FTIR Spectra of UiO-66 and Sn-UiO-66

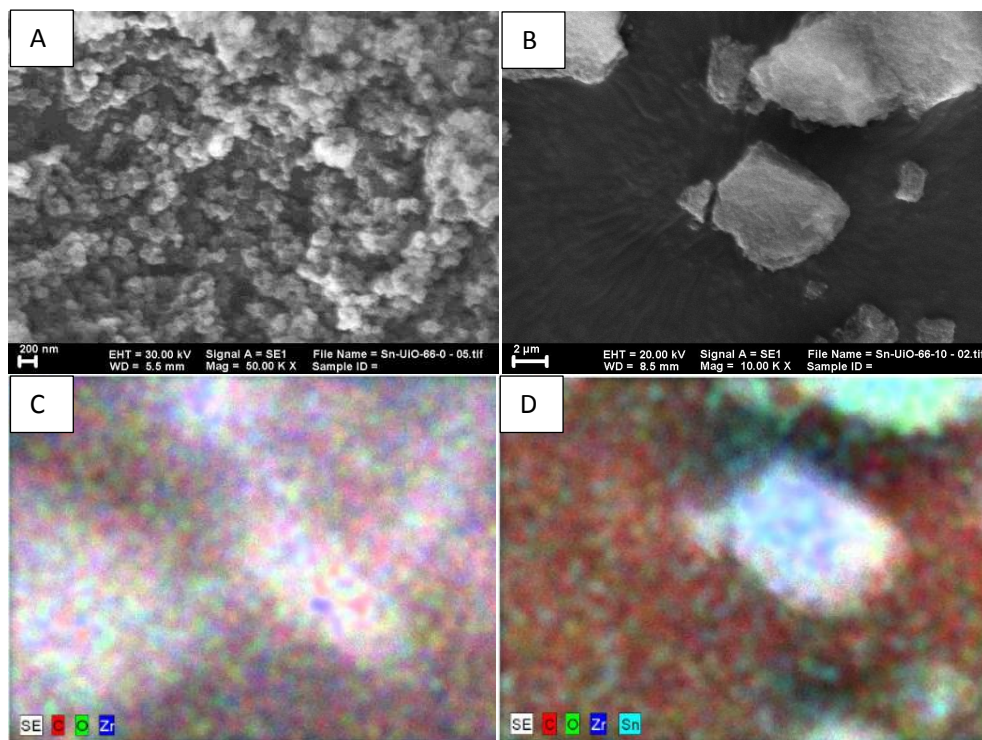
### 3.2.3 Scanning Electron Microscopy (SEM)

SEM characterization was used for understanding and determining UiO-66 and Sn-UiO-66 crystal morphology. SEM image of UiO-66 and Sn-UiO-66 shown at Picture 4. SEM image of UiO-66 showed that the solid synthesized was in the form of square morphology clusters, whereas solids synthesized for Sn-UiO-66 showed individual square morphology and more disordered particle shape. It agree with Yang et al. studied about partikel size of MOF-5 displacement caused by doping Ni in synthesis process. They were shown that partikel size larger as increasing a mount of reactant, from nano to micro, and the structure change from truncated cube to cube.

Crystal size of Sn-UiO-66 larger than UiO-66. The particle size of UiO-66 is about  $100\text{-}200\text{ nm}$ , while Sn-UiO-66 is about  $3\mu\text{m}$ . It agree with Zhao et al. (2013) that crystal size of UiO-66 proceed synthesis at lower temperatur is about  $150\text{-}200\text{ nm}$ , but scaate et al. (2011) reveal that the common crystalyte morphogy of UiO-66 was difficult to obtained.

EDX ia advance characterization of SEM, it show elements that conclude in sample. The EDX result shown at Picture 4. Base on these picture, it known that UiO-66 contains the

elements of C, O, and Zr, while Sn-UiO-66 contains the elements of C, O, Zr, and Sn. Sn content in Sn-UiO-66 as about 0.04%.



Picture 4. SEM Image of (A) UiO-66 and (B) Sn-UiO-66 and EDX Image of (C) UiO-66 and (D) Sn-UiO-66

#### 4. Conclusion

UiO-66 and Sn-UiO-66 successfully synthesized by zirconium tetrachloride ( $ZrCl_4$ ), precursor 1,4-benzena dicarboxylic acid (BDC) undergo solvothermal method at temperature  $120\text{ }^\circ\text{C}$  for 24 hours within  $N,N'$ - dimethyl formamide (DMF) as solvent. Logam:ligan ratio in synthesis process was 1:2. Characterizations result agree with references. Adding Sn in synthesis process wasn't effect to Kristal structure, but influence on crystallinity, morphology, and particle size.

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# Students' Attitude towards Critical Thinking Practices in Classroom Discussion

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## ABSTRACT

The current academic paradigm should be elevated into higher level, that learning is not simply process of transferring knowledge, rather knowledge construction through collaborative learning in the form of critical discussion such as in-class debate. The idea of analyzing the students' attitudes towards critical thinking practices is to redefine the current stigma that Indonesian society, as part of Asian (or Eastern) society, is not categorized into passive and hierarchical community. This paper will discuss further some aspects related to critical thinking attitudes, covering the clarity of individual's stance on controversial issues (motions), the purpose of critical discussion, styles of emotive expressions, and the idea of seeking harmony in critical discussion. The results showed different constructions with the current assumption related to the students' attitude towards critical thinking, showing younger generations in Indonesia have a more tolerant and open-minded perspectives. These findings will become the basis and justification of the implementation of any critical discussion on sensitive or controversial issues in the classroom as part of learning process and learning outcome.

**Key Words:** *students' attitude, critical thinking, classroom discussions, collaborative learning*

## 1. Introduction

Critical thinking has become a very wide educational goal over the last two decades. When learners have critical thinking skills, it means the learners have good thinking skills by applying logical reasoning and analysis focusing on what to believe and what to do based on certain process such as analyzing concepts or argumentation to solve the problem or provide solution [1]. Therefore, it is believed that critical thinking competence is considered as one of essential cognitive skills to be acquired by the learners.

In Indonesian context, the need to possess critical thinking competence is in line with the Government Regulation in Education Number 70/2010 stated that one of the aims of education should develop human beings who are critical, innovative, independent, self-confident, and entrepreneurship-minded. As critical thinking skill does not stand alone and it likely is tailed to other skills namely language skills, it is assumed that instructional strategies for language learning should also consider critical thinking as one of the learning objectives. In order to uphold these objectives, the classroom instructions should lead the students to utilize their logical reasoning during the activities in language classroom.

As students learn in many ways, including when they acquire the second language, students are likely to benefit from instructions that require them actively engaging in the classroom activities. From this one, instructors should creatively utilize a wide range of instructional strategies to engage students to boost their logical reasoning. As one of the examples, classroom discussion in the form of in-class debate may cultivate active learning within the classroom. However, a study about the presence of debate in teaching curriculum

that debating in the classroom seems hard to engage the students as this activity is mostly new [2]; the activities might only be dominated by certain students, especially who already have experiences in debating communities, or in specific for those whose interests are in social and politics, mathematics, or law.

There have been constructs which characterize Asian learners as group-oriented, harmony-seeking, hierarchical, and non-critical thinkers. These constructs are different with the Western learners who are adversarial and have critical thinking [3]. A new study [4], however, revealed that Asian learners want to explore knowledge by themselves and find their own answers. This study implies that the newer Asian generation may have different paradigm in learning critically compared with the conventional constructs.

In relation to that, this study was intended to redefine the paradigm that the students in Indonesia, as part of Asian society, are not simply characterized into passive and hierarchical community. Specifically, this study aimed at observing students' attitudes towards critical thinking for classroom discussion by involving members of debating communities as learners who have enough experience in critical discussion in the form of academic debate. This was also to highlight the idea by Paton [5] that the lack of criticality of Asian students is merely due to the language factor rather the culture or society. The findings of this study will become the bases for instructional strategy development for classroom discussion especially in language classroom in the form of in-class debate.

## **2. Research Method**

This study employed descriptive quantitative and focus group discussion as the requirement for further analysis of the data. This study was conducted on English debating communities as well as intercollegiate debate practitioners in Indonesia. The rationale of choosing debate communities as the subject of this study was they are ideal model for classroom (or community) engagement through critical discussion in the form of academic debate. There were fifty debaters with different levels across Indonesia with different levels (newbies, novice, and seasoned/experienced) who participated in this survey. This number was believed as ideal representative of Indonesian younger generation who has sufficient knowledge of critical discussion.

The data were obtained through a survey by distributing a questionnaire distributed during national debate competition attended by the subject research. The questionnaire consisted of the elements of critical thinking adjusted in the context of critical discussion some aspects, namely: the clarity of individual's stance toward such issues (argumentation), the purpose of debate (motivation), emotive expressions (manner), seeking-harmony (hierarchical) styles, and subjective and objective information. The questions which represent the elements of critical thinking were put in random order intended to find the subjects' consistent answer in giving responses.

The data were analyzed descriptively by investigating the pattern through the academic debate practices in relation to critical thinking. The results of data analysis in this study would be the bases for the researcher to affirm the theory generation of instructional strategies for classroom discussion in the form of in-class debate in relation to integrating critical thinking to learning activities.

## **3. Findings and Discussion**

The idea of observing the attitude towards critical thinking among the students who are the member of debating communities (debaters) in the context of academic debate was to redefine the paradigm that the students in Indonesia, as part of Asian society, are not simply characterized into passive and hierarchical community.

In order to further investigate whether they displayed the elements of critical thinking as well as personal attitude towards critical thinking, the following Table 1 presents the result of

the survey involving fifty respondents. Responses were scored from 1 to 5, where 1 corresponded to “very disagree” and 5 “definitely agree”. Besides, respondents were provided with space (column) for each question in case they wanted to provide further opinion related to their response.

**TABLE 1** Questionnaire to Observe Students’ Attitudes towards Critical Thinking in Classroom Discussion

Questions	Purpose of questions	Mean	Modus
1. It is important to state our stance clearly, even though the topic is controversial and sensitive.	Clear stance	4.64	5
2. Critical discussion or debate should always come up with solution.	Purpose or motivation	3.48	4
3. During the critical discussion or debate, attack the argument, not the person.	Recognition and respect to the opponents	4.92	5
4. I need to focus only on my own argument to certain topic and ignore the other arguments who disagree with me.	Recognition and respect to the opponents	1.68	1
5. It is okay to disagree with the instructor/teacher during the discussion.	Hierarchical thinking style	4.32	3 & 5
6. I need to provide my arguments with evidence such as research, statistics, news, etc.	Subjectivity and objectivity	4.4	4
7. It is important to deliver populist (that is in line with the trend of common people) arguments.	Clear stance	2.72	2
8. Winning is the main purpose in critical discussion or debate.	Purpose or motivation	2.6	1
9. The coach/instructor is unquestionable.	Hierarchical thinking style	1.6	1
10. To make arguments stronger and clearer, it is important to raise the voice and use finger-pointing expression.	Recognition and respect to the opponents	2.44	3
11. My personal beliefs might influence my argument(s) biased.	Subjectivity and objectivity	3.32	2

Data processed 2014

Questions 1 and 7 which dealt with clarity were included to investigate whether the subjects would show tendencies towards avoiding strong stance dealing with controversial issues. Forty-six out of fifty respondents gave clear positive attitude that strong and clear stance is necessary in dealing with controversial and sensitive issues/topics in discussion.

In terms of clear stance towards controversial issues (topics), Atkinson’s claim [3] stating that Asian students tend to seek to maintain harmony by choosing comfort stance or grey decision is no longer relevant. The generalization that Asian students do not stand on

clear and bold line looks hasty as the fact that students who have enough experience in discussion claimed almost unanimously that clear stance is very fundamental. For this, critical thinking is not exclusively entailed with society or cultural region; instead it depends on other factors like language proficiency [5], information adequacy, and motivation. These factors are well accommodated in the context of academic debate practices.

The results corroborated clear stance towards certain issues was significantly influenced by the content mastery towards certain issues in specific context. Instead of culture-bound, clear stance is closely related to the motivation of the students' autonomous behavior to seek for information of certain topics. In addition, the experience of the individuals in determining strict stance would be very significant factors to their clarity in assert something. Thus, what teacher or instructor should concern related to bold stance in certain topic is the background knowledge or the discipline of the students before asking them to take side towards certain issues. In addition, the teacher should provide certain time for the students to search data and information before coming into classroom discussion.

Related to Question 7, for the answer asserted neither agree/disagree that "grey zone" or populist stance is somehow preferable in debate when the topic is too sensitive or controversial. There was a comment from one subject confirming that:

"...half-stance (standing on "grey zone") is not justifiable in debate. However, in case the topic is too sensitive, it is believed that the topic is not good to be discussed, unless it is for decision-making debate (like in governmental debates), but not for academic discussion (in the classroom)."

Questions 2 and 8 dealt with the purpose of academic debate; on the other words, these questions would indicate the motivation of the respondents participating in critical discussions. Thirty out of fifty respondents (48% agree; 12% strongly agree) asserted that debate should come up with solution. As the nature of debate—it is beyond exchanging idea, it is advocating idea, it was clear that the debaters expected that they would have prominent solutions after advocating the idea through debate. Though, on Question 8, respondents urged that the main purpose of academic debate was not about winning or solely glorifying personal idea and disrespecting the opponents' idea. In relation to debate creating solution, similar comparison that 24% debaters urged that debate should propose solutions; it might be intertwined with the idea of philosophical debate that the main of debate is to understand the values of the issues, not about winning.

Besides content mastery and understanding of the topic, it is important to consider the purpose of the debate. Knowing the purpose of the academic debate would lead into contextualized discussion, both the process as well as the outcome. Thus, this understanding might be applicable in similar context such as academic curricula. To develop instructional strategies for classroom discussion, for instance in-class debate, it is important to distinguish the difference between the policy-making debate and moral debate; the policy-making, like Parliamentary Debate, addresses various issues and what kind of actions should be taken by the government. The purpose of this debate is advocate solution(s) in the form of policy that should be taken by the government.

On the other hand, the moral debates reflect the values of the social life of the students community (such as academic or collegiate context), and probably about their family [6] or this debate is well-known as academic debate. Thus, it is also suggested that the instructors be careful in determining the topics to be brought into the discussion; this might be based on some considerations such as understanding the background of the students and the urgency of the topics. With the proper selection of the topic, it will avoid ambiguity of the stance, building common motivation, and trigger the students to take clear stance engaged with the discussion. The other main purpose of classroom discussion is self-actualization. Students

believe that by having critical discussion may trigger them to achieve higher achievements both in academic as well as social aspects.

The next element is searching harmony and populist, such condition in which rare students are willing to argue with teachers even though they have better arguments. Questions 5 and 9 dealt with students-teacher interactions. The respondents gave score 4.32 (strongly agree) that it is justifiable to disagree with the instructor. With the reverse sentence with Question 5, Question 9 showed similar idea by putting 1.6 average score (disagree) that coach/instructor is superior or unquestionable.

This aspect is closely related to the idea of clear stance, whether we stand on a bold line or grey zone towards certain topics. The idea of maintaining harmony and hierarchical thinking in classroom context may indeed hinder the students' critical thinking. By giving opportunity to the students to deliver their contentions in the classroom, on the other hand, may trigger the students to use their logic as well as their critical thinking. There should be convention in the classroom; again, among the students and teacher that whoever delivers any ideas/arguments, they should be supported with logical reasoning and valid/relevant data. In addition, the classroom members should agree that the purpose of the debating and discussion in the classroom is intended to enhance critical thinking, not simply winning the discussion.

Questions 3 and 4 which dealt with recognition to the opponent's arguments and politeness showed almost unanimous result (92%) that in academic debate we should recognize the opponent's arguments and respect them. In the reverse sentence, Question 4 was intended to observe the recognition of the opponent's arguments. Similar result (48% strongly disagree and 44% disagree) if debaters should only focus on their own arguments and ignore the other arguments. In the broader concepts, recognizing and knowing the opponents' arguments is very important and helpful to sharpen our stance. Furthermore, the other opponents' arguments might become our bases as refutations.

For Question 10 dealt with another technical aspect in academic debate in relation to critical thinking, manner or emotive expressions such as tone, diction, gestures, etc. Gesture like pointing finger to opponents or tone like raising the voice might not significantly help the argument better. One respondent wrote in the questionnaire:

“We don't use emotive gesture such as pointing (our finger) to opponents; we're debating not attacking the speakers, but attacking the arguments with better arguments [...] and, when you rise your voice, we (you) might already lose.”

In case there might be any confrontation during the discussion, it could be identified through some factors like the tone of the voice, gestures, volumes, and subjective judgment. There would be rare occasion when raising voice is needed as part of technical strategy to put the focus of debate or gain attention, but it does not mean those gestures might strengthen the arguments; worse, such using emotive expression might tail to fallacy of pathos, in which argument is laid on the idea of emotion and feeling rather than empirical evidence or facts. This might be very essential for the instructor who would plan to include debate in their classroom, in order to decrease the tensions of discussion, they might better instruct the students not to focus on the high-voice tone but the quality of arguments through logical analysis.

Responses to Questions 6 and 11 would indicate whether the subjects tend to refer to subjectivity or objectivity based on data or information. The assumption that Asian students tend to be subjective is rejected by the result of Questions 6 (average of 4.4, strongly agree) which showed the importance of empirical data or information to support the arguments. Similarly, Question 11 showed how the use of personal belief such as religion may lead into subjectivity, and it will not create objective argument. In terms of the presence of personal beliefs e.g. religion and tradition in argumentation, the responses were permeated, and the

number was mostly equal. From the findings from Questions 8 and 11, it was clear that the subjects' preference in discussion is objectivity.

There is one thing that should be considered by both teacher and students during classroom discussion that is the interpersonal engagement and interaction. This interaction may help the students in enhancing their critical thinking ability through analyzing the claims of others as well as constructive feedback from peers and teacher. The role of teacher in the classroom discussion is very essential to facilitate the debaters into the more "knowledgeable individuals". In terms of the interpersonal interactions during debate competitions, students and teacher should control to what they want to deliver to their interlocutors by considering the context, content, organization, and manner in their arguments. The control might affect the cognitive development such as the ability to analyze, evaluate, and synthesize as well as recognize the ideas in the argumentations.

For the intrapersonal interactions, it is rather about self-reflections of what they have learned and what they are about to express. This might be very beneficial in evaluating what we have learned and what we are about to say. Self-assessment and self-talk strategy might give positive contribution to the development of individual intelligence (Vygotsky's perspective about intrapersonal dialogue) as well as trigger individual to raise some questions and clarification over something attesting the validity and reliability of such information and expression. This is believed as one strategy to enhance the critical thinking, just in line with the idea of Forneris [7] about four basic cores in practicing critical thinking: context, reflection, dialogue, and time.

This is also as additional explanation that classroom discussion in the form of in-class debate (part of collaborative learning) will be much more effective as the individual has ample preparation through self-reflection toward what has been learned and will be learned. In line with the individual, prominent teacher should not only set high contention during the discussion, but what lesson and experience that the students can also learn from the discussion; either they lose or win, there should be lesson to be reflected and shared with the other members (peers).

#### **4. Conclusion**

The general findings of the survey, the findings of this research corroborated the different constructions, showing how the debaters and might be the younger generations in Indonesia have positive attitude towards critical thinking and/or any open-minded perspectives in the context of academic debate. Instead of culture-bound, clear stance is closely related to the motivation of the students to seek for information of certain topic and engage with it. They showed obvious positive attitude that clarity is very important, and in reverse that half-stance is not preferable. Thus, what instructor should concern related to bold stance in certain topic is the background knowledge or the discipline of the students before asking them to take side towards certain issues. Building common ground and purpose in the classroom members is also important as they should agree that the purpose of the debating and discussion in the classroom is intended to enhance critical thinking, not simply winning the discussion. This is what actually concerned in the context of academic debate practices. The classroom discussion would lead into contextualized discussion, both the process as well as the outcome.

Thus, this finding of positive attitude towards critical thinking might be applicable as the consideration of developing academic curricula for classroom discussion to integrate critical thinking. In developing a debate curriculum in the classroom, for instance, it is important to distinguish the difference between the policy-making debate and moral debate. Teachers no longer need to hesitate to introduce critical thinking and in-class debate to their students, who have been characterized as collectivists and non-critical thinkers.

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# Synthesis of Al-UiO-66-NH<sub>2</sub> with Acetic Acid Modulator by Solvothermal Method

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## ABSTRACT

Al-UiO-66-NH<sub>2</sub> have been synthesized by solvothermal method in the N, N'-dimethylformamide (DMF) as solvent and using zirconium tetrachloride (ZrCl<sub>4</sub>), amino-1,4 benzenedicarboxylic (BDC-NH<sub>2</sub>), alumina (Al<sub>2</sub>O<sub>3</sub>), and acetic acid (CH<sub>3</sub>COOH) for 24 hours at 120 °C. The molar ratio of Zr:Al used was 0.5. Equivalent molar ratio of modulator to Zr were 30:1, 50:1 and 100:1. The synthesized product was a yellow powder that characterized by X-ray Diffractometer (XRD), Fourier Transform Infrared (FTIR), and Scanning Electron Microscope (SEM). XRD results showed that the diffractogram intensity increased by the addition of the modulator. Interaction Al-O-Zr also observed by FTIR on a wave number region of 650 to 800 cm<sup>-1</sup>. Moreover, the addition of a modulator shown to affect the morphology of the particles based on the SEM.

**Key Words:** Al-UiO-66-NH<sub>2</sub>, modulator, functional group, metal addition, solvothermal.

Metal Organic Frameworks (MOFs) is a crystalline porous solids formed by the linkage of metal ions or metal-oxo clusters and polydentate organic linkers, forming three dimensional network defining regular nanometric pore channels and cavities similar to those found in zeolites [1]. This material has been widely researched and developed because of its unique character such as a high surface area, regular pore structure, and structures that can be designed [2]. Referring to the easiness design of the structure, through the selection of organic ligands and metal precursors carefully, a large number of topologies can be designed and synthesized [3,4]. One potential material to be developed is Zr-MOFs.

Zr-MOFs material has a stable SBU (Secondary Building Units) so resistant to water and mechanical pressure. SBU is composed by octahedron shape of six zirconium cations and connected with other twelve by dicarboxylic SBU linker [5]. Materials with such SBU is classified as UiO-66, UiO-67, and UiO-68 depending on the type of dicarboxylic acids that exist in the linker. Zirconium high affinity for oxygen and the packed structure of the SBU explain the high thermal stability and chemical stability. UiO-66 is a promising MOFs for the reasons of stability, not acid degraded, and many solvents can be used. UiO-66 can also be modified in various ways, during the initial synthesis and post-synthesis [6]. This makes UiO-66 a molecule that can be designed depending on the application [7].

MOFs interesting characters make this material applied to many fields such as the adsorption [8,9], gas separation [10,11], CO<sub>2</sub> catcher [12], hydrogen storage [13], medical [14], and the catalyst [15,16]. Among the several applications of the MOFs, which has the potential to be further developed is its function as a catalyst. An increase in the catalytic activity of the catalyst Zr-MOFs through the addition of functional groups [15] and other metal ions [17]. As reported by Cirujano et al. (2014), the addition of -NH<sub>2</sub> functional group aims to improve the catalytic activity through the activation of the acid-base dualism [15]. The synthesis of Re-UiO-67 for the photocatalytic CO<sub>2</sub> reduction reactions reported by Wang

et al. (2013) have higher activity than UiO-67 without the addition of other metal ions. On the other hand, the addition of  $ZrO_2$   $Al_2O_3$  catalyst has been reported to create Zr-O-Al interaction that able to increase the acidity of metal oxide. The addition of the metal ions Zr on Al-MCM-41 has been reported to enhance the catalytic activity with increasing ratio of Si/Zr, due to the increase in the Brønsted acid as a result of metal Zr and the influence of Al as Lewis acid site [18].

Selection of synthesis methods are necessary to obtain the optimum material characteristics, such as large pore volume, large surface area, and a lots of active sites. The method can be used is solvothermal [19], and post-synthesis modification [3,4]. Solvothermal method has several advantages that can be applied to reactions that require high temperatures and the formation of the nano-sized morphology [20]. Furthermore, the addition of a modulator in the synthesis of MOFs aims to increase the surface area and the active site [21]. Some modulators are used, include formic acid, acetic acid, trifluoroacetic (TFA), and benzoic acid, can accelerate the reaction rate and improve the regularity of the crystal. Therefore, researchers synthesize UiO-66 with the addition of functional groups  $-NH_2$ , the addition of Al metal, and also acetic acid modulator by the solvothermal method for 24 hours at 120 °C.

## 1. Experimental Methods

### 1.1 Material

Zirconium tetrachloride ( $ZrCl_4$ , Sigma-Aldrich, 99%), alumina ( $Al_2O_3$ , Merck, 99%), amino 1,4-benzenedicarboxylic (BDC- $NH_2$ , Sigma-Aldrich, 99%), N, N-dimethylformamide (DMF, Sigma-Aldrich, 99%), acetic acid ( $CH_3COOH$ , Sigma-Aldrich, 95%), and chloroform ( $CHCl_3$ , Merck, 99%).

### 1.2 Procedure

Al-UiO-66- $NH_2$  were prepared according to the reported procedure. The molar ratio of Al/Zr was 0.5 [22] and the equivalent molar ratio of Zr/modulator were 1:30, 1:50, and 1:100 [13]. Firstly, dissolved 0,6117  $Al_2O_3$  in 40 mL DMF and 0.6992 grams of  $ZrCl_4$  in 20 mL DMF in a separate place. A total of 0.546 grams of BDC- $NH_2$  was added to a solution of  $Al_2O_3$ . After that, a solution of  $ZrCl_4$  was added to a mixture of  $Al_2O_3$  and BDC- $NH_2$ . Lastly, (5,1; 8,6; and 17,1 mL) acetic acid was added to the mixture and stirred with a magnetic stirrer for 30 minutes. The mixture formed in the reaction flask was then closed and the oven at 120 ° C for 24 hours in a static state [19]. The mixture was then cooled for 24 hours and the precipitate formed was separated by decantation. The precipitate was then immersed in 45 mL of DMF for 24 hours, followed by washing with 45 ml of chloroform for 24 hours. Washing with chloroform was conducted twice. The precipitate obtained by heating at the oven at 90 °C for 2 hours. The solids that formed were characterized by X-ray Diffraction (XRD), Infrared Spectroscopy (FTIR), and Scanning Electron Microscope (SEM).

## 2. Results and Discussion

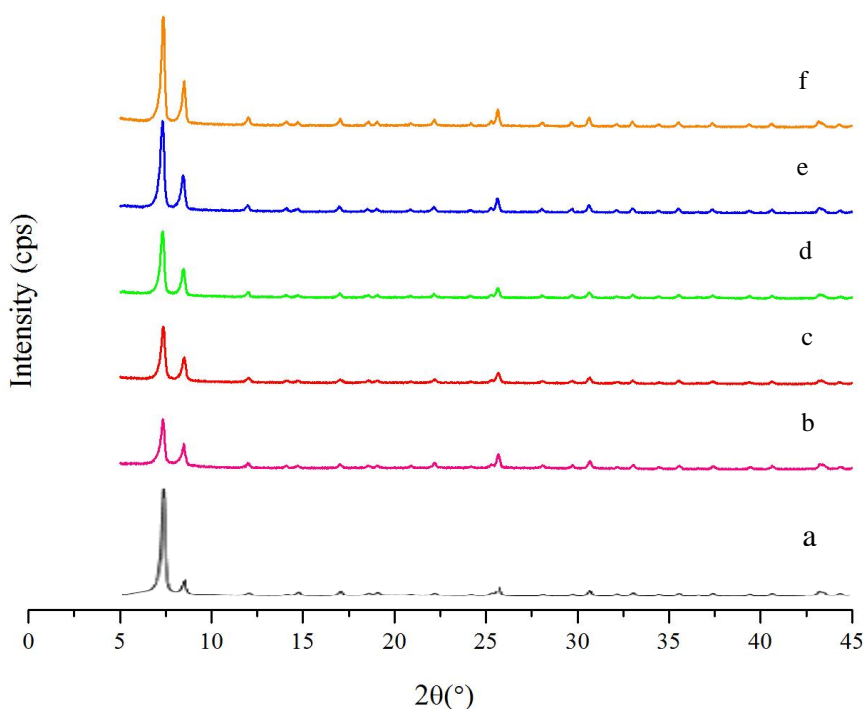
### 3.1 Synthensized Results

Synthesis of Al-UiO-66- $NH_2$  with acetic acid modulator performed at 120 °C for 24 hours. The molar ratio of Zr:Al was 0.5, while the equivalent molar ratio of modulator to Zr was 30:1, 50:1 and 100:1 to see the effect of modulators on the character of the synthesized

material. The mixture solution of  $\text{Al}_2\text{O}_3$  in DMF and BDC- $\text{NH}_2$  was yellowish. The purpose of this step is to make the metal and the ligand interact with each other. The addition of  $\text{ZrCl}_4$  in DMF to the mixture does not change the color much. Before stirred with a magnetic stirrer, acetic acid that acts as a modulator was added into the mixture. Depending on the amount of modulator, the mixture's color was getting fade. After 30 minutes and mixed homogeneously, the reaction is carried out at  $120\text{ }^\circ\text{C}$  in the oven. After 24 hours, the mixture was decanted. For the final procedure, the solid needed to be washed with DMF to remove unreacted reactants while to remove the remaining solvent was by washing it with chloroform twice. Drying the synthesized product was the last step to obtain a high porosity.

### 3.2 X-ray Diffractometer (XRD)

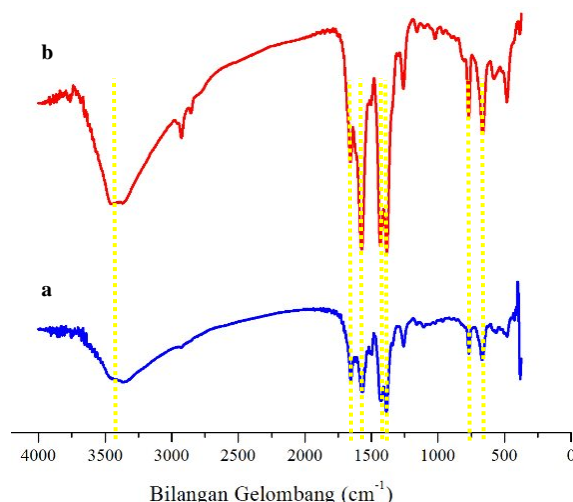
Once synthesized, the solids obtained needs to be characterized by XRD to identify the material and also determine the level of crystallinity. Identification of solids results of the synthesis is done by comparing the peak appearing in the diffractogram synthesized by reference. Based on Figure 1, the solid results of the synthesis has characteristic peaks corresponding to  $2\theta$  reference is at  $7.3$ ;  $8.4$ ;  $11.9$ ;  $14.1$ ;  $14.7$ ;  $17$ ;  $18.5$ ; and  $19$  [13]. It means that the addition of modulator to the framework does not change its structure. Further, the crystallinity can be determined by comparing the intensity of the characteristic peaks. Based diffractogram, along with the addition of the intensity modulator characteristic peak also increased. This indicates that modulator material affects regularity.



**Figure 1** Diffractogram of (a) UiO-66 [19], (b) UiO-66- $\text{NH}_2$ , (c) Al-UiO-66- $\text{NH}_2$ , (d) Al-UiO-66- $\text{NH}_2$  30 equivalent, (e) Al-UiO-66- $\text{NH}_2$  50 equivalent, and (f) Al-UiO-66- $\text{NH}_2$  100 equivalent

### 3.3 Fourier Transform Infrared (FTIR)

Characterization by FTIR spectrophotometer aims to identify functional groups contained in materials synthesis results. It can show whether there is a bond Al-O-Zr in the Al-UiO-66- $\text{NH}_2$ . Infrared spectra were taken on a wave number region  $500\text{-}400\text{ cm}^{-1}$ , as shown in Figure 2.



**Figure 2** Infrared spectra (a) UiO-66-NH<sub>2</sub> and (b) Al-UiO-66-NH<sub>2</sub> 100 equivalent

Infrared Spectra of UiO-66-NH<sub>2</sub>, Al-UiO-66-NH<sub>2</sub>, and Al-UiO-66-NH<sub>2</sub> 100 mol equivalents of acetic acid modulator showed an absorption band of C-O, C = O, C = C, C-N, and N-H bonds. In the region of wave number 1500 cm<sup>-1</sup> appears the peak of C = C bonds of the aromatic organic ligands. Absorption peaks of C = O bond of carboxylic group appears at region of wave number 1650 cm<sup>-1</sup>. While C-N and N-H bond successively appeared on region of wave numbers 1300 and 3300 cm<sup>-1</sup>. The absorption band of Zr-O and Al-O in Al-UiO-66-NH<sub>2</sub> and Al-UiO-66-NH<sub>2</sub> 100 equivalent, appears in the wave number region 700-400 cm<sup>-1</sup> [23]. This results indicate that Al-UiO-66-NH<sub>2</sub> have been synthesized successfully. Bonding types and wave numbers of material's FTIR results are summarized in Table 1.

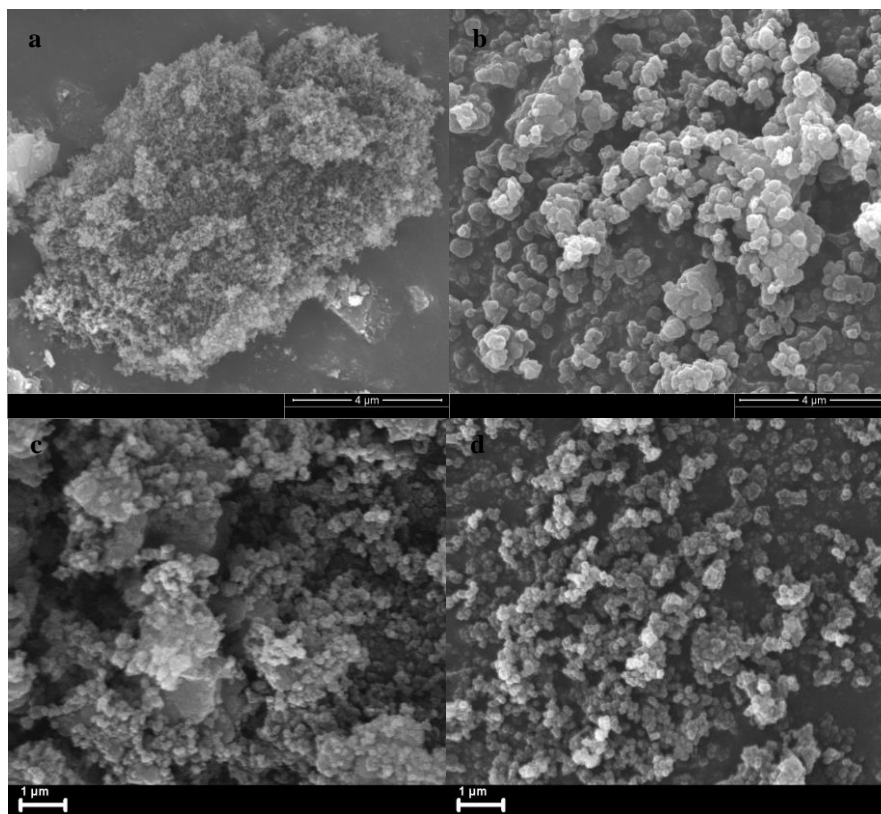
**Table 1** Wave Numbers and Bonding Type of Material

Materials	Wave Number (cm <sup>-1</sup> )	Bonding Type
UiO-66-NH <sub>2</sub>	665,46	Zr-O
	1346,36	C-N amin aromatic
	1433,16	C-O carboxylate
	1572,04	C=C aromatic
	1656,91	C=O stretching
	3429,55	N-H stretching
Al-UiO-66-NH <sub>2</sub> 100 equivalent	663,53	Zr-O
	769,62	Al-O
	1386,86	C-N amina aromatic
	1433,16	C-O carboxylate
	1572,04	C=C aromatic
	1656,91	C=O stretching
	3404,47	N-H stretching

### 3.4 Scanning Electron Microscope (SEM)

Synthesized product were characterized by SEM to determine the surface morphology. Based on SEM results shown in Figure 3, shows that the addition of a modulator affect the particle's morphology. Synthesis of UiO-66-NH<sub>2</sub> without modulator show agglomerated particles and irregular, while the presence of the modulator make particle's morphology becomes more regular and smaller. This is consistent with the results of XRD that by the

addition of the modulator, the characteristics peak intensity is increase. In this case, modulator can be used as a tool for controlling size and shape [24]. They also proposed that the modulator's ability to influence the morphology of the particles with respect to its role as a particle growth inhibitor.



**Figure 3.** SEM photos of (a)  $\text{Al}_2\text{O}_3$ , (b)  $\text{UiO-66-NH}_2$ , (c)  $\text{UiO-66-NH}_2$ , and (d)  $\text{Al-UiO-66-NH}_2$  100 equivalent

## 4 Conclusion

$\text{Al-UiO-66-NH}_2$  have been synthesized by the addition of acetic acid modulator at  $120\text{ }^\circ\text{C}$  for 24 hours. The molar ratio of  $\text{Zr:Al}$  was 0.5 while the equivalent molar ratio of modulator to  $\text{Zr}$  was 30:1, 50:1 and 100:1. Synthesized product is a yellow powder that characterized by X-ray Diffractometer (XRD), Fourier Transform Infrared (FTIR), and Scanning Electron Microscope (SEM). Based on the results of characterization and analysis found that the addition of modulator can improve the crystallinity and influence the particle's morphology. The addition of a modulator in the synthesis of  $\text{Al-UiO-66-NH}_2$  make the particles have a morphology that is more regular and smaller than without acetic acid modulator.

## 5 Acknowledgement

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# Synthesis and Characterization of Sn-ZIF-8 by Solvothermal Method

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## ABSTRACT

Sn(II)-doped ZIF-8 have successfully been obtained by solvothermal method in DMF solvent at 120 °C for 24 hours. The products were characterized by X-ray diffraction (XRD), fourier transform infrared spectroscopy (FTIR), and scanning electron microscopy-energy dispersive X-ray (SEM-EDX). The characterization results showed that doping of Sn(II) into ZIF-8 influenced the crystallinity and morphology of ZIF-8, even though the structure of ZIF-8 remained unchanged. Crystal with high crystallinity and regular surface morphology was belonging to Sn-ZIF-8 with 5% of doping.

*Key Words: MOF, ZIF-8, Synthesis, Solvothermal, Doping*

## 1. Introduction

Metal-organik Frameworks (MOFs) are new porous material that interested to study because it has several advantages compared to other porous materials. MOFs are materials with a structure constructed from several of metal clusters and variety of organic ligand [1]. MOFs have some sub-classes based on the variety of metal ions and organic ligands constituent. One type of MOFs is Zeolitic Imidazolate Framework (ZIF). ZIF is a type of MOF which has a similar structure to aluminosilicate zeolite. While the differences between ZIF and zeolite are the silica or alumina in zeolite are replaced by transition metal in ZIF such as Zn(II), Co(II), or In(III). In the other hand, imidazole of ZIF are replacing oxygen that linking between silica and alumina of zeolite [2].

One type of ZIF is ZIF-8. ZIF-8 has ae structure of sodalite (SOD). The frameworks of ZIF-8 are constructed by interaction of Zn<sup>2+</sup> ion and 2-methylimidazole ligand with tetrahedral coordination. In various application of ZIF-8, researchers attempted to increase the activity of ZIF-8 by some modification. One kind of modifications was used small fraction of metal ions constituent by foreign metal ions (doping) at the framework [3]. Doping is conducted by mixing a solution containing foreign metal ions with solvent [4]. Doping modification with active metal on the porous materials is increasing the activity of active side and functionality of metal.

In recent decades, study of ZIF-8 focused on the application as catalyst, gas capturer, and gas storage. In catalytic reaction, ZIF-8 act as bi-functional catalyst that has both acidic and basic sides. The acidic sides of ZIF-8 are derived from Zn<sup>2+</sup> ions and the basic sides from imidazole groups [5]. ZIF-8 has been known as active heterogeneous catalyst for some organic reaction.

In the study of monoglyceride synthesis, ZIF-8 was used as a catalyst and giving 57% of activity [6]. In other study, synthesis of monoglyceride was used Sn-EOF (Tin-organic Framework) as a catalyst and giving low activity and high selectivity [7]. Based on these descriptions, in this study the synthesis of ZIF-8 has been doped by metal ions of Sn<sup>2+</sup>.



## 2. Methodology

### 2.1 Synthesis of Sn-ZIF-8

In this study, syntheses of Sn-ZIF-8 have been carried out using solvothermal method. Sn-ZIF-8(s) were synthesized by mixing 2.329 gram of zinc nitrate with 2.5-5% of SnCl<sub>2</sub> based on zinc nitrate mass. In others glass, 1.3120 gram of 2-metilimidazole were dissolved in 15 mL of *N,N*-dimethylformamide. These mixtures were poured into Duran bottle under stirring for 20 minutes until homogeneous. After stirring, the solution was heated to 120 °C for 24 hours. The precipitate product was decanted and washed by 15 mL of methanol. The washing was conducted two times 24 hours.

### 2.2 Characterization of Sn-ZIF-8

X-ray diffraction patterns were measured with Expert MPD 40 kV, 30 mA using Cu K $\alpha$  radiation ( $\lambda = 1.54060 \text{ \AA}$ ). The patterns were recorded for  $2\theta$  between 5° and 40° and compared with XRD patterns of ZIF-8 synthesized by Zhang [8]. FTIR characterizations were done on Shimadzu spectrometer with resolution of 1 cm<sup>-1</sup>. KBr pallets of samples were analyzed in range of 4000-400 cm<sup>-1</sup>. The samples were also characterized by Scanning Electron Microscopy-Energy Dispersive X-ray (20.00 kV and 8.0 mm).

## 3 Result and Discussion

### 3.1 Synthesis of Sn-ZIF-8

In this study, Sn-ZIF-8(s) have been synthesized by solvothermal method with DMF solvent. This method have been chosen because of ZIF-8 produced in previous studies have higher thermal stability compared with hydrothermal method [9]. In this method, syntheses have been carried out at 120 °C because at that temperature synthesis can produces ZIF-8 with high crystallinity. While reaction time used is 24 hours because that is the optimum reaction of the precursors [10].

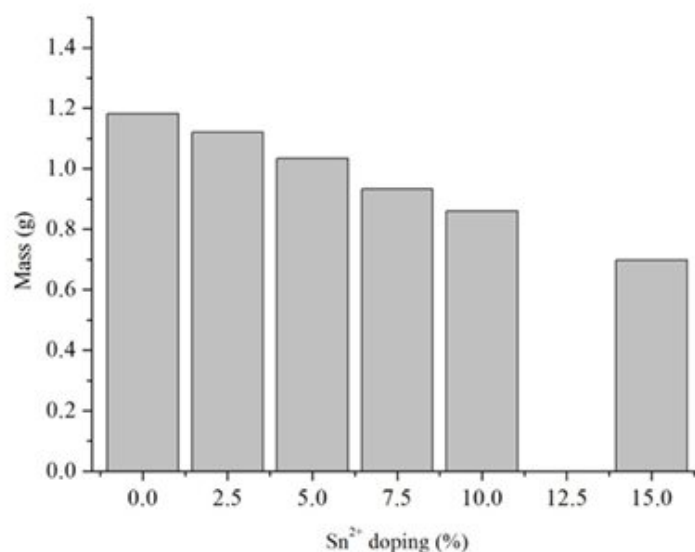


Figure 1 Graph of Mass toward Sn<sup>2+</sup> Doping Percentages

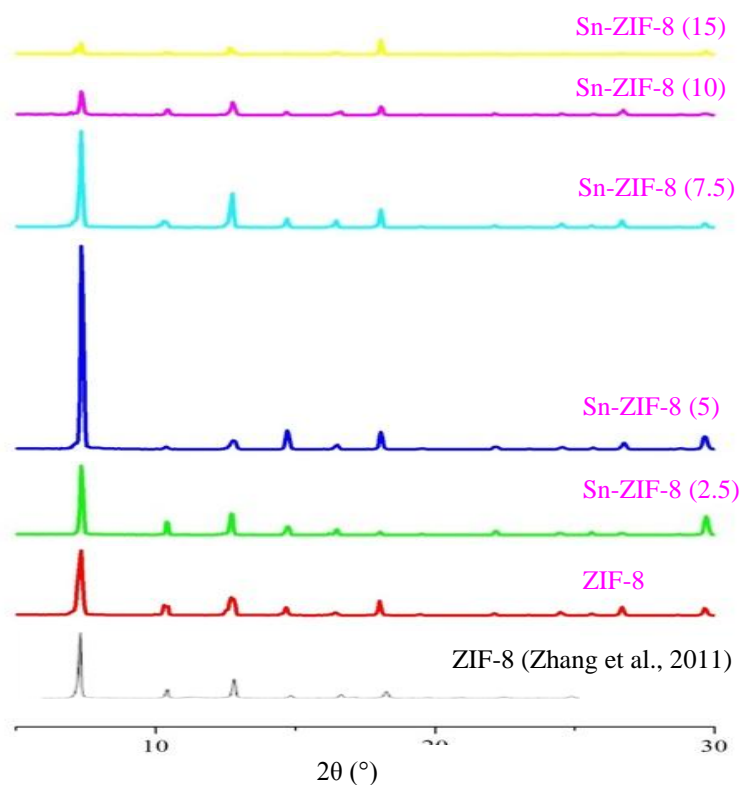
After heating process, the solids formed were separated from the filtrate and washed with methanol to remove the residual DMF trapped in the framework. To remove methanol residual of washing process, the materials were dried at 70 °C because the boiling point of methanol is 65 °C.

Based on Figure 1, the mass of materials syntheses were decreases with the increasing of doping of Sn ions. The mass reductions are caused by increasing of  $\text{Sn}^{2+}$  content that react with MeIm forming framework, so the trapped Sn-imidazole compounds in the frameworks or pores are decrease.

### 3.2 Characterization of Sn-ZIF-8

The effect of Sn doping in ZIF-8 crystallinity is shown in Figure 2. At  $2\theta$  around  $7^\circ$  occurring significant changes of intensity. The data is shows the highest crystallinity is formed on Sn-ZIF-8(5). While the diffraction patterns of Sn-ZIF-8 doped with 10% and 15% of  $\text{Sn}^{2+}$  experienced a significant decline indicating the structures formed are irregular. It is due to the increases in the percentages of doping, more MeIm ligand possibility react with  $\text{Sn}^{2+}$  than  $\text{Zn}^{2+}$ .

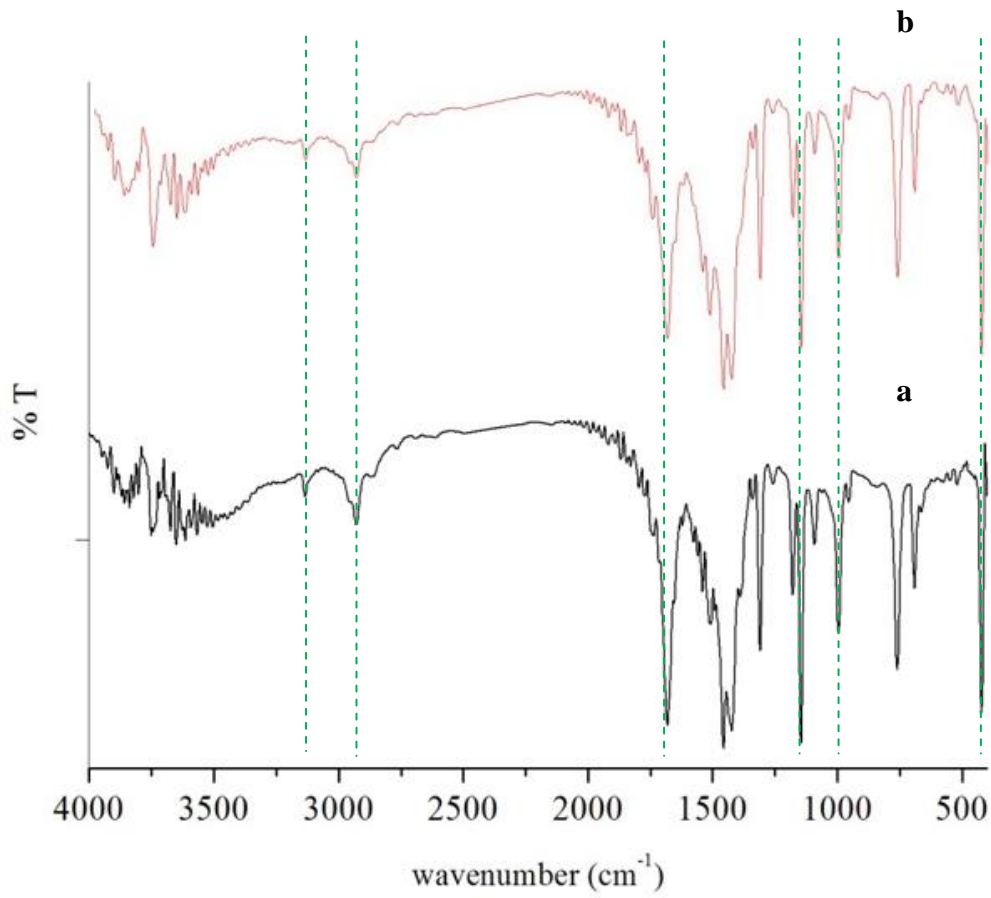
The diffraction pattern does not indicate the presences of new peas other than the characteristic peaks of ZIF-8. It is shows that fractions of  $\text{Zn}^{2+}$  on ZIF-8 have been replaced by  $\text{Sn}^{2+}$  without changing the structure of ZIF-8. It is proved that there has been a doping of Sn ions on the frameworks of ZIF-8.



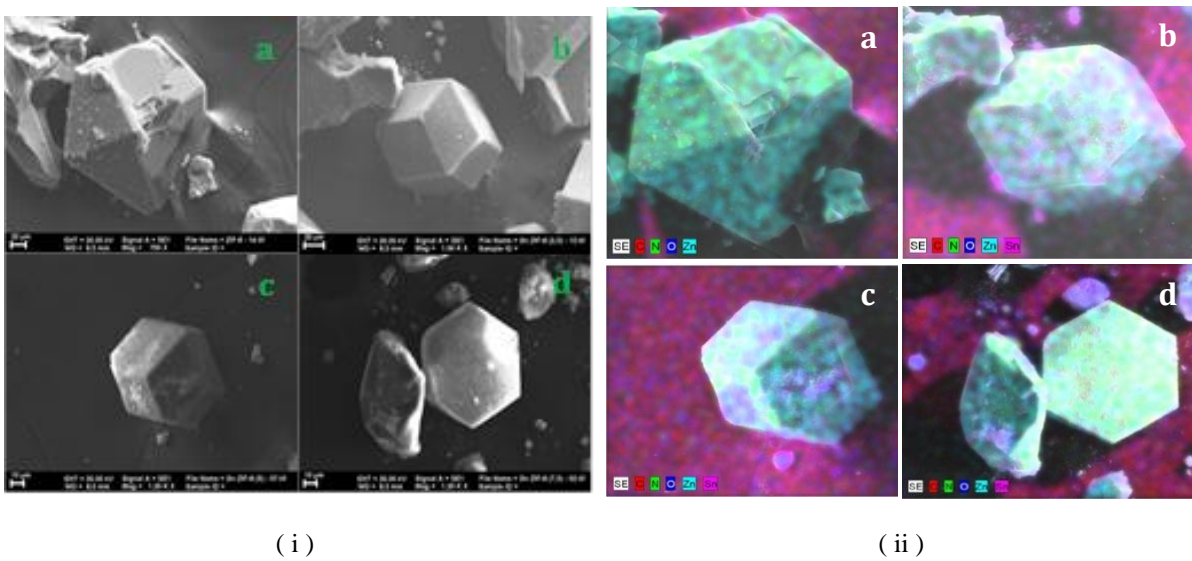
**Figure 2** XRD Patterns of ZIF-8 and Sn-ZIF-8

Based on the FTIR spectra in Figure 3, it can be seen that ZIF-8 with  $\text{Sn}^{2+}$  doping has same kind of vibration to ZIF-8. Peak at wavenumber of  $420\text{ cm}^{-1}$  is indicates stretching vibration of metals ions with  $-\text{N}$  on 2-imidazole ligand. The FTIR spectra of ZIF-8 and Sn-

ZIF-8 are support the XRD result in case of there are no changing of structure of the materials after doping Sn<sup>2+</sup> conducted.



**Figure 3** FTIR Spectra of (a) ZIF-8 and (b) Sn-ZIF-8 (5)



**Figure 4** (i) Morphology of (a) ZIF-8 (b) Sn-ZIF-8 (2.5) (c) Sn-ZIF-8 (5) (d) Sn-ZIF-8 (7.5); (ii) EDX Images of (a) ZIF-8 (b) Sn-ZIF-8 (2.5) (c) Sn-ZIF-8 (5) (d) Sn-ZIF-8 (7.5)

In the other hand, SEM-EDX studies have been carried out to determine the morphology of ZIF-8 and ensure that materials synthesized are ZIF-8 with Sn ions doping based on the content of Zn, C, N and Sn. Figure 4 (i) and (ii) are shows the morphology and EDX images of ZIF-8 and Sn-ZIF-8. Based on the Figure 4, the structures of Sn-ZIF-8 are more regular than ZIF-8. It is consistent with the characterization result of XRD. In the Figure 4 (ii) a, b and c show the content of Sn on the framework of ZIF-8 which proved Sn has been doped on it. All of the SEM-EDX studies are supporting the result of XRD studies.

## 4 Conclusion

Sn-ZIF-8(s) have been successfully synthesized using solvothermal method with DMF solvent at 120 °C for 24 hours. The materials prepared from zinc nitrate hexahydrate as a of metal ions sources, 2-methylimidazole as a ligand, and tin(II) chloride as a metal ions doping. The percentages of Sn doping are 0-15% of zinc nitrate mass. Material with the highest crystallinity obtained from the 5% of Sn doping. the morphology of the materials also show ZIF-8 with Sn doping having more regular structure that ZIF-8 without doping.

## 5 Acknowledgment

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## **The Use of Digital Stories to Improve Students' Recount Writing Ability**

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### **ABSTRACT**

Audio-visual aids are assumed as effective instructional media to provide attractive and contextual input to develop students' linguistic knowledge and encourage them to communicate using English both written and spoken. This research aims to investigate the effectiveness of digital stories as instructional media in improving students' recount writing ability. The research methodology used is classroom action research. Observation sheets, writing tasks and questionnaires were administered in order to obtain the data. After the data were collected, coded, organized, interpreted, analyzed and concluded, the researcher finds out that the students have significantly improved their recount writing ability, as the influence of their experience in comprehending and analyzing some digital stories. The research categorized successful since the analysis of students' writing scores showed there was 12.04% improvement of students' mean score from the students' preliminary writing score which is 63.35 to the writing score of cycle 1 which is 70.98. In the Pretest, there were eight students or 13.79% of the students passed the minimum passing criteria. Meanwhile, in the result of post-test of the cycle 1, there were twenty or 34.48% students in the class who passed the minimum passing criteria. Next, based on the result of the post-test of cycle 2, there was 16.16% improvement of students' mean score from the writing score of cycle 1 to cycle 2 considering cycle 2 mean score that reached 82.45 in which 48 students or 82.76% students passed the minimum passing criteria. It showed that the students recount writing ability has significantly improved.

Keywords: digital stories, instructional media, recount, writing.

### **1. Introduction**

English has been taught to thousands of students from all over the world since as an international language it is widely used throughout the world for business, diplomacy, science and education. As the globalization era comes, there are many innovations in technology facilitate communication and connecting people around the world. Supported by the growth of technology, many kinds of instructional media that can be used in the ESL classroom to ensure the learning material is successfully transferred through meaningful and effective activities. Thus, an ideal English teacher has to make English teaching and learning activity interesting and easy for the learners in order to minimize learner's anxiety, inspire the learners with new linguistic knowledge, and the most important above all is give the learners opportunity in practicing their skill in order to train and encourage them to produce the target language.

The classroom is suggested to be a place where the students can get comprehensible input that they need for acquisition (Krashen, 1981: 9). Moreover, considering the importance of language input, it is suggested by Krashen (1981: 101) to language teachers to utilize context, which includes extra-linguistic information, knowledge of the world, and learners' previously acquired linguistic competence. Early language teaching methods placed speech as the primary form of language and that writing depends on speech, but few teaching methods in the twentieth century saw speech and writing as being equally important based on the assumption that written language has distinct characteristics of its own.

However, the practice and the study of writing remain essential components in the language learning. Writing activity can take role as a means of communication as well as a means of discovery. Writing activity is beneficial because merely it becomes a process of discovery for the students as they discover new ideas and language forms to express the ideas and it is seen as a developmental process when students choose their own words for their writing. In writing, students frequently have more time to think than in speaking, so they can express almost all that they have in their minds, and also consult dictionaries, grammar books, or any other reference for the perfection of their writing (Harmer, 2004: 31).

As the oldest form of education that has the potential to contribute to children's language and literacy development, stories are also being adapted to the modern digital era. The developments in language teaching theories and stories digitalization led the researcher to focus on the use of digital stories to improve students' recount text writing ability. The researcher believes that integrating digital stories into language teaching and learning activities as instructional media can provide communicative and comprehensible input for English learners, help teachers in providing context to transfer the material, attract learners' attention, and by a good selection enrich students' vocabulary and cultural knowledge, expand students' linguistic and cognitive skills, inspire the learners with ideas, and encourage them to produce similar texts in the target language whether written or spoken.

## **2. The Power of Digital Stories**

Jonassen et al (1993) cited in Sadik (2008 : 489) argue that teachers can use technology as tools for accessing information, interpreting and organizing their personal knowledge, and producing and representing what they know to others. So as it engages students more, it is also a result of knowing in more meaningful and transferable knowledge. Separately, according to Collie & Slater cited in Pardede (2011:15) using literature in language teaching is very advantageous for it offers four benefits: authentic material, cultural enrichment, language advancement, and personal growth. This is in line with Erkaya's argument (2005: 2) who notes four benefits of using short stories to teach ESL/EFL, i.e. motivational, literary, cultural and higher-order thinking benefits.

Digital story constitutes a meaningful approach for energizing instructors and motivating students. Several studies have shown that a digital storytelling goes beyond the capabilities of traditional storytelling by generating students' interest, concentration, and motivation, facilitating student collaboration and organization of ideas, helping students to comprehend complex learning content, and presenting knowledge in an adaptive and meaningful manner (Robin, 2006, 2008; Van Gils, 2005; Sadik, 2008). Further, Gils (2005: 5-6) summarized the advantages of using digital stories in education into five categories: (1.)

To provide more variation than traditional methods. (2.) To personalize the level of education. (3.) To make learning topics more compelling since it is supported by an interesting story. (4.) To place the students in a more real life situation in an easy and cheap way. (5.) Arouse the enthusiasm and enhance the involvement of students in the process of learning.

It is possible to categorize digital stories into three major types (Robin, 2006: 2): (1) Personal stories which is dealing with some significant incidents in one's life and emotional personal issues between the characters who were described in the story, (2) Historical documentaries that include historical information to examine dramatic events that help the audience understand the past. (3) Instructional digital stories that reflect instructional material or designed in order to inform or instruct the audience on a particular concept or practice.

The researcher chose personal digital stories as instructional media in the teaching of recount writing because digital stories is a form of entertainment that enacts a story by sound and a sequence of images giving the illusion of continuous events. Besides that it can tell a story clearly by showing clear expression of characters, clear plots and clear description of situation in the story. So, most students will enjoy studying writing recount text through digital stories as instructional media.

### **3. Research Methodology**

This research is designed to improve the students' recount writing ability through the use of digital stories. The researcher worked collaboratively with the teacher who taught in the X grade. The first meeting was for preliminary observation in which the students were given the first writing task to check the students' writing ability before the actions. The study was conducted in two cycles of planning, implementing, observing and reflecting. Every cycle took one meeting. Meanwhile, the subjects of this study were 58 tenth graders of SMA Al Falah Ketintang Surabaya in the first semester of 2015/2016 academic year. The information of the preliminary data was gathered through observation sheets, students' recount writing scores, and questionnaire of the difficulties faced by the students. The analytic scoring rubric of writing modified from Brown (2001: 344-345) was used to score and to analyze the students' answers. It will be scored by some criteria: ideas development (content); organization; language features; punctuation, spelling and mechanics; and style and the quality of expressions. The research was considered successful if 80% of the students passed the minimum passing criteria (75). The scoring rubric contains information of the way score or mark that be given to the students. The rubric was broken down for 12 items. The rubric items are useful means of testing to assess students' ability to produce the correct recount text.

The language teaching and learning progress were monitored and evaluated through observation sheets, students' writings, and students questionnaires. The observation focused on the teacher performance and the students' activities during the teaching learning process of recount writing, while the students' writing score and questionnaire are focused on difficulties faced by the students during recount writing activity, the improvement of students' writing and the effectiveness of digital stories usage in the teaching of recount writing to improve students' recount writing ability.



#### 4. Finding and Discussion

Before the action, at the beginning of the research, the researcher observed the classroom. The students' writing score in the preliminary observation showed that there were only 8 or 13.79% of the students passed the minimum passing criteria (KKM) and there were 50 students out of 58 students or 86.21% of the students whose scores are below the minimum passing criteria. The average achievement of students' preliminary writing is 65.35, far below the minimum passing criteria. It was because the activities in the writing lesson were monotonous and reading text as instructional media used were less interesting, inspiring and encouraging in order to make the classroom activities effective and meaningful to improve students' competence and skill. These conditions made the researcher conducted a classroom action research.

The students' difficulties analyzed from the items of writing score were the reorientation development, the use of adverbs, cohesion and coherence of the writings, and the use of time connectives. Moreover the researcher's preliminary observation field notes record that during the preliminary writing activity; the students did not feeling confidence in arranging words and thought hardly about the words they are going to write. Sometimes because no idea about the words, the students try to ask to their classmates and the teacher. Even after the time is up and they had to submit their writing, most of them said to the teacher that the writing activity was difficult for them and their writings were not complete yet.

Considering the result of preliminary observation and preliminary writing, the teacher and the researcher decided to use an interesting audio visual instructional media that besides provide contextual inputs, also can raise students' motivation and confidence during the learning process. The use of audio visual instructional media was expected to improve students' understanding and ability in recount writing. They decided to use digital stories as instructional media to facilitate the teaching learning process.

After the preliminary observation, a lesson plan for the first cycle was arranged The material was taken from Sarwoko's "English on target 1" book that published by Erlangga. For the first cycle instructional medium, a digital story entitled *Dear Mama* was chosen. Observation sheets for the observers to observe teacher performance and students activity during the teaching and learning process also been prepared. The most important were students' writing sheets to evaluate students' ability and questionnaires to monitor students' difficulties, the effect of digital stories to their writing ability, and their expectation of the next writing class.

The activities were administered to be implemented on Wednesday, 12<sup>th</sup> of August 2015. At the beginning of the lesson, the researcher did apperception activity to introduce the material and slightly review about recount text. After the review, the digital story was shown to the students. Some related vocabulary items from the digital story then were listed, demonstrated, trained to be pronounced correctly to the students, and discussed to help the students comprehending the digital story. To check the students' knowledge of personal recount, the digital story was shown once more and discussed to identify the structure. The

discussion and explanation about simple past tense, past verbs (both regular and irregular), and the time signals being the last activity before recount draft revision activity which was done within 20 minutes. The drafts from the preliminary writing activity were developed by the students to be better recount writings. The students were motivated although some of them still asked to the teacher about some past verbs that they want to use in their writing.

The comments, reflections, and suggestions from both observers of the teaching and learning activity showed positive result. Although the digital story used in the first cycle was considered too fast and difficult to be comprehended by the students because of its speaker native intonation. The observers suggested to play and pause (sequencedly play) the digital story instead of played it directly to make sure that the students get maximal advantages from the digital story.

The calculation of the students' writing achievement of the first cycle was 70.98. 20 students or 34.48% of the students passed the minimum passing criterion, but 38 students or 65.52% of them did not reach the minimum passing criterion yet. Besides the writing scores, the students' response in the first cycle about students' difficulties in writing recount text show 13 of 58 or 22,8% of the students having difficulties in searching the idea, 16 of 58 or 28,1% of the students having difficulties on their vocabulary, 22 of 58 or 38,6% of the students admitted that they were having difficulties in expressing past verbs, while the rest 7 persons or 12,7% of the students are having difficulties to concentrate on their writing related to the class situation. Those results indicate that the teaching and learning activities of the first cycle were still not maximal. Although the students' interest and response were good, but their writing ability were still less than the research target. In order to reach the targeted result, other actions were needed to make some improvement of the teaching learning effectiveness and it is necessary to continue the research to the next cycle.

The second cycle was done on Wednesday, 19 of August 2015. Considering the level of difficulty, the researcher used a digital story entitled "My Holiday to London" for the instructional medium. Some modifications were made in the action of the second cycle. The researcher and her collaborator decided to use Indonesian language in the explanation and if it is needed for the clarity of instruction. The researcher also allocate more time for writing activity considering the guidance of the teacher was essentially needed for the improvement of students' ability.

The mean of the students' writing achievement of the second cycle was 82.45 which according to the criterion that has been stipulated by Brown (2001: 344-345) categorized "exceeds expectations". The writing achievement ranged from 63.33 to 96.67 in which 48 students or 82.76% students in the class passed the minimum passing criteria. There were only 11 students or 18.97% of them whose scores below the KKM. It showed that the students recount writing ability has significantly improved. Besides the writing scores, students' responses about the difficulties in writing recount text show only eight of 58 or 13.79% of the students having difficulties in searching the idea, 13 of 58 or 22.41% of them were having difficulties on vocabulary, 27 of 58 or 46.55% of the students were having difficulties in expressing past verbs, while the rest 10 persons or 17.24% were having difficulties to concentrate on their writing related to the classroom situation.

To clearly present the comparison of the percentage of students whose writing passed the KKM of the preliminary writing test, the cycle 1 writing test, and cycle 2 writing test, the researcher put the achievements of the students into a graphic (see figure 4.1). And to make the improvement of four evaluation aspects of students' writing in every cycle clear, the researcher manage students' mean of writing score per-component in a graphic (see figure 4.2).

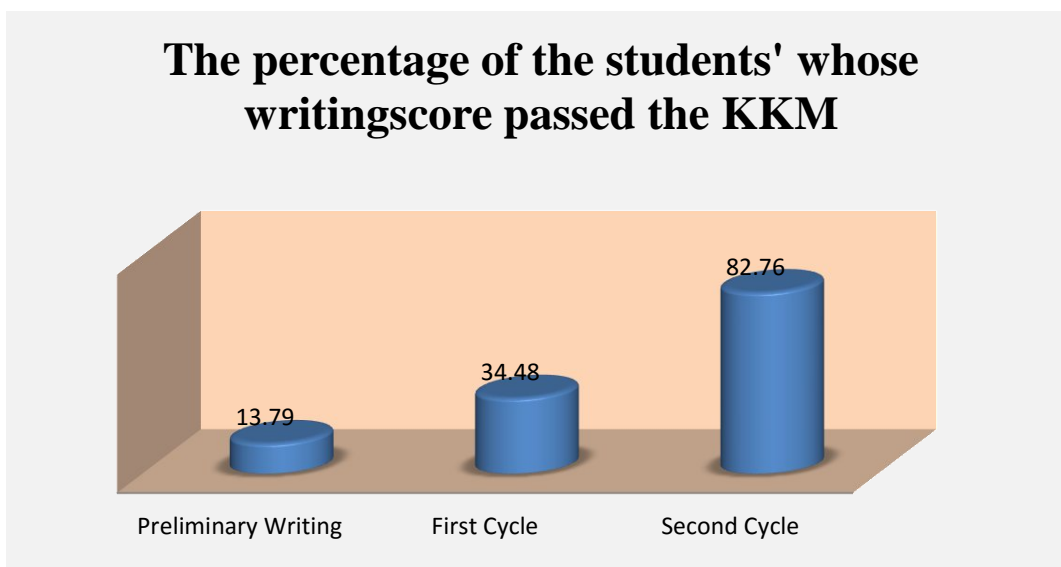


Figure 4.1 Percentage of students whose writing score passed the KKM

### The Improvement of the five writing components evaluated at the writing tasks

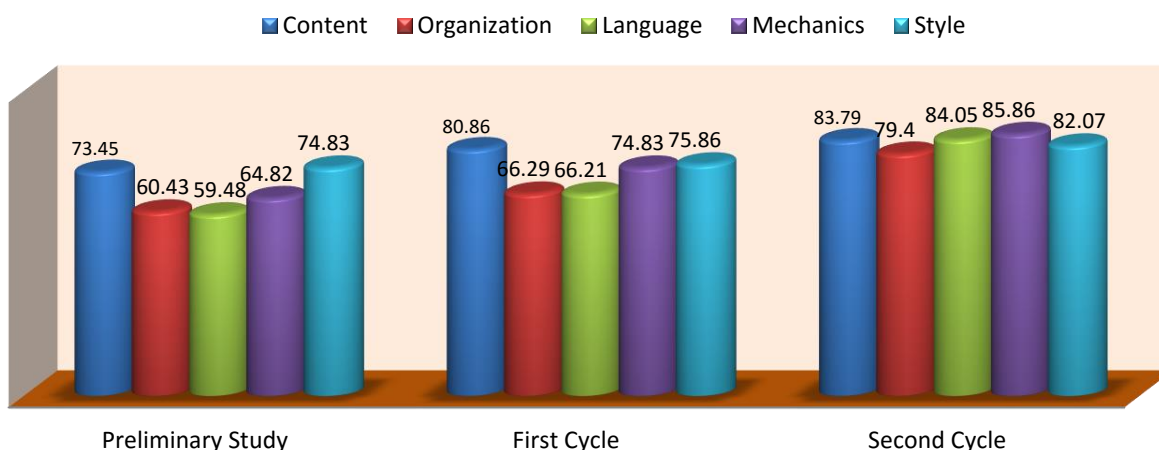


Figure 4.2 The improvement of the students'  $\sum$  scores of the five writing components evaluated from the preliminary writing to the second cycle

The improvement of students' recount writing ability in each cycle can be counted using formula as follow:

$$\begin{aligned}
 I1 &= (A1-A0) / A0 \\
 &= (70.98 - 65.35) / 65.35 \\
 &= 5.63 / 65.35 \\
 &= 0.0862 \\
 &= 8.62\%
 \end{aligned}$$

Note:

- I1 : Improvement of cycle 1
- A0 : Achievement of preliminary writing
- A1 : Achievement of cycle 1

$$\begin{aligned}
 I2 &= (A2-A1) / A1 \\
 &= (82.45-70.98) / 70.98 \\
 &= 11.47 / 70.98 \\
 &= 0.1616 \\
 &= 16.16\%
 \end{aligned}$$

Note:

- I2 : Improvement of cycle 2
- A1 : Achievement of cycle 1
- A2 : Achievement of cycle 2

Since 48 students or 82.76% of the students passed the minimum passing criterion (KKM) on the second cycle. this classroom action research in the use of digital stories as instructional media to improve students' recount writing ability of tenth grade students of SMA Al Falah Ketintang Surabaya in the academic year of 2015/2016 has been successful. For that reason, the researcher made a decision to stop the research.

Both the first and second cycles are closed by the distribution of questionnaire sheets to be filled and answered by the students. The purpose of the questionnaire is to investigate the effectiveness of the use of digital story to improve students' recount text writing ability.

Table 4.1  
Students responses in the questionnaire about the effect of digital story in both cycles

No.	Indicator	Cycle 1	Cycle 2
1.	The digital story enriches student's vocabulary.	70.11	78.74
2.	The digital story improves student's grammatical knowledge	81.61	86.21
3.	The digital story's level is appropriate for student's level	67.82	62.07
4.	The digital story stimulates student's activity and enthusiasm	70.11	52.87
5.	The digital story develop student's understanding of the recount's social purpose	80.46	73.56
6.	The digital story develop student's understanding of the recount's structure	67.82	68.97
7.	The digital story develop student's understanding of the recount's lexica grammatical feature	68.97	72.99
8.	Digital stories positively affected the students recount text writing ability	64.37	65.52
	MEAN (X)	71.41	70.12

Based on the students' response to the questionnaire, the researcher concluded that in the first cycle, the students were excited and paid attention to the digital story more than in the second cycle. The mean of the effectiveness of the first cycle was 71.41, and then in the second cycle the mean slightly decreased become 70.12. It showed that, the students linguistic and genre knowledge are positively affected by the use of digital stories as instructional media to teach recount text writing, but as the other media, if it is used continuously it can make the students bored and decrease their enthusiasm.

## 5. Conclusion

After conducting the whole steps of this Classroom Action Research and having analyzed all the data, the researcher draws several conclusions which were obtained as the output of this classroom action. It is important to be remembered that in the use of digital stories to improve students' recount writing ability it is necessary for the teacher to optimize teaching and learning process through three essential ways. First is using instructional media which difficulty level suits the students' need and ability. The second is choosing interesting and brandly new topic of digital story in every cycle in order to make students attracted and engaged in the learning of recount writing activities. The third way is motivating the passive students to be more active during the lesson also to be brave to express their ideas or to ask about their problems while they are assigned to write about their own experience.

The students' comprehension toward the generic structure of recount text has helped by personal digital stories. However, the implementation of digital stories usage needs careful preparation, selections, guidance and feedback from the teacher. This audio visual media does not only give good effect on the students' achievement but also their attitude including their motivation in learning. There is no student who is left out not to tell his/her experience. This strategy also supports the Character Building that students learn how to pay attention and respect other's experiences.

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# Peer Response in an Indonesian EFL Writing Class: A Case Study

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## ABSTRACT

This article explores peer response in an Indonesian EFL writing class. It reports on the findings of a study conducted at the State Islamic Institute of Palangka Raya in Central Kalimantan Indonesia to investigate: (a) what areas of peer response were focused on; (b) why the points of peer response were incorporated or not incorporated into revisions; (c) the suitability between peer response and writer expectation; and (d) what aspects of writing were improved with peer response. Research methodology included examining and analyzing drafts of peer response activities (the first and revised versions of student writing) of each session, questionnaire result, and interview transcription from peer response sessions. Results show that the areas of peer response gained from each session of peer response activities were focused much on the idea development, grammar, and mechanic. The points of peer response were incorporated into revisions because of its advantages to the developments of an essay in terms of grammar, essay structure and coherence, and were not incorporated into revisions because of irrelevant feedbacks. The suitable area between peer response and writer expectation was in terms of grammar accuracy. During peer response activities students engaged in the improvement of their writing ability, and the most improvements of the writing aspects were content and grammar.

**Key Words:** *peer response, written feedback, EFL writing class, writing ability, expository essay.*

## 1. Introduction

Various issues concerning peer response in the teaching of writing of first and second or foreign language settings have been examined. The studies attempted to develop a structured method of using peer response group in teaching writing (Bell, 1991), to investigate the value of peer response in writing class (Mangelsdorf, 1992; Tang & Tithecott, 1999), to examine the impact of peer response on EFL Writing (Wakabayashi, 2008; Al-Jamal, 2009; Farrah, 2012; Jahin, 2012), to investigate how much peer feedback was incorporated into revision, its quality, and its types (Ting & Qian, 2010), and to examine the actual focus of peer review and the types of corrective feedback provided in L2 composing process (Salih, 2013). However, few studies have been conducted in the Indonesian context. As Widiati's (2003) study showed that trained peer response succeeded in the changes of students' attitude into positive one, and improved their writing ability. In addition, Mubarak (2009) did a research applying peer feedback; the result showed that ability of the students in writing narrative text could improve.

The various findings showed that some of these give enthusiastic claims and positive findings of peer response, but some others do not. Conflicting findings have been reported on its effectiveness and helpfulness. A study conducted by Nelson & Murphy (1993), for example, found that L2 students tend to have a distrust of their peers' response since they consider their peers no more knowledgeable than themselves in providing sensible feedback and thus do not incorporate peer feedback into their writing. Also, Nelson & Carson (1998) carried out a research revealed that students incorporated teacher feedback in their revisions much more frequently than peer feedback. Some student writers were even reported to be unsure of their own power as competent readers while reading others' writings (Lockhart & Ng in Ting & Qian, 2010:88). Additionally, Ting & Qian (2010) reported that though peer response could lead improvement of students' writing with respect to accuracy, but no significant differences were found with respect to grammatical and lexical complexity.

On the other hand, studies reported that peer response gives a great impact on EFL writing such as peer reviews had helped writers revise the content of their drafts, but sometimes it was not

able to give useful advice (Mangelsdorf, 1992), peer feedback could solve problems focusing more on content level problems than on surface level problems (Wakabayashi, 2008), peer response technique affected the participants' attitude positively in a way that enhanced the development of students' writing skill (Al-Jamal, 2009) and writing apprehension (Jahin, 2012), and peer feedback offered students an opportunity for social interaction and improved their writing skills, critical thinking, confidence, creativity, motivation, and assignments (Farrah, 2012). Of these findings, peer response in the writing classroom still presents problems to solve. Despite peer response yields profits and drawbacks as alternately reported by researchers, the practice of peer response has been widely applied in writing class. Moreover, the studies on peer response need further exploration and that more studies are still needed.

Studies on peer response have shed insights on several aspects of peer response. As a case study conducted by Ting & Qian (2010), the aspects cover how much peer feedback, what kinds of revisions, and whether the revisions can lead to writing improvements in terms of accuracy, fluency, grammatical complexity, and vocabulary complexity. Moreover, a research by Salih (2013), the different aspects include the actual focus of peer review and the types of corrective feedback provided. Of the prior research, it still rises to issues on peer response to solve. Therefore, it needs similar studies in different contexts to contribute to understanding of the issue of peer response in the process and pedagogy of writing.

At the English Department of State Islamic Institute of Palangka Raya in Central Kalimantan Indonesia where English is taught as EFL, the process approach to teaching writing has been put into practice quite recently by the writing lectures. It shows that peer response activities in which peer feedback given to the classmates' writings before the lecturer feedback showed symptoms categorized as problem indications of the implementation of peer response in writing class. Some students had desire to give feedback on their classmates' writings while some others did not. The students as the reviewers giving feedback seemed that they had more writing ability than those gave no feedback. Moreover, the reviewers' feedbacks were out of focus. Though they were equipped with peer editing sheet, the reviewers' response points given to peers' writings were unclear. In addition, few of student writers had revised their drafts even though their peers as reviewers put up response. As a result, their ability in writing paragraph or essay was not maximally improved. It appears here that the pattern of peer response in writing class is very interesting to research.

However, despite the development body of research on peer response and its positive impacts in ESL/EFL writing setting, more research is needed on the patterns of peer response to student writing in Indonesian EFL context, more specifically at State Islamic Institute of Palangka Raya in Central Kalimantan Indonesia. Thus, it is very much necessary to research peer response in the process of writing. The study then addresses the following questions: (a) What areas of peer response are focused on? (b) Are the points of peer response incorporated into revisions? Why are the points of peer response incorporated or not incorporated into revisions? (c) Is there any writer expectation to peer response? If so, does peer response suit their expectation?, and (d) Do the revisions lead to improvement of their writing skill? If so, what aspects of writing are improved?

## **2. Literature Review**

### **2.1 Peer Response**

Peer response sometimes referred to as 'peer review', 'peer editing', or 'peer feedback' can be defined as the use of learners as sources of information, and interaction for each other in such a way that learners assume roles and responsibilities normally taken on by a formally trained teacher, tutor, or editor in commenting on and critiquing each other's drafts in both written and oral formats in the process of writing (Liu & Hansen, 2002:1). It has been claimed that peer readers can provide useful feedback (Rollinson in Ting & Qian, 2010), and by reading others' writing as critical readers, students could become more critical readers and revisers of their own writing (Rollinson, 2005). In this way writers can revise effectively on the basis of peer response, and peer response might be



seen as complementary to teacher feedback. It can help student writers focus on writing as a process and on revision, and has become a common feature in EFL classrooms where the process approach to teaching writing is used. For this to happen, however, the writing class has to be set up properly with the prior plan of grouping–peer group response and its procedure.

## 2.2 Steps to Implementing Peer Response in EFL Writing Class

The process steps of applying peer response group in the study should follow the stages of the writing process–prewriting, drafting, revising, and editing (Smalley *et al.*, 2001:3). It only focuses on the revising (Liu & Hansen, 2002) and editing stages (Stone, 1990) in which peer response group is applied after conducting prewriting and drafting activities. The process steps began with assigning the students to do writing task through the writing process. It was initiated with prewriting activities followed by outlining, and then writing their first drafts inside or outside of class. They were required to bring their drafts to the next class for peer response. The procedure of implementing peer response in the writing class is adapted from Tang & Tithecott (1999:24-25) as shown in Table 2.1.

**Table 2.1 The Procedures of Peer Response Activities**

No	Steps
1	Teacher groups students in a group of 3 or 4.
2	Teacher divides the time equally for peer response activity to each group member.
3	Writer (student writer) tells group members how they may best help him/her give response to his/her draft.
4	Writer reads his/her draft aloud while peers (group members) listen attentively without interruption.
5	On the first reading, peers do not make any comments or take notes. They just listen and try to understand what the writer is saying.
6	After the first reading is completed, teacher shares peer response sheet adapted from Smalley <i>et al.</i> (2001:383).
7	Writer reads the draft again, fairly slowly.
8	On the second reading, peers take few minutes to write one or two sentences on the space in peer response sheet starting their general impression of the essay's strong and confusing points.
9	After the second reading is completed, peers take turns giving response (feedback/comments) by answering questions in peer response sheet. The draft is handed in for the peers' review.
10	Peers discuss their responses with the writer.
11	Peers submit their response to the writer.
12	Repeat this process of item number 3 till 11 for each member of the group.
13	Writer revises his/her draft based on the peers' feedback as home assignment (submitted in the following meeting)

## 3. Research Methodology

### 3.1 Research Design

The research design applied in this study was a case study categorized as qualitative research. Qualitative research refers to 'research based on descriptive data that does not make (regular) use of statistical procedures' (Mackey & Gass, 2005:162), and 'research termed the constructivist approach or naturalistic' (Creswell, 1994:4). Meanwhile, a case study centered on 'an in-depth description of a single unit which can be an individual, a group, a site, a class, a policy, a program, a process, an institution, or a community' (Ary *et al.*, 2010:454). Within this framework, the current study fitted with those characteristics. It investigated peer response in the writing class by describing the patterns of peer response in the process of writing particularly in the revision and editing stages. Moreover, the study explored peer response applied by a group of students in particular class–Writing class–as a natural situation in which interesting topics were investigated deeply.

### 3.2 Setting and Subjects of the Study

This study was conducted in a course entitled “Writing III”. The course met once a week for 16 weeks with each class lasting 150 minutes. The objective of the course was to help students fully develop their abilities in writing various types of essay in English as proposed in the course syllabus. In the class, there were 18 students, who were randomly divided into 6 groups, 3 in each group. To probe into the students’ revision process, the researcher randomly chose four groups (totaling 12 students) from the six original groups as participants in this study.

### 3.3 Data Sources

The study utilized three sources of data: drafts of student writing in peer response activities (first and revised versions) of each session, questionnaire result, and interview transcription from peer response sessions.

### 3.4 Research Instruments

The instrument in this context was the researcher himself who was considered as the key instrument. As said by Bogdan & Biklen (1998:4), the researcher himself who was present in the setting of the study was considered as the key instrument which was called as Human Instrument. In this study the researcher equipped himself with some research instruments consisting of observation checklist, questionnaire, interview, and documentation (Creswell, 1994:149).

### 3.5 Data Collection Procedure

The procedures for data collection were as follows. First, the participants were trained on peer response activities (the procedures of peer response are shown in Table 2.1) before they were asked to write in each session an essay on a different topic of their own interest in the expository text. The rationale behind selecting expository writing was that it was a rhetorical mode the students who were familiar with as it was often used in academic writing, and was to provide topics of interest for the students.

After training on peer response activities, the teacher-researcher assigned the students to do writing task conducted through the writing process. It was initiated with prewriting activities followed by outlining, and then writing their first drafts inside or outside of class. They were required to bring their drafts to the next class for peer response as prior training, after which they were given a week to revise their first drafts based on their peers’ feedback. When the revised versions were finished, they were handed in the teacher. The participants’ first drafts containing their peers’ written feedback and the peer response sheet containing peers’ response, comments, and suggestions, and their revised versions were collected for analysis.

When peer response activities were conducted in the classroom, the students were observed during interaction for the peer response sessions. It was conducted in four sessions of peer response activities as shown in the research schedule in Table 3.1. Then the questionnaire was distributed to the participants after they had completed the peer response sessions. Finally, the researcher held interview with the participants at the end of peer response sessions.

**Table 3.1 Research Schedule**

Weeks	Sessions of Peer Response	Types of Essay Writing	Topics
The 7 <sup>th</sup> week	I	Argumentative	<i>Provided topic</i> (it is provided by the teacher)
The 10 <sup>th</sup> week	II	Process	<i>Free topic</i> (it is based on students’ interest)
The 14 <sup>th</sup> week	III	Comparison and Contrast	<i>Free topic</i> (it is based on students’ interest)
The 16 <sup>th</sup> week	IV	Example	<i>Free topic</i> (it is based on students’ interest)

### 3.6 Data Analysis Procedure

After collecting the data, the researcher then analyzed the data. The procedures for data analysis are through three steps of activity: data reduction, data display, and conclusion drawing/verifying (Miles & Huberman, 1994:10).

## 4. Results and Discussion

### 4.1 The Focused Areas of Peer Response

The analysis of the drafts of peer response revealed that the areas of peer response gained from each session of peer response activities focused on the students' error detection focusing much on grammatical aspects such as verb tense, subject-verb agreement, etc., mechanic, and the essay structure such as introductory paragraph, body paragraph, concluding paragraph, and coherence as shown in Table 4.1.

Also, the observation result showed that when implementing peer group response the discussion between the writer and reviewer almost focused on the grammar aspect areas such as tenses, vocabulary, verbs, etc. In fact, verb tenses, subject-verb agreement, word order, mechanic, singular or plural form, spelling, and paragraph coherence were among the aspects that posed difficult for the students.

Additionally, the most aspect to be reviewed in peer response activities revealed in the students' responses to both the questionnaire (Table 4.3) and interview is about peer response in the area of grammar, as stated by ZA, "Yes, because grammar is the important thing in writing." Besides, an analysis of the interview transcription about the gains of participating in peer response revealed that the students preference for grammar correction and other grammatical aspects such as vocabulary as mentioned by MS, "Yes, because actually when my friend writes, there is some vocabulary not appropriate with the context. So, I repair it."

**Table 4.1 The Focused Areas of Peer Response Activities**

No	Focus	Session I	Session II	Session III	Session IV	Total Points
		Points	Points	Points	Points	
1	Introductory paragraph	12	6	11	6	35
2	Body paragraph	8	7	9	5	29
3	Concluding paragraph	6	1	5	2	14
4	Coherence	11	12	20	7	50
5	Unity	2	1	6	0	9
6	Verb tenses	22	21	9	7	59
7	Subject-verb agreement	24	10	18	8	60
8	Prepositions	5	5	0	7	17
9	Sentence structure	2	1	2	5	10
10	Vocabulary	8	6	1	2	17
11	Word order	7	7	10	10	34
12	Mechanic	18	8	16	18	60
13	Clause	7	4	2	3	16
14	Object of preposition	6	7	6	0	19
15	Modality	9	1	0	0	10
16	Verb phrase	4	3	0	0	7
17	Singular or plural form	3	10	9	6	28
18	Spelling	5	3	8	6	22
19	Article	2	1	2	2	7
20	Diction	1	3	0	0	4
21	Parallel structure	1	0	0	0	1

The findings suggest the idea that the students have felt grammar and essay structure were their major areas of difficulty in writing essay and the most important aspects of revision as well. As stated by Salih (2013:45), much of the attention of writer was given to grammar correctness. Also, as stated by Oshima & Hogue (2007:147), to have good essay student writers should master the concept of essay structure. Therefore, EFL students need to have a wider perception on language use in writing essay, to understand that grammar as an element in the text creation process, and to understand the concept of essay organization.

## 4.2 The Incorporation of Peer Response into Revisions

### 4.2.1 The Points of Peer Response Incorporated or not Incorporated into Revisions

The analysis of the revised version of the students' product in peer response activities showed that generally the students revised their drafts based on the peer response, so the points of peer response incorporated into revision in each session of peer response focused on grammatical aspect corrections and essay structure. As shown in Table 4.2, the points of peer response incorporated into revision were mostly in grammatical aspects and essay structure. In addition, few points of peer response were not incorporated into revision in each session of peer response. Most of the student writers had very much attention to the feedback from the peer response activities. A few points of peer response not incorporated into revision were in the aspects of mechanic, introductory paragraph, coherence, and clause. The students still got problems with these aspects.

**Table 4.2 The Points of Peer Response Incorporated or not Incorporated into Revisions**

No	Focus	Session I		Session II		Session III		Session IV		Total of Incorporation Points	
		Incorporation Points		Incorporation Points		Incorporation Points		Incorporation Points		Yes	No
		Yes	No	Yes	No	Yes	No	Yes	No		
1	Introductory paragraph	10	2	5	1	9	2	5	1	29	6
2	Body paragraph	7	1	6	1	7	2	5	0	25	4
3	Concluding paragraph	5	1	1	0	4	1	2	0	12	2
4	Coherence	8	3	10	2	18	2	6	1	42	8
5	Unity	2	0	1	0	5	1	0	0	8	1
6	Verb tenses	20	2	20	1	9	0	7	0	56	3
7	Subject-verb agreement	21	3	10	0	17	1	8	0	56	4
8	Prepositions	4	1	5	0	0	0	5	2	14	3
9	Sentence structure	2	0	1	0	2	0	4	1	9	1
10	Vocabulary	6	2	4	2	1	0	2	0	13	4
11	Word order	6	1	7	0	8	2	9	1	30	4
12	Mechanic	16	2	7	1	14	2	15	3	52	8
13	Clause	4	3	2	2	1	1	2	1	9	7
14	Object of preposition	5	1	6	1	6	0	0	0	17	2
15	Modality	7	2	1	0	0	0	0	0	8	2
16	Verb phrase	4	0	2	1	0	0	0	0	6	1
17	Singular or plural form	3	0	8	2	8	1	6	0	25	3
18	Spelling	4	1	3	0	8	0	5	1	20	2
19	Article	2	0	1	0	2	0	2	0	7	0
20	Diction	0	1	2	1	0	0	0	0	2	2
21	Parallel structure	1	0	0	0	0	0	0	0	1	0

### 4.2.2 Why the Points of Peer Response are Incorporated or not Incorporated into Revisions

The analysis of interview revealed that points of peer response were incorporated into revision because it helped them write better in English and gave advantages in terms of grammar and essay structure. As said by ZA, *“Yes, I revise my essay in terms of grammar, structure, tenses, transitional words, because my friend helps me write better to improve my skill in writing.”* Other students said that the points of peer response were incorporated into revision because they respected feedback from her friend. As said by MS, *“Yes, I revise the grammatical pattern, vocabulary, and sentence structure. Because I respect it, it is my friend’s suggestion.”*

Meanwhile, the points of peer response were not incorporated into revision because it is not relevant with the students' writing. As said by MS, *“No, not all. Some of the suggestions of my friends are not used in my writing because they are not relevant with my writing. For example, my friend underlines the sentence of my writing, but my sentence is true. I think that my friends still*

*don't understand the sentence."*

### 4.3 The Suitability between Peer Response and Writer Expectation

The analysis of the questionnaire showed interesting findings of suitability between peer response and writer expectation. The findings pertain to students' or reviewers' response focus and students' or writers' expectation of peer responses to drafts. The results were shown and discussed under the following categories.

#### 4.3.1 Tasks Performed by Reviewers

Table 4.3 delivers the respondents' score on tasks reviewers had to do in the peer response activities. It shows that in responding to item (1), the result reveals that all of the reviewers clarified about their ideas and meanings of their essay to the writers. In item (2), it is indicated that most of the reviewers evaluated by mainly focusing on grammar accuracy correction. Then analysis of item (3) says that the reviewers mostly commented on their peers' ideas and meanings and extend them as well. In exploring the clarity of their response to peers' writing and ideas (item 4), majority of the reviewers provided a set of clear correction by giving review symbols to peer's drafts. This result suggests that the students have developed positive attitude on peer response activities. Next, the reviewers evaluated peers' vocabulary use and suggested the corrections (item 5), and evaluated their peers' essay structure (item 6). Finally, the analysis of item (7) shows that they focused on correction of mechanical errors in the peer response activity. This finding provides evidence of the tendency of the focus when they are reviewing peer drafts in peer response activities.

**Table 4.3 Reviewer Questionnaire Frequency Count and Percentage Equivalent**

No	Tasks Performed by Reviewers	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1	Ask about peers' ideas and meanings of an essay	3 (25%)	9 (75%)			
2	Focus on grammar accuracy	6 (50%)	5 (42%)	1 (8%)		
3	Comment on peers' ideas and meanings, and extend them	2 (17%)	9 (75%)	1 (8%)		
4	Provide a set of clear correction by giving symbols	5 (42%)	5 (42%)	2 (17%)		
5	Evaluate peers' vocabulary use and suggest corrections	3 (25%)	7 (58%)	2 (17%)		
6	Evaluate peers' essay structure	4 (33%)	6 (50%)	2 (17%)		
7	Correct mechanical errors	4 (33%)	7 (58%)	1 (8%)		

#### 4.3.2 Writer Expectation to Peer Response

Table 4.4 presents the respondents' score on the writer expectation to peer response on essay drafts. The analysis of the questionnaire has also focused on specific areas expected by the student writers to be evaluated by reviewers (items 8-14).

In terms of clarification of ideas and meanings (item 8), the result reveals more evidence of the tendency of the student writers to have their ideas of an essay evaluated by peers. For grammatical correctness (item 9), the result reveals that many of the respondents expressed their need for more response on grammar correction. For expectancy of idea development (item 10), it shows that ideas expansion and how to develop an essay are important aspect to be shared with peers. Meanwhile, in terms of provision of clear correction and review symbols (item 11), the finding indicates the importance of feedback clarity. This is very important in a sense that clear correction clues are deemed to facilitate revision and peer response incorporation. On the other hand, when peer response is provided in an ambiguous manner, the required points of peer response incorporation might not be fulfilled (Ferris & Rollinson in Salih, 2013:47).

**Table 4.4 Questionnaire Frequency Count of Writer Expectation to Peer Response and Percentage Equivalent**

No	Tasks Expected by Writers	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
8	Ask writer about ideas and meanings of an essay	2 (17%)	9 (75%)	1 (8%)		
9	Correct the grammatical errors	3 (25%)	8 (67%)	1 (8%)		
10	Comment on ideas and meanings, and extend them	6 (50%)	6 (50%)			
11	Provide a set of clear correction by giving symbols	4 (33%)	8 (67%)			
12	Evaluate vocabulary and make corrections	5 (42%)	6 (50%)	1 (8%)		
13	Evaluate the way to organize ideas	2 (17%)	9 (75%)	1 (8%)		
14	Correct mechanical errors	4 (33%)	8 (67%)			

In addition, when exploring the expectancy of the vocabulary use (item 12), the result indicates the student writers' willingness to share ideas with peers about the use of vocabulary. In terms of the way to organize ideas (item 13), the respondent stressed the importance of knowing how to organize ideas and develop a structured essay. In fact, idea development was ranked first in respondents' preference for receiving response from peers (Table 4.6). Finally, the study also investigated (item 14) the student writers' expectation of peer response on the mechanical features. This is also important for polishing essay drafts as asserted by Oshima & Hogue (2007:18), the emphasis on mechanical correction is one of the aims to polish the drafts of writing.

**4.3.3 Writer Response to Peer Response**

Table 4.5 indicates the respondents' score on the writer response to peer response on essay drafts. The analysis of the questionnaire has also focused on specific areas of writer response to peer response: rereading the ideas and meanings of an essay, correcting grammatical errors, paying attention to a set of clear correction and review symbols, checking and revising vocabulary use, reorganizing essay structure, and correcting mechanical errors (items 15-20).

Item (15) was designed to look into the student writers' response to peer response on ideas and meaning. The result indicates evidence of the tendency of the student writers to revise their ideas of an essay evaluated by peers. Moreover, in responding to item (16) about the grammar, most students paid great attention to grammar correction. The result reveals that the respondents' tendency to place grammar an important aspect in their essays. Meanwhile, responding to item (17) about attention to correction symbols, all students give great care. The finding indicates the importance of response clarity.

**Table 4.5 Questionnaire Frequency Count of Writer Response to Peer Response and Percentage Equivalent**

No	Tasks Responded by Writers	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
15	Reread ideas and meanings of an essay	3 (25%)	6 (50%)	3 (25%)		
16	Correct the grammatical errors	4 (33%)	7 (58%)	1 (8%)		
17	Pay attention to a set of clear correction by revising	4 (33%)	8 (67%)			
18	Check vocabulary use and revise	2 (17%)	9 (75%)	1 (8%)		
19	Reorganize the ideas of an essay	3 (25%)	7 (58%)	2 (17%)		
20	Correct mechanical errors	4 (33%)	8 (67%)			

Additionally, item (18) was designed to explore student writers' response to peer response on vocabulary use. The result really indicates the student writers' attention to the peers' evaluation about the use of vocabulary. In responding to item (19), the finding tells that the writer gave attention to reorganizing the idea after feedback given. Finally, it was investigated item (20), the student writers' response to peer response on the mechanical features. The result shows that the writers pay attention to correct their mechanical errors such as spelling, punctuation, etc.

#### 4.3.4 Reviewer Focus and Writer Expectation of Peer Response

Table 4.6 presents reviewer focus and writer expectation of peer response. By combining the respondents' frequency in both "strongly agree" and "agree" in the questionnaire items (1-7) for reviewer focus and items (8-14) for writer expectation, the data were tabulated to show the rating of peer response patterns based on reviewer focus and writer expectation.

**Table 4.6 Score and Percentages Rating of Reviewer Focus and Writer Expectation of Peer Response**

No	Points	Reviewer		Writer	
		Strongly Agree and Agree	Rank	Strongly Agree and Agree	Rank
1	Respond to ideas and meanings of an essay	12 (100%)	1	11 (92%)	2
2	Focus on the grammatical errors	11 (92%)	2	11 (92%)	2
3	Advise idea development	11 (92%)	2	12 (100%)	1
4	Clear correction by giving symbols	10 (83%)	3	12 (100%)	1
5	Respond to vocabulary use	10 (83%)	3	11 (92%)	2
6	Evaluate essay organization	10 (83%)	3	11 (92%)	2
7	Correct mechanical errors	11 (92%)	2	12 (100%)	1

The table shows that the reviewers have selected responding to ideas and meanings of an essay as prime area of focus while the same areas were ranked second by student writers. The prime area of reviewer focus and as the second priority of the writer to responding ideas and meanings justify the instances negotiations of essay writing the researcher observed during the peer response sessions. This findings indicate that how the idea and meanings of a writing should be an important aspect in writing. On the other hand, students writers have selected advice of idea development, peer response clarity, and mechanic correction as the most important aspects expected to be evaluated by peers; giving them in the first rank in rating. The same areas were ranked second and third by response providers.

This result is interesting because it serves the study's question of whether there is writer expectation to peer response and whether peer response suits student writers' expectation. In fact, there is no perfect suitability of student writer expectation and response provided by peers as shown by the table. Although there is no perfectness of suitability of peer response and writer expectation, in an area they matched each other in terms of focusing on grammar accuracy. Additionally, rating grammar second between the areas of peer response and writer expectation is deemed realistic in a sense that L2 learners always perceive grammar as the most difficult area in the target language (Salih, 2013:47). As research in L2 reported grammar to be a difficult area for L2 learners (Sinyor in Salih, 2013:47). The L2 students of writing tend to be far for the conference in peer response activity and far for the collaborative writing in the writing class.

The table also tells that out of the grammar accuracy there were areas the reviewer focus on peer response such as focus on the idea development, and mechanical features were

in the second ranks. Meanwhile, in the same areas were ranked first by the student writers. This rating also showed that feedback for idea development and mechanical features becomes the respondents' expectation in peer response activities.

#### 4.4 Writing Ability Improvement and Aspects of Writing Improved

##### 4.4.1 Improvement of Students' Writing Ability

The scores gained by two raters were analyzed in terms of writing aspects—content (C), organization (O), grammar (G), and vocabulary (V). Based on the analysis, the findings show that the student' writing ability slightly improved. It was found that in writing expository essay the student writers achieved the mean score 56.00 in session I, 62.17 in session II, 71.08 in session III, and 80.50 in session IV (Table 4.7). From these findings, it means that the students' writing skill in writing expository essay in session I to session IV improved. It was shown from the students' achievement in producing essay indicated with the mean score of each peer response session.

In addition, the findings of the improvement of students' writing ability give evidence that the process of revisions using peer response activities led to the improvement of the student writers' writing ability. This improvement might be as result of their activities in producing essay through the process of writing supported by the technique of peer response in the stages of revising and editing. It is as stated by Stone (1990) and Liu & Hansen (2002), peer response is really applicable in the writing process particularly in the revising and editing stages.

**Table 4.7 Score of the Students' Writing Products**

Session	Writing Aspects	Students											
		AR	GR	TA	SN	MS	YU	TK	ZA	SF	ER	HAS	YUW
I	C	17	17	17	11	17	17	11	11	17	11	11	17
	O	17	17	17	11	17	17	11	11	17	11	17	17
	G	11	11	11	11	11	11	17	11	11	11	11	17
	V	17	17	11	11	17	17	11	11	17	11	17	17
	<b>Total Score</b>	<b>62</b>	<b>62</b>	<b>56</b>	<b>44</b>	<b>62</b>	<b>62</b>	<b>50</b>	<b>44</b>	<b>62</b>	<b>44</b>	<b>56</b>	<b>68</b>
	<b>Mean</b>	<b>56.00</b>											
II	C	17	17	17	11	17	17	11	11	17	11	17	22
	O	17	17	17	11	22	17	11	11	22	11	17	17
	G	11	11	17	11	22	11	11	17	17	11	17	17
	V	17	17	17	17	17	17	17	17	17	11	17	17
	<b>Total Score</b>	<b>62</b>	<b>62</b>	<b>68</b>	<b>50</b>	<b>78</b>	<b>62</b>	<b>50</b>	<b>56</b>	<b>73</b>	<b>44</b>	<b>68</b>	<b>73</b>
	<b>Mean</b>	<b>62.17</b>											
III	C	17	17	17	17	22	17	17	17	17	22	22	22
	O	17	17	17	17	22	17	11	17	22	17	22	22
	G	17	11	17	11	22	17	17	17	22	17	22	22
	V	17	17	17	17	17	17	17	17	17	17	17	17
	<b>Total Score</b>	<b>68</b>	<b>62</b>	<b>68</b>	<b>62</b>	<b>83</b>	<b>68</b>	<b>62</b>	<b>68</b>	<b>78</b>	<b>68</b>	<b>83</b>	<b>83</b>
	<b>Mean</b>	<b>71.08</b>											
IV	C	22	22	22	17	22	22	22	17	22	22	22	22
	O	22	22	22	17	22	17	17	17	22	22	22	22
	G	17	17	22	17	22	17	17	17	22	22	22	22
	V	17	22	22	17	22	17	22	17	22	17	17	22
	<b>Total Score</b>	<b>78</b>	<b>83</b>	<b>88</b>	<b>68</b>	<b>88</b>	<b>73</b>	<b>78</b>	<b>68</b>	<b>88</b>	<b>83</b>	<b>83</b>	<b>88</b>
	<b>Mean</b>	<b>80.50</b>											



#### 4.4.2 Aspects of Writing Improved with Peer Response

The analysis of the improvement of each aspect of writing is shown in Table 4.8. It shows that most of the components of writing improved. It was indicated with the mean score of each component. The component of content was well improved from the mean score 14.50 in the first session to 21.17 in the last session. The percentage of improvement was about 55.56%. The component of organization was improved from the mean score 15.00 in the first session to 20.33 in the last session or about 44.44% of improvement. Meanwhile, the aspect of grammar was slightly improved from the mean score 12.00 in the first session to 19.50 in the fourth session or 62.50% of improvement. However, the aspect of vocabulary was little improved. It was from the mean score 14.50 in the first session to 19.50 in the last session. The percentage improvement was about 41.67%. This result serves evidence of the study’s question of what aspects of writing improved. In fact, the most aspect of writing highly improved was the aspect of grammar.

From these findings, it shows that the aspects of writing improved in all areas. However, they slightly improved in the aspects of content and grammar. It is in line with the peer response areas of the student writer focus. The areas are in ideas and meaning development and grammar accuracy.

**Table 4.8 The Improvement of Writing Aspects of Students’ Writing Products**

Writing Aspects	Session	Students												Mean Score	Improvement of Session I to IV
		AR	GR	TA	SN	MS	YU	TK	ZA	SF	ER	HA S	YU W		
Content	I	17	17	17	11	17	17	11	11	17	11	11	17	14.50	55.56%
	II	17	17	17	11	17	17	11	11	17	11	17	22	15.42	
	III	17	17	17	17	22	17	17	17	17	17	22	22	18.25	
	IV	22	22	22	17	22	22	22	17	22	22	22	22	21.17	
Organization	I	17	17	17	11	17	17	11	11	17	11	17	17	15.00	44.44%
	II	17	17	17	11	22	17	11	11	22	11	17	17	15.83	
	III	17	17	17	17	22	17	11	17	22	17	22	22	18.17	
	IV	22	22	22	17	22	17	17	17	22	22	22	22	20.33	
Grammar	I	11	11	11	11	11	11	17	11	11	11	11	11	12.00	62.50%
	II	11	11	17	11	22	11	17	17	17	11	17	17	14.92	
	III	17	11	17	11	22	17	17	17	22	17	22	22	17.67	
	IV	17	17	22	17	22	17	17	17	22	22	22	22	19.50	
Vocabulary	I	17	17	11	11	17	17	11	11	17	11	17	17	14.50	41.67%
	II	17	17	17	17	17	17	11	17	17	11	17	17	16.00	
	III	17	17	17	17	17	17	17	17	17	17	17	17	17.00	
	IV	17	22	22	17	22	17	22	17	22	17	17	22	19.50	

### 5. Conclusion

It was found that the patterns of peer response to the peers’ works for revision were very interesting. The areas of peer response gained from each session of peer response activities focused much on the idea development, grammar, and mechanic. The points of peer response were incorporated into revisions because of its advantages to the developments of an essay in terms of grammar, essay structure and coherence, and were not incorporated into revisions because of irrelevant feedbacks. The suitable area between peer response and writer expectation was in terms of grammar accuracy. During peer response activities students engaged in the improvement of their writing ability, and the most improvements of the writing aspects were content and grammar.

Future research should examine other various patterns of peer response in writing class. Exploring various patterns of implementing peer response and teacher feedback is such kind of a topic to be investigated. Furthermore, applying media focusing on the use of ICT-based media in writing class seems to be interesting and more challenging to research.

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# ***PROSOCIAL, AND RISK-TAKING LEVEL ON TEACHING INTENTIONS IN REMOTE AREAS***

## **(A Study on Students of Elementary School Teacher in East Java)**

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### **ABSTRACT**

Almost all country in Asean Community is agrarian countries that has wide area. But, not all area has been have educational properly. This phenomena it can be a problem or challenges in Asean Community. One of the problem is, not all area have properly teacher to support the education activity. Many factors being the problems of distribution teacher in remote areas, such as human resources did not have a qualification, the system not work effectively, or the teacher did not want to go and teach in remote area. This research, find correlation prosocial and risk taking factor being effect to teaching intentions in remote areas. The study using systematic random sampling involved students in the last semester of elementary school teacher in East Java as sample. Because, after undergraduate student of elementary school teacher, will be focus to be a teacher. In this research, using three instrument to measure the variable, the prosocial personality battery (PSB), domain-specific risk taking (DOSPRT) scale and teaching intentions scale. By using SPSS software, linier regression analysis was used to analyze the research hypotheses. The result of this research shows that all independent variables did bring impact to dependent variable.

**Key Words** : *Prosocial, Risk Taking, Teaching Intentions.*

### **INTRODUCTION**

Education is very important aspect to developing generation for a nation. Advancement of the education system also shows whether a country forward. The education system supported by many factors, those are facilitation as hardware system, school management as software system, and teacher as brainware system (Hartawan, 2010). Support of the factors is very important to make education system be successfull. In fact, the factors are not perfectly completed.

Almost all country in Asean Community is agrarian countries that has wide area. But, not all area has been have educational properly. This phenomena it can be a problem or challenges in Asean Community. One of the problem is, not all area have properly teacher to support the education activity. Especially in Indonesia, cumulation of quantity teacher only in the city. Sumadi, chief of Indonesia teacher associaton in East Java (PGRI Jatim) said many regency, specially remote area lack of teacher, because many teacher only centralized in city (Kompas,23/11). In fact, Indonesia have problem in distribution teacher all of area. Many factors being the problems of distribution teacher in remote areas, such as human resources did not have a qualification, the system not work effectively, or the teacher did not want to go and teach in remote area.

Background of this research, because many teacher reject to teach in remote area. Apart from a variety reasons teacher work in remote area, researcher try to fing correlation of prosocial and risk taking factor, of student of elementary school teacher being effect to teaching intentions in remote areas. Problem statement of this research is how is correlation of prosocial and risk taking factor being effect to teaching intentions in remote areas, on student of elementary school in East Java? This study has purpose to know correlation of prosocial and risk taking factor on student of elementary school in East Java, being effect to teaching intentions in remote areas. The usefulness of this research is a preliminary study to conduct further research to determine what interventions are appropriate, judging from the level of prosocial, to improve the distribution of elementary school teachers in remote areas of Indonesia and of the underlying government policies on related matters.

## **Prosocial**

Many factors responsible for ( Many factors have responsibility toward ) prosocial actions, this topic have a long history in terms of personality and social psychology. Penner, et al (1995) explained, one of the earliest large-scale personality research projects in the United States was Hartshorne and May's Studies in the Nature of Character, published in 1928 (followed by volumes in 1929 and 1930). Hartshorne and May sought to determine whether children's propensities to engage in prosocial behaviors (i.e., helpfulness, honesty and self-control) were due to enduring personal characteristics or were the result of specific situational constraints and demands. Hartshorne and May reported modest correlations across their numerous measures of prosocial behaviors and, thus, concluded that prosocial actions were largely situationally determined. Although some disputed this conclusion (see Rushton, 1981, for example), the "situationist" perspective almost totally dominated research on the causes of prosocial actions at least through the 1970's. There were, to be sure, studies that investigated whether personality variables were associated with individual differences in prosocial behaviors.

Based on a variety of experiment have been conducted, Panner, et al (1995) also specified element of prosocial personality. Those are, social responsibility, emphatic concern, perspective taking, personal distress, mutual moral reasoning, other oriented reasoning, and self-reported altruism.

Altruism is also one of the element in prosocial. In this research, if a teacher have altruism for the student, so it is belong to prosocial action. The decision of a teacher who have been assigned on remote area need to be appreciated. In practiceally, many theories argue in originality of prosocial behaviors, such as personality characteristics of the individual, emotional condition, personal experience, the environmental situation, etc. Eventhough helping others is not necessarily appreciated, and many people believe on individual initiative which is stronger than mutual dependence (interdependence), however almost everyone agrees that the world would be better if the prosocial tendencies to be strengthened.

## **Risk Taking**

Risk taking is individual behavioral on making decision about anything without considering the risk (Stenberg, 2007). Some people make decision without considering the risk in every decision, but the other people always considering the risk in every decision. They did it because of many factors, such as their personality characteristic, experience, situation etc. Based on previous research, Peer influence on risk taking, risk preference, and risk decision Making in Adolescence and Adult : An Experimental Study (Gardner & Steinberg, 2005), explaining that The effect of chronological age on risk taking and risky decision making was significant. During the risk-taking game, younger individuals allowed the car to move forward for longer periods of time after the appearance of the yellow light and weremore likely to restart the car after stopping it. Similarly, younger individuals were more likely than older participants to select the risky course of action on the risky decision-making questionnaire. The effect of chronological age on risk preference was not significant.

Anderson and Galinsky (2006) give evidence on the positive association between power and risk that we consistently found seems to contradict empirical evidence suggesting that low status and the lack of power can be associated with risk-taking behaviors; for example, the finding that low SES is associated with risky behaviors such as unprotected sex or eating unhealthily. Perhaps education moderates our observed relationship between power and risk; it is highly possible that people low in SES are less educated about, and thus aware of, the risks inherent in dangerous behaviors such as unprotected sex or eating unhealthy diets.

According to Weber, et al (2002) ascertainable that risk taking arranging by two perspective, those are risk attitude and risk perception. Risk taking has five area, those are social, financial, ethical, health/safety and recreational.

## Teaching Intention

Intention is refers to the motivational factors that influence a given behavior where the stronger the intention to perform the behavior, the more likely the behavior will be performed (Fishben&Ajzen 1975). They also explaining the function of the intention, those are :

1. Attitude toward realization of behaviour in spesific situation, as personal factor and attitudional.
2. Norms give effect as realization of behaviour and individual motivational to obedient the norm, as social factor or normative.

Meanwhile, teaching intention is intention or willingness to teach. Teaching intention in remote area could correlated about definition of remote area in Indonesia. According to government regulation (Peraturan Pemerintah RI no 63 tahun 1992) about remote area, we can divided into several indicator/aspect, such as infrastructure of the street, economy, telecommunication, electricity, transportation, water resource, health service, religious service, market, social need, homestay, and education's facility.

## RESEARCH METHODOLOGY

### Time and Place of this Study

This study conducted in seven university in East Java, those are University of Muhammadiyah Malang (UMM), Maulana Malik Ibrahim State Islamic University in Malang (UIN Malang), State University of Surabaya (UNESA), Sunan Ampel State Islamic University in Surabaya (UIN Surabaya), University of PGRI Adi Buana (UNIPA) in Surabaya, Univeristy of Muhammadiyah Sidoarjo (UMSIDA) and State University of Jember (UNEJ). Furthermore, the time of this research between March and July 2014.

### Population and Sample

The population are students of elemantary school teacher in East Java. Whereas, samples of the research is students of elemantary school teacher in several university in Malang, Sidoarjo, Surabaya, and Jember. This research using systematic random sampling technique, that have special characteristic of the sample. Those are, student in minumum sixth semester and java native. Because, sixth semester is part of last semester in university, and it is time to decision where are they will do after graduate.

### Measures of the Research

In this research, using three instrument to measure the variable, the prosocial personality battery (PSB), domain-specific risk taking (DOSPERT) scale and teaching intentions scale. PSB and DOSPERT adaptated by try out, to minimizing culture bias. Nevertheless, teaching intention scale made by researcher based on goverment regulation (Peraturan Pemerintah RI no 63 tahun 1992) about remote area. Teaching intention scale also was try out to find the right validity and reliability.

### Variable of the Study

There is three variable in this study, those are prosocial, risk taking and teaching intentions. Operational definition of this study are as follows:

1. Prosocial Personality  
One of spesific element from the personality that part of characteristic prosocial behavior, and can appear in certain situation. Several element of personality prosocial, those are social responsibility, emphatic concern, perspective taking, personal distress, mutual moral reasoning, other oriented reasoning, and self-reported altruism.
2. Risk Taking  
The behavior of people who make decisions related to several things with or without considering the risks, which involves risk-attitude and also risk-perception in decision making.

### 3. Teaching Intentions in Remote Area

One form of consciousness for a teacher to distribute knowledge to learners who are in remote areas voluntarily.

#### Data analysis

By using IBM statistics SPSS 21, linier regression analysis was used to analyze the final data in this research.

## RESULT

Table 1. Result of Prosocial Personality Battery

Category	Frequency	%
High	50	11,34 %
Average	335	75,96 %
Low	56	12,7 %
<b>Total</b>	441	100 %

Based on the table 1, can be seen from the 441 subjects, 50 subjects, or 11.34% of the sample had levels of prosocial PGSD students who included into high of the category, 335 or 75.96% subjects have average level of prosocial categorized and 56 subjects or 12.7% of the sample PGSD students have low levels of prosocial.

Table 2. Result of Domain-Specific Risk Taking Scale

Category	Frequency	%
High	51	11,56 %
Average	336	76,19 %
Low	54	12,24 %
<b>Total</b>	441	100 %

Based on the table 2, can be known from 441 subjects, 51 subjects, or 11.56% of the sample PGSD students have a level of risk taking that included into high of the category, 336 or 76.19% of the sample subjects have average level of risk taking categorized and 54 subject or 12.24% of the sample PGSD students have a low level of risk taking.

Table 3. Result of Teaching Intention in Remote Area Scale

Category	Frequency	%
High	35	7,94 %
Average	370	83,9 %
Low	36	8,16 %
<b>Total</b>	441	100 %

Based on table 3, can be known from the 441 subjects, 35 subjects or 7.94% sample PGSD students have a level of willingness to teach in remote areas which included into high of the category, 83.9% of 370 subjects or more samples have a level of willingness to teach in remote areas average categorized and 36 subjects or 8.16% sample PGSD students have low level of willingness to teach in remote areas.

Furthermore, from the data analyzing, we get result correlation of the variable.

Table 4. Correlation of Prosocial and Risk Taking Factor being Effect to Teaching Intentions in Remote Areas

Regression Coefficients	Index Analysis
R	0,422
R <sup>2</sup>	0,178
F	47,467
P	0,000

Tabel 5. Standardization of Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	20.508	2.275		9.014	.000
PSB	.103	.039	.117	2.654	.008
DOSPRT	1.602	.182	.387	8.798	.000

Results of data analysis obtained coefficient (R) of 0.422 with a significance value (P) 0.000 <0.05. There is a significant positive relationship between prosocial (X1) and risk taking (X2) with a willingness to teach in remote areas (Y). It can be meaning the higher of prosocial and risk taking in students PGSD give effect the higher of their willingness to teach in remote areas. On the contrary, if the lower of prosocial and risk taking in students PGSD, it will be lower the willingness to teach in remote areas. Nevertheless, the relationship between prosocial (X1) and risk taking (X2) with a willingness to teach in remote areas (Y) on PGSD students is low, with the coefficient of determination variables (R<sup>2</sup>) of 0.178. The dependent variables willingness to teach in remote areas are influenced by independent variables prosocial and risk taking 17.8%, and the other percentage 82.2% is influenced by other variables.

## CONCLUSION

Various issues that cause problems distribution of teachers to remote areas is system not run effectively, the human resources of teachers are not qualified, or teachers are not willingness to teach in remote area. Based on the results of this study showed that prosocial aspects, and risk taking to positively influence the willingness of teaching significantly by 17.8%. The rest of 82.2% is influenced by other variables. This research is a preliminary study on this topic, because in Indonesia the researchers have yet to find study in this topic.

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# Optimizing the Existence of Micro, Small, Medium Business Entrepreneurs as the Central of Industry in Facing ASEAN Economic Community Based on Local Wisdom (Optimizing Micro, Small, Medium Business of Madura's Snacks Business)

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## ABSTRACT

This research's approach is descriptive qualitative and the method used is based on the study of literature. The result of this study shows that 1) The implementation of AEC should be responded positively by the micro, small, and medium scale business entrepreneurs, of course by preparing themselves to be creative and innovative to yield local products with their local wisdom. The local characteristics that must be set up and strengthened are self-confidence, discipline, hard working, and never despairing, 2) The micro, small, and medium scale business entrepreneurs must improve their innovation in producing Madurese snack products with their own specific characteristics therefore, consumers are willing to buy those local products. Besides possessing local specific characteristics and uniquenesses, the small and medium scale business entrepreneurs are recommended to create innovation in the taste and package of their products so that consumers are impulsed to buy. In addition, it is also worth saying is that the local government's active participation in giving stimuli through mentoring, coaching, improving the quality of human resources, as well as assistance dealing with capital and marketing for the small scale business entrepreneurs is really needed.

*Key Words: Optimizing the Existence of Small and medium scale business entrepreneurs, AEC, Local Wisdom.*

## 1. INTRODUCTION

Asean Economics Community (AEC) is one of the pillars of the ASEAN community dreams were set out in the Bali Concord II. ASEAN wished to establish a single market and production based. AEC era became general study last few years. AEC is the condition of the entire integration of the countries of Southeast Asia in various fields, especially in the economic field. Starting from the field of employment (people), the product (product), capital (capital) to services (service). In the era of AEC, there is no entry barrier for countries in the ASEAN region to carry out economic activities or interactions can be said there will be a free trade area (free trade area).

Countries in Southeast Asia is welcoming Asean Economics Community (AEC) by the end of 2015 which is aiming to establish cooperation among Southeast Asian countries in various fields including covering social, economic, cultural, and others. The applying of the Asean Economic Community (AEC) will configurate the concept of a single market and production based that triggers the free flow of goods, services, investment, production factors

and capital as well as the elimination of tariffs between the trade Asean, so in this case is expected to reduce the level of poverty and inequality economic and mutually beneficial cooperation among its member countries. Micro small and medium enterprises in Indonesia is quite dominant economy of a group of businesses owned by people of Indonesia, it can be said that the achievement of the success of AEC 2015 will be influenced by the readiness of micro small and medium enterprises itself.

For Indonesia today, the implementation of micro small and medium enterprises provide considerable impact both challenges that are internal and external. The impact is not only on the commodity or service or large-scale industrial products, but also micro small and medium enterprises.

For Indonesia, micro small and medium enterprises have a great role and contribution to the national economy for contributing 53.3% of total GDP (Gross Domestic Product). Micro small and medium enterprises in Indonesia is engaged in agriculture, industry and finance. The strategic role of Micro small and medium enterprises have contributed greatly to the real economy in Indonesia. In 2013, Indonesia's GDP was US \$ 868.3 billion, or 30% of the GDP of all ASEAN countries. The population of Indonesia most likely to use domestic products, which will drive large-scale industry and spur the growth of micro small and medium enterprises. When the AEC came into force in late 2015, micro small and medium enterprises still had to be strengthened further. The large increasing of micro small and medium enterprises will impact on the Indonesian economy.

As of today, it can be said that Indonesia is still facing many problems in the micro small and medium enterprises sector. Each region has different problems although in the same sector. In general, there is a similar problem that refer to internal factors, namely in terms of quality and productivity. In terms of quality, the development of micro small and medium enterprises can be assessed has increased in terms of quantity, but in terms of the quality of micro small and medium enterprises is still fairly uneven, so the quantity which is fulfilled is not matched with the uneven quality of the micro small and medium enterprises sector.

In terms of productivity, the increasing of productivity micro small and medium enterprises sector is still low, it is due to several factors: the low quality of human resources (HR) in managing the micro small and medium enterprises sector, improvement of the organization and marketing, lack of mastery of the technology and the limited access of micro small and medium enterprises to information resources, technology and especially capital. External factors commonly faced actors such business transaction costs are relatively expensive because of the changing in the business environment such as the scarcity of raw materials needed by the micro small and medium enterprises.

Department of Cooperatives and micro small and medium enterprises (Small and Menengah) Sumenep continue to intensify programs to increase the number of micro-enterprises. Programs that have been implemented in 2013, covers the training for efforts to continue to push for growing micro small and medium enterprises. Head of Department of Cooperatives and micro small and medium enterprises in Sumenep, Imam Trinohasi, has it that the available budget for the improvement of micro enterprises was very limited. So it did several programs to go through, namely by providing some training. Based on data from the Department of Cooperatives and micro small and medium enterprises in Sumenep, the number of micro small and medium enterprises by the end of 2013 reached 22 570 micro small and medium enterprises. With the increasingly strict competition as a result of the single market of the ASEAN Economic community will very likely have an impact on the survival of these Micro small and medium enterprises, as will have many the import products that will have gone through the market in the country. If Micro small and medium enterprises can not maintain its existence and make improvements in order to face an increasingly open market behavior in the future it will be very likely many Micro small and medium enterprises that will be folded. The Micro small and medium enterprises should be no longer rely on cheap labor in the development of its business. Creativity and innovation through the support of research and development is very important to bear in mind. In addition Micro small and medium enterprises should take advantage of opportunities to reach potential Micro small and medium enterprises market and maintaining the existence of its well. To be able to take advantage of these opportunities, the greatest challenge for Micro small and medium enterprises in the face of AEC is how to determine a strategy to win the competition, One strategy that can be used is to create excellence and distinctiveness of products produced from local wisdom.

According to the explanation above, the formulation of the problem are taken in the following discussion are a) Describe the local wisdom that needs to be built in the face of the AEC; b) Describe how to optimize the existence of Micro small and medium enterprises in the face of AEC in Sumenep area.

## **2. METHOD**

The approach used in this paper is a qualitative descriptive study based on literature. In the selection of this approach is expected to give a thorough overview of the state or certain symptoms in the object of study. In this case I tried to make a picture of the optimization of the existence of Micro small and medium enterprises as the Central industrialization in the

face of a local character-based AEC (Micro small and medium enterprises optimizing snacks in Sumenep Madura).

There are methods of data collection in the writing of this paper, namely the primary data and secondary data. Primary data includes books that are relevant to the topic of writing, scientific papers, journals, and articles from the Internet. The secondary data sourced from Internet sites Sumenep, Department of Cooperatives and Micro small and medium enterprises. Source of this study is expected to strengthen and sharpen the discussion.

### **3. DISCUSSION**

#### **3.1 Build Local Wisdom in the Face of AEC**

Enforcement of AECs should be addressed by Micro small and medium enterprises positively, of course, to prepare a creative and innovative ways to deliver products that have the distinctive character of the local area. Characters that need to be built and reinforced that attitude of confidence, discipline, work hard, and never give up.

Relation to the Micro small and medium enterprises, this can be compared with local wisdom, local issues, aspects and elements localit. Local issues in the business world does look more narrow in size, but the targets could be widespread with a unique character. With the competition in the era of ASEAN intensifies, Micro small and medium enterprises are required not only to produce products that seemed to just imitate or just rely on the quantity, but the products of Micro small and medium enterprises should have a unique and different character than other products (Atik Fazalina: 2015). It will be able to be well developed, if Micro small and medium enterprises can continue to explore the local knowledge of their respective regions and creates its own unique marketplace. Such as tourism and regional culinary Bali and Yogyakarta, tourists visiting Yogyakarta, precisely because the local nuances, aspects of location, elements and locality sense.

Sumenep has most tourist spots than the three other districts, namely Bangkalan, Sampang and Pamekasan. Sumenep become one of the favorite destinations for tourists to visit, either from tourism or from the many historical places in Sumenep. So even the motives of the shoppers are willing to buy a variety of Batik Madura, crafts and snacks typical of Madura in Sumenep. In this case the MICRO Micro small and medium enterprises should have a clear target consumer, and more specifically, as well as a clear idea of the needs of consumers that are tailored to the Micro small and medium enterprises core values. Local uniqueness into a new issue in the competition, not only in its large scale and the brand has to

offer, but also on comparative advantage. Indonesia has a wide range of cultural, tourist destinations are not limited to, a unique culinary and a series of other advantages that are sometimes sanctioned by the community Indonesia. This capital should be in explore again by Micro small and medium enterprises.

Local wisdom can run optimally also be needed to maintain and develop. This can be optimized through people power that departs from a community known as the Community Based Development Economist (CBED). Human resource development through the community give a great impact both in improving productivity and psychological impact for businesses. A sense of "being part of ..." providing a positive psychological impact and a high sense than simply looking for profit maximization with large production scale. CBED focus is to deceive and provide protection against social and economic activities of society. The implication of this CBED program implemented in the form of increasing public knowledge, training, assistance and other activities. Besides being able to explore the potential of local micro, small and medium enterprises with the CBED can also make people have the independence and economic capacity, and improve people's lives.

Through the development of Micro small and medium enterprises based on local wisdom and then continued with the community-based economic development opens a great opportunity for Indonesian Micro small and medium enterprises to be able to compete with foreign products. It also needs to be supported by the ongoing efforts of both the Micro small and medium enterprises, the public and relevant government so that this function is not merely a discourse. Mandated by Law No. 20 of 2008 on Micro, Small and Medium Enterprises is to realize and enhance the role of Micro, Small and Medium Enterprises in regional development, job creation, income generation, economic growth, and poverty of the people and poverty, must be understood and be a shared responsibility. Not only of Micro small and medium enterprises, but also an obligation to society and government in general.

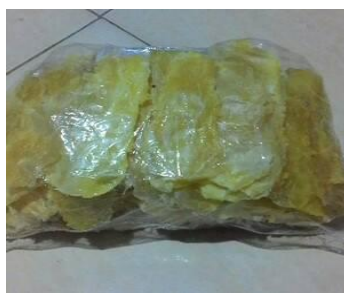
### **3.2 Optimizing Actors existence of Micro small and medium enterprises in the face of AEC in Sumenep Regional**

Micro small and medium enterprises should increase innovation and creativity in presenting products in Sumenep Madura snacks. A product should have the character and uniqueness. Therefore, if the resulting product has a distinctive character and uniqueness, then consumers will definitely buy local products of Micro small and medium enterprises. In addition, to have a distinctive character and uniqueness, Micro small and medium enterprises are better to innovate the taste and packaging of products manufactured, in order to attract more consumers. For those of you who have visited Sumenep, and take time to shop in Madura snacks store, especially in Sumenep you will surely find a lot of Madura typical

snack. For example, peanut Oto ', crackers pattola, paste Madura, Tette chips, cassava chips, rengginang lorju', and so forth. Lorju 'itself is a double-shelled mollusks or shellfish that looks like bamboo but little or commonly called the bamboo clams. Lorju 'is a kind of marine animals that still belongs to the family of shellfish. Packaging of snacks is still very simple, just wrapped in translucent white plastic. Product label was written perfunctory, even some that are not labeled product. Apart from the product packaging, the authors observed that should be no change from the making in terms of both taste and shape. Here are some pictures of snacks in Sumenep Madura.



**Image 1** Rengginang *Lorju*'



**Image 2** Keripik *Tette*



**Image 3** Keripik Singkong



**Image 4** Petis Ikan



**Image 5** Kacang *Oto*'



**Image 6** Pattola

Sumenep is an area which is located at the tip of the island of Madura, after Bangkalan, Sampang and Pamekasan. Unlike the three other regions, where tourism Sumenep have more than the three other areas on the island of Madura. Tourist places of the region, such Sumenep Lombang Beach and Beach Salopeng. In addition there is a natural health tourism and the island of Gili Iyang, the island is the island with the highest oxygen. Labek Gili islands, is no less beautiful scenery, with beautiful islands in Indonesia. Labek Gili Island has a very clear sea water, so that tourists can enjoy the beauty of underwater swimming or

just looking out over the surface. Sumenep also had a religious tourism that is Asta Sayyid Yusuf in the island Talango and Asta Tinggi Village Kasengan, District Sumenep Manding. In addition, Sumenep also has tourist attractions History Museum and Kraton Sumenep which lies east of Flower Garden Sumenep, museum and palace is also adjacent to the mosque Jamik Sumenep, which is a haven throughout the local and foreign tourists to worship or just take picture in the Jamik mosque. Here are some tourism picture in Sumenep.



**Image 7** Gili Labak Island



**Image 8** Salopeng Beach



**Image 9** Lombang Beach



**Image 10** Agung Mosque of Sumenep



**Image 12** Kraton Sumenep

With so many places of tourism in Sumenep, it becomes an opportunity with huge potential for the development of Micro small and medium enterprises in Sumenep. Given this tourism will involve a lot of other businesses such as transportation, accommodation, and will also absorb a lot of labor, then Micro small and medium enterprises will make effort has the potential to be run and developed. Micro small and medium enterprises have a great opportunity to continue to grow. However, the development of Micro small and medium enterprises in Sumenep still hampered a number of issues. Some things are still a barrier to the development of Micro small and medium enterprises in terms of two factors: internal factors and external factors of Micro small and medium enterprises, where the handling of each of

these factors must work together to obtain maximum results, namely: (1) the internal factor is the classic problem of Micro small and medium enterprises is weak in In terms of capital and managerial aspects (management capabilities, production, marketing and human resources); (2) External factors: an issue that arises from the developer and builder of Micro small and medium enterprises, such a solution is given not on target, the absence of monitoring and overlapping programs between institutions.

Optimization is no less important to mention is, the presence and participation of local governments in providing stimulus, in the form of mentoring, coaching, improving the quality of Human Resources (HR), as well as assistance in terms of capital to marketing to Micro small and medium enterprises. Local Government must take strategic steps in order to face competition from other ASEAN countries, not the exception of Micro, Small and Medium Enterprises (Micro small and medium enterprises). Micro small and medium enterprises have an important role in menghadi AEC, because Micro small and medium enterprises provide an extraordinary impact on the economic development in Indonesia. Micro small and medium enterprises in the industrial sector plays an important role in global economic development. To improve the quality of society and government should Micro small and medium enterprises, training and coaching both technical and managerial. Micro small and medium enterprises sector is very important to be developed in the face of the AEC related to the creative industries innovative funds, and to produce creative and innovative human resources need for coaching and training kkkhusus were supposed to be held by the public and local government in empowering the Micro small and medium enterprises sector.

In order to establish the ASEAN Economic Community, there is a great opportunity for Micro small and medium enterprises to seize the market potential and investment opportunities must be utilized properly. To take advantage of these opportunities, the greatest challenge for Micro small and medium enterprises is how to face the AEC was able to determine the right strategy to win the competition. At the end of 2015 when the AEC is applied, it is estimated there will be some changes in the behavior of the market with the characteristics:

- a. the characteristics of dynamic markets, global competition, and organizational forms that tend to form a network (network);
- b. the level of industrial production is a flexible organization with the growth driven by innovation / knowledge;
- c. supported by digital technology;
- d. sources of competition on innovation, quality, time and cost;
- e. prioritizing research and development; and



f. develop alliances and collaboration with other businesses.

Therefore, from now on Micro small and medium enterprises should start to improve in order to face an increasingly open market behavior in the future. The Micro small and medium enterprises should no longer have to rely on cheap labor in the development of its business. Creativity and innovation through the support of research and development is very important to note. Cooperation and the establishment of business networks, both inside and outside the country with fellow Micro small and medium enterprises and large businesses should be developed.

The government's role would be especially important to take them in order to compete with other businesses in utilizing the AEC in 2016. Some of the efforts that need to be done by the government to strengthen the competitiveness of Micro small and medium enterprises facing global market are:

1. Improving the quality and standards of products; In order to be able to take advantage of opportunities and potential markets in the ASEAN region and the global market, the products produced by Micro small and medium enterprises must meet quality and standards in accordance with the agreement of ASEAN and the countries of destination. Within that framework, the Micro small and medium enterprises should begin facilitated with the quality requirements and product standards required by the ASEAN market and outside ASEAN. The role of technological support for improving the quality and productivity as well as the introduction of design to the Micro small and medium enterprises who wish to utilize the ASEAN markets is urgently needed.
2. Improving access to finance; Financial issues in the business development of Micro small and medium enterprises is very classic. During this time, not many Micro small and medium enterprises can take advantage of financing schemes provided by banks. The survey results Regional Development Institute (REDI, 2002) states that there are three gaps encountered with regard to access to finance for Micro small and medium enterprises,
  - a) aspects of formality, because many Micro small and medium enterprises which do not have legal status;
  - b) aspects of business scale, where very often the credit scheme is not in line with the bank prepared Micro small and medium enterprises scale; and
  - c) aspects of information, where banks do not know which ones should be funded Micro small and medium enterprises, while the Micro small and medium enterprises also do not know what financing schemes available in the banking system.

3. Improving the quality of human resources and the entrepreneurial spirit of Micro small and medium enterprises; In general the quality of human resources Micro small and medium enterprises in Indonesia is still low. What's more entrepreneurial spirit. When referring to the data of Micro small and medium enterprises in 2008, the level of entrepreneurship in Indonesia is only 0.25% and in 2011 is estimated at 0.273%. Indeed this is very far behind the other countries in the world, including in Asia and ASEAN. As in Singapore, the level of entrepreneurship in Singapore more than 7% as well as in the USA, entrepreneurial level has reached 11.9%. Therefore, in order to strengthen the quality and entrepreneurial Micro small and medium enterprises in Indonesia, it is necessary to education and skills training, management, and other appropriate technical training, in accordance with needs. Entrepreneurship development also needs to be improved.
4. Strengthening and improving access to and transfer of technology for Micro small and medium enterprises for the development of innovative Micro small and medium enterprises; Access to and transfer of technology for Micro small and medium enterprises is still a challenge faced in Indonesia. The role of incubators, research institutions, and the cooperation between research institutes and universities and the business world for the transfer of technology should be encouraged. Cooperation or partnership between large companies, both from home and abroad with Micro small and medium enterprises should be encouraged to transfer of technology from large corporations to Micro small and medium enterprises. This practice has been a lot of walking in some developed countries, such as USA, Germany, England, Korea, Japan and Taiwan. Cluster development models should also be developed, because the model will occur through the transfer of technology to and among Micro small and medium enterprises.
5. Facilitate Micro small and medium enterprises related to access to information and promotion abroad; The most important part of the production process is a matter of the market. No matter how good the quality of the products, if the public or the market does not know, then it will be difficult marketed products. Therefore, the provision of information and the promotion of Micro small and medium enterprises products, in particular to introduce in the ASEAN market should be improved. Promotional products, can be done through cyberspace or follow the activities of exhibitions abroad. In the promotion of these products to foreign countries should also be noted the readiness of Micro small and medium enterprises in the supply of the product to be marketed. In this regard, not only the quality and design of products that must be considered, but also on quantity and continuity of its products. In addition to a huge market opportunity, because

the population of ASEAN has reached more than 590 million people, some other potential possessed of course it is possible to be used by Micro small and medium enterprises in Indonesia (Bageur, 2015).

In addition, the need of dissemination to the general public about the existence of the ASEAN Economic Community in 2016 so that people realize that is expected to foster a sense of confidence and readiness when the era of the ASEAN Economic Community in 2016 came. We will be able to face numerous challenges in the coming era of the ASEAN Economic Community in 2016 if we have strong competitiveness, preparation, so that the products in the country will host in the land itself, and we are able to take advantage of the presence of the ASEAN Economic Community in 2016 to the common interest and for the greatest prosperity of the people.

The quality or level of quality is good or bad, or the level or degree of something. Productivity is a AECsure that states how well the resources are organized and utilized to achieve optimal results. Human resources is a component of the natural environment, for humans as a natural resource. The quality of human resources is determined by the quality of natural resources and the environment. In general the quality of human resources of Micro small and medium enterprises in Indonesia is still low. What's more entrepreneurial spirit. If referring to the data of Micro small and medium enterprises in 2008, the level of entrepreneurship in Indonesia is only 0.25% and in 2011 is estimated at 0.273%. Indeed this is very far behind the other countries in the world, including in Asia and ASEAN. As in Singapore, the level of entrepreneurship in Singapore more than 7% as well as in the USA, entrepreneurial level has reached 11.9%.

Therefore, in accordance with needs to strengthen the quality and entrepreneurial Micro small and medium enterprises in Indonesia, it is necessary to acquire education and skills training, management, and other appropriate technical training. Entrepreneurship development also needs to be improved. National Entrepreneurship Movement Declaration on February 2, 2011 and should be followed up with concrete steps, such as preparation of the grand strategy in the field of entrepreneurship development and implementation is done in conjunction and responsible. It is important also to note is the need to support start-up capital for entrepreneurs, especially beginners.

## **4. CLOSING**

### **4.1 Conclusion**

Based on the above discussion, the conclusion that emerges is as follows:

4.1.1 Enforcement of AEC should be addressed by Micro small and medium enterprises positively, of course, to prepare a creative and innovative ways to deliver products that have the distinctive character of the local area. Characters that need to be built and reinforced that attitude of confidence, discipline, work hard, and never give up;

4.1.2 Actors Micro small and medium enterprises should increase innovation and creativity in presenting products in Sumenep Madura snacks. Therefore, if the resulting product has a distinctive character and uniqueness, then consumers will definitely buy local products of Micro small and medium enterprises. In addition to having a distinctive character and uniqueness, should Micro small and medium enterprises innovate taste and packaging of products manufactured, in order to attract more consumers. Besides it is not less important to mention is, the presence and participation of local governments in providing stimulus, in the form of mentoring, coaching, improving the quality of Human Resources (HR), as well as assistance in terms of capital to marketing to Micro small and medium enterprises.

## 4.2 Suggestions

By seeing the opportunities and potential for the development of Micro small and medium enterprises in Sumenep, Sumenep district government there should be more intensive in encouraging the development of Micro small and medium enterprises. In addition, the Micro small and medium enterprises need to innovate and develop products that can compete in the free market AEC 2016.

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## INQUIRY-BASED INTEGRATED SCIENCE EDUCATION: IMPLEMENTATION OF LOCAL CONTENT "SOIL WASHING" PROJECT TO IMPROVE JUNIOR HIGH SCHOOL STUDENTS' ENVIRONMENTAL LITERACY

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### Abstract

The study was conducted based on teaching and learning problems led by conventional method namely teacher centered that had been done in the process of learning science. It gave students lack opportunities to develop their competence and thinking skills that focused on completing the material in accordance with the target curriculum. Consequently, the process of learning science was neglected. Students did not have opportunity to improve their critical attitude and creative thinking skills. To cope this problem, the study was conducted using Project-Based Learning model through inquiry-based science education about the environment. The study also used *Sains lingkungan and Teknologi masyarakat-"Saling Temas"* approach (Environmental science and Technology in Society) which promoted the local content in Lampung as a theme in integrated science teaching and learning. The study was a quasi-experimental with pretest-posttest control group design. Initially, the subjects were given a pre-test. The experimental group was given inquiry learning method while the control group was given conventional learning. After the implementation of the learning process, the subjects of both groups were given post-test. Quantitative analysis was performed using the Mann-Whitney U-test and also the study used a qualitative descriptive analysis. Based on the result, environmental literacy skills of students who get inquiry learning strategy, with project-based learning model on the theme soil washing, showed significant differences. The experimental group is better than the control group. Data analysis showed the *p-value* or *sig.* (2-tailed) is  $0.000 < \alpha = 0.05$  with the average *N-gain* of experimental group is 34.72 and control group is 16.40. Besides, the learning process becomes more meaningful.

Keywords; inquiry-based environmental education, local content, soil washing project, and environmental literacy

### INTRODUCTION

In regulation B of ministry education and culture number 68 of 2013, it is stated that national internal challenges is associated with the development of the population in Indonesia in terms of the growth of productive age. Currently, the number of productive age population (15 to 64 years) is more than unproductive age (children aged between 0-14 years old and people aged over 65 years old). The number of productive age will come to peak in 2020-2035 when it reached 70%. Therefore, the major challenge faced by the nation is how to strive the abundance of human resources in productive age to be transformed into human resources who have the competence and skills acquired through education.

To support that fact, Kuntari (2013) described: humanity in the 21<sup>st</sup> century lives in media and technology era that form special characteristics including: 1) access to the information, 2) adaptation in rapid development of technology device, and 3) the ability to collaborate and develop individual contributions on a scale that never happen before. To get settle in 21st century, one must have functional skills and critical thinking upon information, media and technology

Learning science as part of process of education has significant role in developing

individual function in this globalization era. One of the roles is to improve students' ability to think creatively in learning process so that they can face the globalization era. The ability of such creative thinking leads students who can express and elaborate original concept or idea to solve any problem. This is in line with Munandar (1992) who stated that creativity or to think creatively as ability to see various possibilities of problem solving which is as the idea which still doesn't get attention so far.

It has been known that the process of learning science took place in junior high school generally provoked lack of attention to the students' thinking skills and its developmental process. This is due to the implementation of learning science which mostly occurred with conventional models namely a way of classical teaching. This learning process did not give students to get involved in the learning process. This model has many weaknesses such as the role of the teacher is still more dominant (teachers centered), students tend to be passive and just accept information by memorizing concepts without adequate understanding. It is because the learning process did not guide the students to think critically, creatively, practicing to find concepts or principles to develop their creativity. So that, the achievement of learning is limited only to the aspects of knowledge (cognitive) but it did not develop in the aspect of attitudes (affective) and skills (psychomotor).

According to the National Education Standards (2006), learning objectives of Science subject requires the learners have the ability to develop curiosity, positive attitude, and awareness of the existence of mutual relationship between science, technology, and society. Therefore, science education which is formulated based on facts, phenomena, and results of discovery or observation becomes one of important element in the process of development and advancement of science and technology.

In the global era nowadays, the complexity of life and high pressure in workplace requires students to pay more attention to their development abilities and career in the future. Students must have the skills to develop the power of flexibility and adaptability toward the rapid change occurs.

Another fact, students today have tendency to step away from values of protecting the environment. It can be seen from their consumptive behavior yet less productive in protecting the environment. There are number of students who use both private and public facilities in bad way. Gradually, their responsibility to take care public facilities is decrease even they do not have it at all. They could not take the advantage of technology to solve their problem about the environment as well as the issues about it. Also, they do not employ the environmental science, such as throwing rubbish in its place, taking care of plants in the garden, and watering the flower, then, recycling the potentially useful materials. Thus, the application of utilizing environment is still considered low so that it affected their awareness toward the environment. Therefore, it resulted problem occurred in both school system and in society today. Moreover, it seem like the environmental awareness is no longer needed. Based on this condition, one of the efforts to cope this problem is by using analysis of environmental literacy.

## **THEORETICAL FRAMEWORK**

Arends (Trianto, 2007: 1) explains that the learning model refers to the learning approach that will be used in learning process, including the learning goals, and the stages in the learning activities, learning environment and classroom management.

Trianto (2007:2) states that learning model can be said as conceptual framework that defines systematic procedure in organizing learning experience in achieving the learning goals. The function of learning model is as the guidance for the designer of learning model and for the teacher as well in implementing learning model. It can be concluded that learning model is conceptual framework that forms particular pattern and portrays systematic procedure of implementation of

learning approach that becomes manifest reference in learning purposes in order to achieve optimum learning outcomes.

The term of learning model has four special characteristics, namely: 1) logical theoretical rational that is prepared by the designer 2) The basic thoughts about what and how students learn, 3) behavior of teaching that is necessarily required for the model to be successful, 4) learning environment needed so that the learning objectives can be achieved (Sanjaya, 2006).

The syntax of learning model shows clearly what activities should be done both by teachers and students as well as particular assignment which is done by the students. Syntax of learning model has similar components such as attracting students' attention by motivating them to get involved in learning process both in the beginning and at the end of the learning process. Arranging the syntax of the learning model must concern several factors such as differences in the management of learning environments, differences in the role of the teachers and students as well, differences in physical spaces and differences in social class system. Accordingly, those differences should be understood by teachers in implementing the learning model so as to it can be applied properly.

Project-based learning is a learning process which provides more opportunities for the teachers to manage classroom learning by involving work project. Work Project includes complex tasks based on very challenging questions and problems and that require students to design, solve problems, make decisions, conduct investigations. Moreover, the task provides opportunities for students to work independently to in completing the task. Project-based learning has syntax: (1) starts with the essential question, (2) design a plan for the project, (3) creates a schedule, (4) monitor the students and the progress of the project, (5) assess the outcome (6) Evaluate the experiences.

Scientific inquiry refers to a variety of ways for scientists to study the universe and aims to provide an explanation based on the evidence obtained. Inquiry also refers to students' activity when they build a knowledge and understanding of scientific ideas, as scientists' attempt to understand the universe. (National Science Education Standards, the United States, p. 23)

According to Nuryani (2005: 17), inquiry in learning indicates that effective science learning depends on the availability, organizing materials, media and tools, and technologies. Accordingly, a learning that refers to the inquiry wants to be more scrutiny through continuous research.

Bruce (Sahin, 2013), explains that *"inquiry-based learning is a teaching and learning approach that engages students to explore their own questions and interests, by (1) asking meaningful questions, (2) planning and executing investigation strategy, (3) gathering information from a variety sources, (4) discussing information in productive presentation, (5) reflecting on their own learning"*.

Capraro dan Slough (Sahin, 2013) add that *"during inquiry based learning, conduct research, collect data and make inferences. Though their research, students make their own discoveries as opposed to producing a product or artifact that has real- life applications"*.

Thus, it can be seen that the purpose of the inquiry learning is to develop the ability to think in a systematic, logical, and critical or develop intellectual abilities as part of the mental process. Hence, in inquiry learning students are not only required to master the subject matter, but also to know how they can use their potential. Students who are able to master the lessons only may not be able to develop their optimal thinking ability. Whereas, the students will be able to develop their thinking skills as they could master the subject.

A very dynamic relationship between human and his environment can be seen from how they live together, side by side with all the components around it. It is overly conceptual somehow because the fact does not happen as it is. Individual ability to behave in daily life by using his/her



understanding of the environment conditions is called environmental literacy.

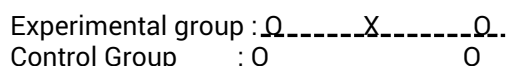
Hollweg *et al* defines environmental literacy as "*The cognitive domain refers to the individual's knowledge of ecological concepts and processes that provide the foundations for comprehending human impact on natural systems: environmental issues and environmental action strategies; as well as the cognitive skills for analyzing environmental problems and for the use of environmental action strategies. The affective domain refers to the individual's environmental awareness and sensitivity; attitudes, values and worldview regarding the environment; locus-of-control (sense of ability to influence a situation through personal behavior, i.e. self-efficacy) and assumption of personal responsibility (sense of obligation toward the environment. i.e. personal commitment to environmentally corrective behaviors). Behavior is the ultimate expression of EL - the individual's EL should be reflected in his/her behavior concerning the environment. It can be inferred that developing EL is equivalent to developing responsible environmental behaviour, i.e. in the context of EL, knowledge, dispositions, and competencies enable and are expressed as behaviours (Daphne Goldman et.al., 2014:3).*

Environmental literacy is the ability or skill in understanding the importance of protecting the environment both for current need and future generations as well. According to Amini environmental education are expected could guide students to behave and aware of the environment (Aryanti). It is an attempt to change behaviors and attitudes conducted by some sides in which in its implementation it can bring the classroom to the factual environment and in other way bring the environment to the class. This means that the learning would use the environment as a learning resource in order to achieve the learning objectives that have been stated. Good environmental management can guarantee the availability of natural resources which are important for public welfare and environment safety in the future.

### RESEARCH METHODOLOGY

The study used a quasi-experimental research method with pretest-posttest control group design. Subjects in both classes were given a pre-test and then the experimental group was given inquiry learning and control group was given conventional learning. After the implementation of the study, subjects in the two classes were given post-test. The subjects were students of class VII SMPN 2 Hulu Sungkai, namely Class VIIB as control class that implemented conventional learning and class VII A as the experimental class implemented inquiry learning. The study used purposive sampling technique. The purpose of this technique is so that the study could be carried out effectively and efficiently, especially in terms of supervision, the condition of the subjects, research time, place, and procedural licensing. Based on that technique, sample of two classes obtained, namely class VII A as experimental group consisting 26 students and the class VII B as control group consisting 23 students.

By the assumption that experimental group and control group are homogenous, thus the design is likely:



- O : pretest or post test of problem solving ability
- X : learning use discovery learning strategy
- : Subjects are not grouped randomly

Whereas, qualitative methods played role to answer research questions derived from observations, interviews and observations that had been conducted and analyzed qualitatively by

describing the findings that were obtained during research in the field.

Data process was calculated based on the normalized score-gain with the formula proposed by Cheng (Gunawan and Liliasari, (2012), namely:

$$N\text{-gain} = \frac{S_{post} - S_{pre}}{S_{max} - S_{pre}} \times 100\%$$

In which,  $S_{post}$  = Post test score,  $S_{pre}$  = Pretest score,  $S_{max}$  = maximum score gained.

Table 9. N- Gain classification by Cheng (Gunawan and Lilisari 2012)

N- gain Classification	Description
N-gain > 0,70	High
0,3 <N-gain > 0,70	Middle
N-gain < 0,30	Low

### FINDINGS AND DISCUSSION

Based on analysis of N-gain score of students' environmental literacy skills by using normalized gain data, the data shows the increase classification (quality) of students' scores compared with the ideal maximum score. The average of N-gain represents an increase of scientific literacy skills of students who were given inquiry learning using project-based learning model or students who were given conventional learning. The average N-gain of student's scientific literacy skills in experimental group and control group are presented in the following table:

Tabel 1. Average and N-gain classification of Environmental Literacy

Group	Avergae N-gain	Classification
Control	16.40	Low
Experimental	34.72	Middle

Based on Table 1 above, it shows that students who were given inquiry learning strategy with project-based learning model on theme Soil Washing project get higher average N-gain score than students who were given conventional learning. N-gain classification of control group considered as low grade, whereas the N-gain classification of experimental group considered as medium. This demonstrates the environmental literacy skill of experimental group is higher than the control group.

This indicates that the inquiry learning strategies using project-based learning model gives a good contribution to improve environmental literacy skills than conventional learning model does.

However, to ensure that the increase in students' environmental literacy skills who get the learning environment project-based learning in theme Soil Washing Project is better than students who get conventional learning needs advanced statistical tests. Statistical tests which is needed to prove the hypothesis "environmental literacy skills of experimental group is better than the control group" is namely the differential average N-gain scores Test. Although, N-gain score of the data

must meet the requirements of normality and homogeneity before it is being tested.

The normality test of N-gain score is calculated by Kolmogorov-Smirnov test with SPSS 16. The results of the test are presented in the following table:

Table 2. Normality test of N-gain score

Group	Kolmogorov-Smirnov			Conclusion
	Statistic	Df	Sig.	
Control	.133	26	.200*	Normal distritubion data
Experimental	.197	23	.021	Non-Normal distribution data

Table 2 above shows that N-gain score of environmental literacy skills of students in experimental group has the Sig. <A = 0,05, so, it means Ho is rejected. This indicates that the N-score data of students' environmental literacy skills of experimental group is non-normal distribution. Whereas, the N-gain of control group has the Sig. > A = 0,05 so it means Ho is accepted. This indicates that the N-score data of students' environmental literacy skills of control group is normal distribution. Based on the results of normality tests that have been done previously, it can be concluded that N-gain score of experimental group considered as non-normal distribution and control group is normal distribution.

To prove the N-gain score of experimental group is better than the control group, it is necessarily conducted differential average N-gain scores Test using non-parametric test (Mann-Whitney U-test).

The first hypothesis proposed in the research study, namely: there is different average on environmental literacy between the experimental group and control group.

To test the hypothesis proposed above, statistical hypothesis is formulated as follows:

$$H_0 : \mu_1 = \mu_2$$

*There is no significant difference* in improvement of environmental literacy between students who were given inquiry learning strategy with project-based learning model and students who were given conventional learning.

$$H_a : \mu_1 \neq \mu_2$$

*There is significant difference* in improvement of environmental literacy between students who were given inquiry learning strategy with project-based learning model (experimental group) and students who were given conventional learning (control group).

**Notes:**

The improvement of math problem solving ability of the students who were used inquiry learning strategy.

$\mu_1$  = average N-gain of environmental literacy skill of students who get inquiry learning strategy (experimental group).

$\mu_2$  = average N-gain of environmental literacy skill of students who get conventional learning strategy (control group).

Here is the summary of the results of the differential average test of N-gain score at significance level  $\alpha = 0.05$ .

Table 3. The differential average N-gain test of Environmental Literacy.

Statistics	Value	Description	Conclusion
Mann-Whitney	75.500	Ho rejected	There are differences
Z	-4.480		
Asymp. Sig. (2-tailed)	.000		

Based on Mann-Whitney Test above, *p-value* or *sig. (2-tailed)* gained is  $0.000 < \alpha = 0.05$ . This shows that  $H_0$  is rejected, it means improvement of environmental literacy skills of students who get inquiry learning model using Project-Based Learning on theme Soil Washing is better than students who get conventional learning. Therefore, the hypothesis which states there is significant difference in the average score between students' environmental literacy skill of experimental group and control group is proven.

Before the researcher conducted learning process in Class VII, she conducted direct observations in the classroom and outside the classroom indirectly for 4 times. It started from May to July 2015 to get an idea about what will be conducted by researcher in implementing inquiry learning strategies with project-based learning model on the theme of soil washing project. Besides, the researcher conduct interviews with the school principal, vice-principals, administrative staff, homeroom teachers, science teachers, and the students in order to the researcher describes the real situation.

Observations which was conducted before learning using project-based learning on the theme soil washing Project is to know conditions of the students before learning process. Learning science in SMPN 2 Hulu Sungkai during observation still did not show a learning process that indicated a student-centered method. Consequently the teachers still acted as a subject of learning (teacher –centered). Students considered that the teacher is the only source of learning and students were not motivated to get and find their own knowledge. Accordingly, they only received and listened to what was given and explained by the teacher without any feedback from them. In the learning process, teachers simply wrote questions and gave the answers for the students. In other word, teacher finished it on the board and then the students were told to take notes and memorize what has been written. Unfortunately, this is carried out by the teacher continuously. Based on unstructured interviews conducted on science teacher, he said students at the school would find it difficult if they were treated with another method, they believed that students could learn and understand with conventional learning method only. However, the information that was given by the teacher contrasted with findings that the researcher obtained from interviews conducted on the students. Unstructured interview on VII year students stated that students did not like learning method which is monotonous. So that it made students did not understand what was being learned as well as it always led students become lazier to learn science, even there were some students considered the learning science that had been done was boring and less attractive, especially when the teacher showed anger in the classroom. It made the students feel frightened and reluctant to learn science.

During the lessons the students did not seem actively to ask or to deny what was explained by teachers. Moreover, the learning process did not encourage students to learn collaboratively. During the study, there was no discussion, the teacher just quietly wrote on the board and students copied it in their books after being instructed by the teacher.

Based on the research result, inquiry learning strategy on Project-Based learning model on theme Soil washing project gave good impact on the learning process in Grade VII SMPN 2 Hulu

Sungkai. It can be seen from the improvement of students' ability or skill to find a concept and could complete their tasks, and they also could implement it in their daily life. In addition, students get their encouragement to express their opinion, ideas and questions. From the pre-test and post-test questions given by the teacher, there were various answers appeared from students. The result was generally the same. The students also got involved in checking their work so they could know the right and wrong answer.

It cannot be separated from constructivism approach through a strategy of inquiry in which the process of learning emphasized the involvement of students and the teacher acted as a facilitator only. Additionally, in the learning process, the researcher always delivered motivation for the better learning, courage, by giving reward through positive words so that it encouraged students to be more active. Besides, the teacher awakened the curiosity of students by providing some introductory questions before starting the activity.

Teachers also led the students to think creatively in order to be able to solve problems. At the beginning of the learning, namely at the first meeting, there were still few students who dared to ask questions, to develop ideas or to comment on other students. So that teachers still have to motivate the students or to manage students to come forward and present the results of working group. When students are grouped to work together and discuss how to complete teacher instruction, their collaboration and cooperation still did not appear. There are several groups that are dominated by one or two students. Although, the learning activity had increased in the next meeting, collaboration between group members appeared. It can be seen from the involvement of students in completing and implementing the instructions provided by the teacher. The number of students who conveyed the idea also increased known from variations of answers from each group in completing the worksheets provided by the teacher.

The result of analysis from pre-test and post-test also shows that there are differences on environmental literacy skill in each indicator:

Table 4. Average N-gain Indicator of Environmental literacy

NO	Indicator	Average N-gain	
		Control	Experimental
1	Awareness to the environment	16,60	32,48
2	Knowledge of the environment	16,17	43,96
3	The application of material science in the development of integrated environmental curriculum	20,26	29,54
4	The application of environmental knowledge	17,71	24,45
5	Initiative and works in environmental management	19,71	30,96

From the table above, it can be seen that the students' environmental literacy skills in the control group are low because the average value of N-gain is below 30%, but in the experimental group for indicator such as awareness on the environment, environmental knowledge, then the initiative and works in environmental management are categorized middle. In experimental group, indicator which was categorized as low is indicator of the application of material science in the development of integrated environmental curriculum and initiative and works in environmental management.

The contents in each indicators are depicted as follows: 1) awareness to the environment: sorting organic and inorganic trash, recycling waste, reducing the use of organic fertilizers, knowing the knowledge of crop rotation and reforestation; 2) Knowledge of the environment: understanding the issues of the environment, understanding the criteria of polluted environment, knowing the hazardous and toxic environmental contaminant substances, explaining the government's efforts to maintain the sustainability of the environment, explaining the role of the environment for the survival of living things, explaining the relation of climate change and the environmental change, giving examples of individual contribution from living things upon global environmental change; 3) The application of material science in the development of integrated environmental curriculum: mentioning biotic and abiotic environment, understanding elements and compounds in soil, measuring the mass and volume of the substance, differentiating characteristics of Physical and chemical changes, measuring the pH of the soil, explaining the role of microorganisms in dealing with soil pollution, reading the graphic / tables of soil laboratory test result; 4) The application of environmental knowledge: performing community service to clean up the environment, expressing the idea / ideas to solve the soil pollution, explaining how to create Soil washing formulas, proving the hypothesis if the soil washing formula can be used to reduce pollutants and contaminants in soil, measuring soil fertility using the media of mushrooms and the results of soil pH measurement; 5) Initiative and works in environmental management : expressing the idea of a waste banks, uttering the idea of a new variant of soil washing formula, applying the culture of environmental awareness in everyday life, and finally, implementing regulations on environmental preservation.

Based on results from the series of experiments which was conducted, students can find out that the use of chemical fertilizers continuously can reduce the fertility of the soil, because the fertilizer that is given only contain small amounts of elements needed by plants. Sometimes, the soil itself will be more excessed in amount of the particular elements while the other elements are declining in number. Therefore, For the improvement of soil composition, it needs to conduct either by using organic fertilizers or reducing the use of inorganic fertilizers.

Moreover, Students also know that the ideal soil conditions must be made up of 15 elements nitrogen, potassium, phosphorus, magnesium, manganese, iron and so on. With the criteria of soil pH ranges from 6 to 8 in which good for planting. Soil has unique properties in which it can remediate itself by the assistance of particular microorganisms. So that it can degrade the heavy metal elements which pollute the soil then turn into particles or molecular which is not dangerous for life.

In implementing soil washing project, students understood the function of each substance used in making soil washing formula, also, when all materials are mixed, students knew the substance that seemed to be acidic yet turned out to be alkali later. In addition, students can measure the dose needed to make the soil washing formula. When the formula was being tested in soil samples, students are able to know that the original soil washing formula used in the fields had no impact which means it cannot change the soil pH of the field. Whereas, the soil washing formula of variant of coriander can increase the soil pH which originally ranged around 4 to 5, changes into 6. The students also could observe the physical and chemical changes in the soil directly. At the time of soil samples are added with some water and mixed with soil washing formula and then stirred well and let it for a while until the solution is sediment, It can be seen that the soil which was not given the formula did not experience any changes at all, but the soil which was given the formula formed 3 layers of soil which were formed by the density of constituent particles in which the bottom layer has a biggest density and the top layer has smallest density. If it is associated with the function of the soil washing formula to clean soil from pollutants and contaminants that come from hazardous and toxic materials, it can be assumed that heavy metals will form a molecular bond after

it reacted with a solution of soil washing and was brought into the inside of the soil, however, the harmful or safe molecules / particles that are required by the plants will be forced to the surface. Therefore, this may explain the work of the formula on the soil washing project is more efficient than existing theories.

Thus, students can understand the importance of preserving the environment, especially the preservation of their soil as part of their life in the future. The project is expected can affect the students' mindset in order to evoke a sense of belonging and care to the environment. Also, the project can arouse students' desire to develop their district later when they are adult. Addition, they should forget their dream to find a job in the city or become Indonesian labor force as it had been done by people before them.

This is one of the nature of meaningful learning and one of the objectives of this study. Thus, not only to improve the students' environmental literacy skills, but also to create moral and social values of students so that they can answer the issues and solve the problems that occurred wisely and appropriately in the future.

## CONCLUSION

Based on the results of data analysis and discussion presented before, it is derived some conclusions as follows:

1. Inquiry-based environmental education: the implementation of the project "soil washing" is proven could help increase the students' environmental literacy.
2. The environmental literacy skill of students who use inquiry learning strategy with project-based learning model on the theme soil washing showed significant differences, the experimental group is better than the control group. The data analysis shows the *p-value* or *sig.* (2-tailed) is  $0.000 < \alpha = 0.05$  with Average N-gain 34.72 for experimental group and 16.40 for control group.
3. Students' learning Interest who used inquiry learning strategy with project-based learning model on the theme soil washing project has increased, it can be seen from the enthusiasm of the students when learning process took place.
4. There is a correlation between students' environmental literacy skills and students' learning interest.
5. Students can develop values that appear in the learning process such as moral and social values of the environment so that it could make meaningful learning.

## SUGGESTION

Based on the conclusion above, there are some suggestions:

1. inquiry learning strategy in science learning using project-based learning model should be an alternative for science teachers in junior high school, especially in improving the students' environmental literacy skills and learning interest.
2. in implementing the inquiry learning strategy with project-based learning model, teachers should create a better scenario and mature planning so that the learning can be applied in the classroom properly, especially time setting of research should take into account appropriately.
3. It necessarily needs further research to look at the effectiveness of the application of learning strategies so that learning science inquiry in inquiry learning strategies and learning model of problem-based learning can be applied in various schools. In order to the inquiry learning strategy is familiar to students and easy to apply, it is better to introduce it from primary school level by selecting the appropriate materials with the characteristics of inquiry learning. Additionally, if it is necessary, the learning model should be simplified so that it can

- be applied easily based on the characteristics students in primary level
4. For teachers, who want to implement inquiry learning strategy in improving students' problem solving skills and increasing students' interest in learning science, need to pay attention to the following points:
    - a) Teachers are suggested to choose which materials which are appropriate to be delivered through inquiry learning strategy, because not all the material is suitable to be delivered through this learning model.
    - b) Teachers should master and understand about the rules, the nature and theory of constructivism learning through inquiry learning strategies so as to the learning process run in accordance with the stages proposed in constructivism learning.
    - c) To provoke the student's interest, teachers should show great motivation to the students in learning process so that students will follow them.
    - d) d. Teachers always motivate the students to be more active and better in learning.

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## Fan Fiction in the Class

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Writing story in online media is becoming a new trend. Fan fiction, a new genre of literary works gets a lot of fans. Teenagers share story, experience, identity, information, and doing new kind of experiment of writing narrative. Theoretical constructs within postmodernism and literacy are used to describe the characteristics of fan fiction, the aspects of fan fiction becomes popular among young generation, and fan fiction being use in the class. Findings suggest that the new form of literary works could be the variation of material discussion in the class since it is success in delivering the idea especially about new topics ever happen among teenagers. Interactive discussion, creative writing, and academic writing are also possible to have fan fiction as the source to develop the creativity of the students.

### Introduction

Online media is not a kind of difficult facilities to be reached, especially where high technology has already become unexpansive facilities anymore. Many food corners, restaurants, café, hospitals, offices, and parks provide free Wi-Fi to all ranges of age and sex. These basic condition and situation are the primary reasons any information or ideas online have millions of readers. In the close future the number of them will be a lot more, following the raising number of technology progresses. Between the technology and readers, this study will find out the characteristics of fan fiction which is exist through technology enjoyed by the readers and furthermore explaining the reason of how fan fiction becomes popular among young generation. Qualitative research methodology will formulate the simple numeric data from a collection of analysis about fan fiction done by students of English Department who take class of Introduction to Literature. Complex calculation from the data taken is not the target of this study yet. Presenting qualitative statement will give a lot more meaningful understanding. Working out with qualitative data selection will direct the study explaining the characteristics of fan fiction and the reason of fan fiction become very popular. A brief explanation about what fan fiction, postmodernism, and literacy are, will clarify the focus of this study. Further activities of doing analysis towards fan fiction, the students are suggested to write fan fiction in order comprehending the topic discussion and developing the skills of the students.

### Discussion

Jamison tries to define fan fiction as a form of literary works (writing) which produce continually, occasionally, or just a kind of fad of the enjoyer. The works are open for any stories which character is from other people who has inspired in canonical texts and has been enjoyed by many people [1] [2]. Some of its literary works are the Harry Potter books and films or the television program Supernatural [3]. The authors of fan fiction usually create a new story which still have the kind of elements constructing the storyline. Furthermore they upload it into a certain online community [4]. Receiving in vary a response which can be positive or negative, the authors may build collaboration with the readers then this may be another stories [4] [5]. This kind activity, work together or joint collaborating in writing stories may give possibility developing a nuanced and contextualized understanding of the social, literate, and meaning-making practices which are bounded them into a community [5]. Even the author, reader, and publisher are strange one to another, but they are connected through the story. A story by an author was enjoyed and inspired the reader to write another story which elements of it borrow from the original story. Then the reader build a new story and upload it to a certain site. This new story may be as a response from the reader towards the original story.

The fan fiction that has been read by the students shows some characteristics of postmodernism fiction. Data taken from analyzing a fan fiction based on the intrinsic elements. In a fan fiction entitled *When I Meet You in summer* by Dartheart shows that the plot does not arrange well, based on the chronological order of the event. Moreover the reader gets confuse to the story because of the plot which seem incomplete. Another fan fiction, *Angels Don't Cry* by Baby Namja shows the same confusing idea in some parts of the story. The story is failed in describing some aspects of the story, such as the characters and settings that it makes the readers cannot easily get the points or the messages which are delivered by the author. The setting is being applied but it is not a good choices of time signals therefore the reader gets lost in getting the meaning of the moment. Some dictions are not suitable, and the author often uses improper vivid adjectives indicating that hyperbola often occurs in his writing, especially in his description of some things. These two points from the result of the story analysis shows that there is a weakness of fan fiction. However this weaknesses is part of the aspect that will emerge in creating a new story from other characters or stories.

The 'new' story has been wrote successfully by the fans. Giving a 'new' spirit to a story is part of the characteristics of postmodernism fiction since it is not the real story (original story). Postmodern calls it as sign or something borrowing and pastiche [6]. The unreal part of the story may be come the plots and situations which is from the reader's own creation, but the characters belong to somebody else and are being borrowed. Trends often appear over periods of time with fanfiction, for example, lots of short stories based on a particular episode after it airs; it is often the case when this happens that writers borrow basic ideas from those before them. As Lewis said that Science-fiction is another popular source for postmodernist pastiche. Some critics assert that it is the natural companion to postmodernist writing, because of their shared ontological occupations [7].

Presenting the new story from the same elements will give an opportunity to the disruption past experience and corruption to the present too [8]. Linda Hutcheon in Lewis emphasize that postmodernist writing gives its best representations of works which contain 'historiographic metafiction' that on it there is a self-consciously distort history. Coover in Lewis adds, 'history does not repeat... there are no precognitions- and out in that flow all such assertions may be true, false, inconsequential, or all at the same time' [9]. *Am I Wrong?* by Lisbeth14, *Housemate* by Teawithmochi, *Review May Alone* by Tabitha, and *Young Harry Potter - The DREAM* by Sophia Stewart are fan fiction which stories are presented combination between past and future experiences. Something happened in the past may be valued as history of events.

Fragmentation, looseness of association, paranoia, and vicious circles are the other characteristics of postmodern fiction which could not be detected clearly from 45 titles of fan fiction. The wide range of diversity of kinds, types, and titles of fan fiction may support the idea that identifying the detail characteristics of each story is difficult and complex task to be finished. However, the finding that some titles are part of postmodern fiction is undebatable anymore.

Studying postmodern fiction from some titles of stories is not the only way can be investigated. They are closely related to the intrinsic elements of the story. The extrinsic elements of the story are the other factors which influence and give color to the existence of fan fiction story. The birth of fan fiction story in the online technology will be interpret widely by readers as an economic movement which can directs to the establishment canon even most of the fan fictions are from US and UK. Meanwhile the external representation is not the absolute reality, but internal reality becomes accessible through representations other than the physical. Lyotard argues that any art experimentation brings the reader beyond that can be seen. All of this can be seen in fanfiction; for example, in a fanfiction text, it is possible to see deeper levels to a canon character, their inner thoughts or reactions, in such a way as is impossible with the visual image alone. Fanfiction can humanize the characters more than the original portrayals do, and take the story further than the original creators, bound only by the writer's imagination. However, if one writer's ideas about a certain character do not fit in with someone else's, the response is hostility [10].

Fan fiction as a 'dialogic' stories is built through a continuous assimilation of everyday events contain past experiences. In metafiction, dialogic means that there is more than one voice,

therefore thoughts or ideas from characters are being welcomed and this is the same as the post modernism principal [11]. In fanfiction, there is hierarchy. Patriarchy is abandoned for individualism – anybody can make it if they try. In regards to fanfiction, this is true: where literature has a canon, fanfiction is a free-for-all. Anyone can be an author, just as anyone can read and respond to their work. There is something of a hierarchy present in fandom itself, but even this is exploded: the original creators lie at the top of the hierarchy, and the official novel-writers below them, with fanfiction writers at the bottom; however, the latter two are often inverted. Other than this, though, there is no given hierarchy to fanfiction; there is no precedence, for example, given to prose over poetry, nor novel over short story [12]. It can be seen already that fanfiction is definitely a post-modern genre.

Fan fiction have been discussed and being popular among youth who needs place to transfer their ideas and creativity. Science fiction provides an arena for imagining and thinking about the possibilities of the future. Science fiction reflects flexible, diverse, and holistic future consciousness expressed in a narrative and mythic form. A key challenge to science fiction is to envision what future conscious minds will be like [13]. The openness of fan fictions that they are free form, flexible, pretending its consistency (continuing the spirit of original fiction and writing another new one), keep real on its unreal, and belief to hierarchy; present an idea to develop students' skills through fan fiction. Since this study is being released, the class could do some innovative activities whether inside or outside the room. Firstly, students are directed to write fan fiction creatively with a guided activities at once use fan fiction as the learning source in understanding the content and context through reading. Reading literary works may involve various kinds of activities, such as creative reading and literacy development [14] [15] [16] [17]. The next innovation is promoting students through their fan fiction commercializing it as what FanLib does [18]. This will be able giving a lot of benefit material and immaterial.

## Conclusion

Freedom as one of the term that close to fanfiction is real. Fanfictions that have been enjoyed by students showing two clear characteristics as a postmodern fiction; temporal disorder and pastiche. However, another aspects such as economic perspective, hierarchy, being real and unreal; support the previous and enrich the color of postmodern fiction. Presenting a lot of possibilities in developing the students' skills, some activities need to be done together in or out of the class. Creative reading activities, writing fanfiction, publishing online to commercializing it worldwide will be interesting and challenging among students and teachers.

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## Developing Virtual Test as Alternative Assessment for Measure Student' Science Literacy

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### ABSTRACT

This research is motivated by the low achievement scientific literacy of Indonesia students'. One of the efforts is implementing a virtual test as a assessment based frame work PISA to assess students' science literacy skills supported by the guided inquiry learning model computer-aided simulation. The research objective is to obtain a set of virtual-based assessment tool to assess the student' science literacy. The method of the research is Research and Development (R & D) with the instruments are construct validity sheet, questionnaires, and virtual-based set of questions to gauge students' science literacy skills. Data obtained during the assessment process for the interaction organism with their environment obtained from junior high school students (42 students). Result of this study are describe about characteristic of virtual test to measure science literacy was made by three aspect competency of science literacy that developed by PISA; complete by relevant information; and have validity and reliability more than "enough". Student respons to virtual test; 95% student are interested in virtual test and getting them to do the task well. Specific characteristic of multiple choices to measure science literacy are information in form table, figure, article, video, and virtual laboratory.

**Keywords:** scientific literacy, virtual test, guided inquiry learning model

### INTRODUCTION

Many test experts are exploring the possibility of transitioning from a paper and pencil mode of test administration to a computer based test (CBT) mode or Computer Based Assessment (CBA) mode. In recent years, computer-based testing (CBT) has grown in popularity and will likely become the primary mode for delivering tests in the future.<sup>1</sup>In 2015 The PISA Field Trial Student Delivery System (SDS) is a self-contained set of applications for computer-based assessments (CBA) and student questionnaires.<sup>2</sup> Virtual test (student-centered software) is example of Computer-Based Assessment (CBA). Students work on assignments as usual, but their files were assessed by computer (paperless process).<sup>3</sup>

Science and technology education are in reality complex phenomena embedded in multifaceted, intense, and complicated educational contexts. The philosophies of science are fact, concept, principle, theory, and law. Science processes are way to get, to develop and to apply knowledge that included effort way, thinking way, problem solving and attitude. So that, science has formulate systematically, especially based on observation, experiment, and induction. <sup>4</sup> An understanding of science and technology is central to a young person's preparedness for life in

modern society. Science and technology related issues confront individuals at personal, community, national and even global levels.<sup>5</sup>

The National Research Council (1996) said: “Scientific literacy has different degrees and forms; it expands and deepens over a lifetime, not just during the years in school. But the attitudes and values established toward science in the early years will shape a person’s development of scientific literacy as an adult. Student with less developed scientific literacy might be able to recall simple scientific factual knowledge and to use common scientific knowledge in drawing or evaluating conclusions. A student with more developed scientific literacy will demonstrate the ability to create and use conceptual models to make predictions and give explanations, analyse scientific investigations, relate data as evidence, evaluate alternative explanations of the same phenomena, and communicate conclusions with precision.”<sup>6</sup>

Science Literacy not only can develop in learning activity but also should support by evaluation or test, because evaluation or test is part to include in learning at the class.<sup>7</sup> Nowadays, One problem in testing is test item not focus on important thing that should to measure.<sup>8</sup> Test item not guide student to explore their science literacy. The test does this by requiring evidence of the successful use of science knowledge and skills in important situations reflecting the world.

In this paper we describe the developing virtual test as alternative assessment for measuring science literacy skill on interaction of organisms with their environment. The process of creating equivalent items (families) is presented. The results of items’ analysis are given and a set of rules that refine the whole process is mentioned.

## RESEARCH METHODOLOGY

Method of this study is Research and Development (R&D) adopted by Thiagarajan such as, define, design, develop and disseminate.<sup>9</sup> Aim of this study is to analyze result of virtual test development on interaction living thing and environment. Instruments to collect data are construct validity sheet, questionnaire, and multiple choices that representative by frame work PISA 2006 to measure science literacy skill. There are demonstrating scientific competencies that include identifying scientific issues, explaining phenomena scientifically, and using scientific evidence.

## RESULTS AND DISCUSSION

Result of this study are describe about characteristic of virtual test that use to measure student’s science literacy on interaction of organisms with their environment, analyze result of questionnaire, analyze result of expert judgment by science teachers, analyze result of limitation test about virtual test at Junior High School.

### Characteristics of Virtual Test On Interaction of Organism with Their Environment

The first step in this study was analyzed of science content, library construct about multiple choices, science literacy and virtual test. Furthermore, design layout of research instrument (virtual test). Virtual test made by Adobe Flash Player 9 software. Figure 1 shows opening slide of virtual test. The opening slide consist of title “*Fun Quiz Ekosistem*” and student identity (name and class). Next slide show researcher identity and research team. Moreover, slide complete by “*zoom out*”, “*cancel (x)*” and “*start*”.



Figure 1. opening slide of virtual test

The main characteristic in this virtual test is the question completed by different type of information. Furthermore, the virtual test in form, animation, graphic, virtual lab, video, combine between picture and article as shows in Figure 2.

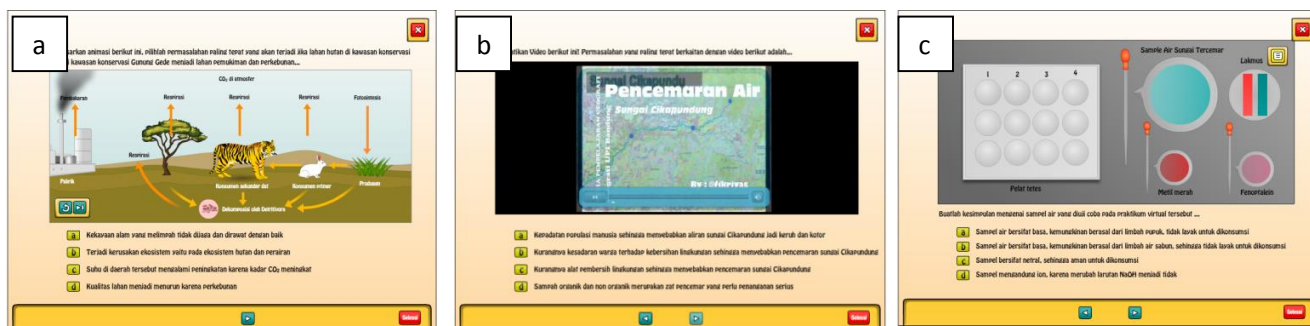


Figure 2. Virtual test in form: (a) animation (b) video (c) virtual lab

### Analyze of Trial Test

Virtual test consists of 30 questions of multiple choices. Trial test has been conducted by 42 students. Results has been analyzed by AnatesV4 program and show that reliability of test is 0,77. Moreover, there are three categories: accepted, accepted and revision, and rejected. Accepted category has positive correlation with meaning are significance and very significance, accepted and revision has been positive correlation but meaning less than significance, and rejected has been negative correlation. Recapitulation of question category as show in Table 1.

Tabel 1. Recapitulation category base on trial test

Question	Question Category		
	Accepted	Accepted and Revision	Rejected
Virtual test	13	12	5

Some aspects of the virtual test criteria in exposing the students' science literacy skills is appropriate and feasible for use in the pilot phase of the study. Suitability obtained from the judgment of which include: instructions for using the virtual test is appropriate, already have navigation that is easy and suitable for use by students. The main environmental support



includes: 1 ) computer , 2 ) soft ware customized virtual test to assess students' science literacy skills and 3 ) the teacher in charge inspect , monitor and provide feedback to the students.

### Student Response to Virtual Test

The results of student responses are presented in the figure 3

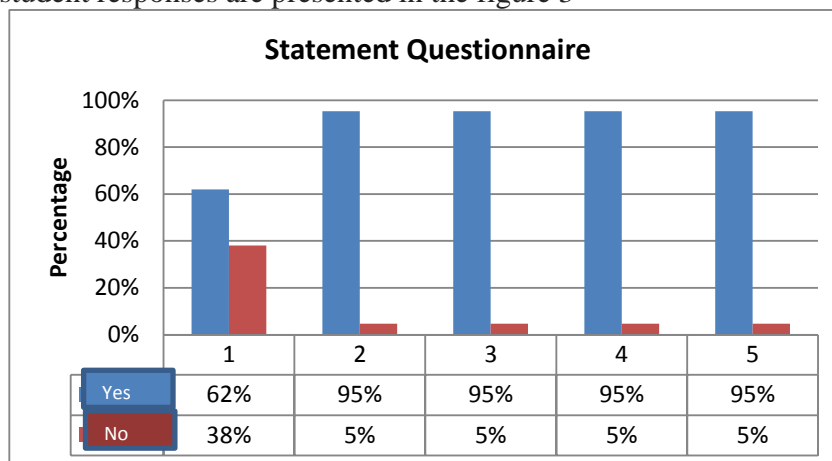


Figure 3. Student Responses to Virtual Test

Description : ( 1 ) a virtual test is a new thing , ( 2 ) the interest of students to virtual test , ( 3 ) a virtual test push workmanship good job , ( 4 ) virtual test makes students motivated , ( 5 ) a virtual test increases the desire to learn

### CONCLUSION

Virtual test that was developed has the following characteristics: a) load test virtual features that can develop student science literacy b ) student centered ; c ) be able to monitor the progress of student learning. Virtual test can reveal the student science literacy. Students respond positively to the implementation of virtual test in assessing the scientific attitude and mastery of concepts , although in practice still has its limitations.

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# “Enemies” at Our Home: The Threat to Indigenous Languages Seen from Language Use

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## **ABSTRACT**

English as the world lingua franca is not deniable. It bridges the communication gap among people from different origins. Its position is staggeringly strong when the regional and global issues are pronounced. Does it give impact to indigenous languages? This study aims to: describe the use of English in community; reveal the use of indigenous language among children; and provide a proposition to the indigenous language survival. This is a case study which takes place in Surabaya and applies observation and documentation to obtain the data. The findings show that English has been massively used in community with or without consciousness in various linguistic levels. On the other hand, children seem not to use Javanese as their native language for their literacy. They tend to use the national language instead. To maintain the regional language, restructuring curriculum is one of the urgent concerns. This should cover the formulation of language skill competencies which are accompanied by material adjustment; and are supported by the application of appropriate teaching techniques. When the current trends promote the national and international languages, yet no much attention is given to the indigenous languages; it is like inviting enemies to assassinate our relatives.

**Keyword:** *indigenous language, regional language, language survival, lingua franca, literacy*

## 1 Introduction

Following streets and roads in Surabaya, it cannot be avoided that English blankets all spaces. Regardless of the size and form, it is used for name of buildings, advertisements, banners, direction signs, and many more. When they are not in English, they are displayed in Indonesian. It is hardly found that those properties are in Javanese. This is a paradoxical situation where the majority of population in Surabaya is Javanese.

Another phenomenon is that children in Surabaya were born in digital era. It is not strange anymore that the children have their own gadget. They can access everything beyond the limit. It cannot be denied that they may develop their literacy in English and Indonesian. In this modern device, indigenous languages, including Javanese, seems not to have space. The position of Javanese is marginalized.

The study related to the children's language in Surabaya has been conducted. Setiawan (2001) found that Javanese had been decreasing in use among Surabayanese including their children. He also revealed that generational transmission in language is not successful or is not consciously planned (Setiawan, 2009). Thus, it is not surprising that parents still master two languages well but their children. The children's language ability in Javanese is not as good as their parents. Following Li (2000), such children in relation to the status of bilingual is called dominant bilingual: children who have greater proficiency in Indonesian language and who use it significantly more than Javanese, their ethnic other language.

It seems that this is a reflection that English and Indonesian has taken almost all domains which used to be Javanese. Does it give impact to Javanese languages? This study aims to: describe the use of English in community; reveal the use of Javanese language among children, and provide a proposition to the Javanese survival.

This paper covers introduction for the first section and is followed by theoretical framework. The third section is a brief description of the method, and discussion is in the fourth section. The last one is the conclusion.

## 2 Theoretical Framework

This section addresses the discussion on the three points: language domain, language contact, and impact of individual bilingualism.

### 2.1 Language Domain

In a bilingual or a multilingual community setting, the competition of language use over domains is unavoidable. Knowing what language is used in what domains helps to understand to what extent a given language may survive, particularly when minority languages are the issue. Appel & Muysken (1987:41) claims that “the majority language seems to conquer domain after domain via the intermediate stage of bilingual language use” (see further section 2.2). Linguistic situation in Surabaya is close to this indication in which Javanese is pushed away by both Indonesian and English. They grow bigger whereas Javanese is getting smaller and in some domains this ethnic language among Surabayanese is not used any longer.

In relation to language domain, this suggests that the fewer domains a language has, the weaker that language will be. Under such circumstances, the process of language shift is underway. Fasold (1984) in Govindasamy and Nambiar (2003:31) says that “when a speech community starts employing a new language in domains previously reserved for the old one, language shift is in progress”. For example, Premrirat (2007:80) reported that Standard Thai as the national language has conquered strategic domains, namely schools, government offices and the mass media. As a result, shifting language to Standard Thai is unavoidable. A similar case is reported by D’Arcy (2010:61), “there are relatively few domains in which the Maori language is commonly used”.

Engineering domains, on the other hand, can be used as a way to reverse language shift. In a study on Welsh conducted by Lewis (2008:73), it is revealed that the school, as the frontier of the education system “has become the basis of reversing language shift with respect to the Welsh language in Wales”. The language is used as the medium and is practiced in bilingual education across Wales. Coulmas (2004) as in Extra and Yagmur (2005:18) states that “Schools are where language regimes and their social effects are most in evidence and where it is most obvious that a language regime bears on both structure and use”. Mateo (2005:21) states that the education system is the way to pass down Basque successfully from one generation to the next. Can new domain be created to accommodate the use of Javanese in Surabaya which is claimed to be metropolitan city?

Many studies reveal that the home domain is a crucial factor in terms of language maintenance and shift. This implies that losing language in this domain is a warning signal of losing the language. Spolsky (2003:559) reports for New Zealand that in most North Island communities, a majority of Maori adults were able to speak and understand the language. However, in areas where Maori were a majority, English tended to be used in the home domain, particularly with and among children. This is an indication that language was losing its place in Maori ethnic identity. Similar evidence is found in Central Maluku. Musgrave (2006:13) is very pessimistic about the future of the local languages in this region, in that the use of local languages in the home has all but ceased. The home domain is where the indigenous language is usually engaged by the ethno linguistic group. Edwards (1997:34) agrees that the home domain is the most important of all language domains. Also Jaspaert & Kroon (1991) and Holmes et al. (1993:15) claim that one of the important factors that contribute to language maintenance is the use of the ethnic language in the home domain. Dorian (1981:105) in Govindasamy and Nambiar (2003:31) says that the “home is the last bastion of a subordinate language in competition with a dominant language of wider currency”. That is why the title of this paper employs the word “enemy” to reflect so as to whether any language other than Javanese used in the home domain by Surabayanese families.

## 2.2 Language Contact

Note that the language contact situation in Indonesia is somewhat unusual. It has occurred because of the extensive language planning and policy for the sake of national unity and stability of a new state. People who predominantly speak their ethnic language are being ‘forced’ to speak the national language, Indonesian. The trend is for increasing numbers of Indonesian speakers but decreasing numbers of ethnic language speakers. As a result, the decline and even the extinction of ethnic or local languages can be seen everywhere.

In line with the above explanation, Grosjean (1982:36) explains that two possible consequences of language in contact are prolonged or stable bilingualism and return to monolinguals. The latter has three scenarios: two of them are the same as in Fishman’s (2000) and Wardhaugh’s (1982) suggestion: language maintenance and shift. In short, there are three possible outcomes of language contact:

Stable bilingualism	: $B \rightarrow A = A + B$
Language Maintenance	: $B \rightarrow A = A$
Language shift/loss	: $B \rightarrow A = B$

*Prolonged or stable bilingualism:* The situation in which bilingualism is maintained within the group for a long period of time. This requires speakers of two languages to accommodate other

members of speech communities using either one or both languages. Many studies have been done in relation to this matter in immigrant communities, post-colonial countries and within new nationalities.

Even though the stable bilingualism is exceedingly rare, some examples can be found, such as in Belgium, Canada and Switzerland. They appear destined to have long-term bilingualism. This kind of bilingualism can lead to new linguistic behaviors or situations: “code-switching” or “code-mixing” (Fishman 1989; Wardhaugh 1986) and “diglossia” (Ferguson 2000).

*Language maintenance:* This outcome describes language contact in which the community keeps using their indigenous language and intrusive language disappears. An example of language maintenance can be found in Yiddish in New York. Even though Yiddish overall has weak Ethnolinguistic Vitality, it has strong Subjective Ethno linguistic Vitality. Romaine (2004:160) quotes Fishman’s report that Yiddish in New York was found to be a fascinating and perhaps uniquely intrusive opportunity to examine the fate of a language that lives in two contrasting social settings: ultraorthodox and secularists.

*Language shift:* This situation describes the outcome of language contact where the indigenous language is lost and the intrusive language becomes the dominant. Evidence of this situation is found in Quichua. Haboud’s study (2004) in this language communities found that language shift or even language endangerment is affected not only by the number of speakers but other factors. She argued that although Quichua (Quechua) is still the native language of more than eight million people in the Andes, it is clearly endangered. The reason is that there were many discrepancies across speakers’ beliefs, attitudes, and practices regarding Quichua.

### 2.3 Individual bilingualism and its outcomes

There are many definitions, types of individual bilingualism as well as its outcomes. What type of bilingual best describes Surabayanese children? As the word ‘bilingual’ primarily describes someone with the possession of two languages (Li, 2000, p. 7) no matter the degree of mastery and by Romaine’s proposal (1995:10) with her label of ‘minimal definition of bilingualism’. Even though Li (2000) presents 37 terms to describe the outcome of individual bilingualism (see further Li (2000, pp. 6-7 for the complete list), Surabayanese children of this study may fall into one of the categories listed based on their time of the acquisition and level of their proficiency, as presented in Tables 1 and 2 respectively.

Table 1: Individual bilingual outcome based on when acquiring languages

PHASE	TYPE OF BILINGUAL	DESCRIPTION
1	simultaneous bilingual	Someone whose two languages are present from the onset of speech.
2	early bilingual	Someone who has acquired two languages early in childhood.
3	successive bilingual	Someone whose second language is added at some

		stage after the first has begun to develop.
4	secondary bilingual	Someone whose second language has been added to a first language via instruction.
5	incipient bilingual	Someone who is at the early stages of bilingualism where one language is not fully developed.

Table 2: Individual bilingual outcome based on proficiency

LEVEL	TYPE OF BILINGUAL	DESCRIPTION
1	balanced bilingual	Someone whose mastery of two languages is roughly equivalent.
2	dominant bilingual	Someone with greater proficiency in one of his or her languages and who uses it significantly more than the other language(s).
3	asymmetrical bilingual	Someone who understands either first or second languages, in either its spoken or written form, or both, but does not necessarily speak or write it.
4	recessive bilingual	Someone who begins to feel some difficulty in either understanding or expressing him or herself with ease in either first or second language, due to lack of use.
5	minimal bilingual	Someone with only a few words and phrases in either first or second languages.

This study focuses on Javanese children's language in Surabaya. The possible outcomes of their developing language proficiency in Javanese and Indonesian may fall into particular categories, as listed in Table 2. The possible outcomes of developing individual bilingualism are put on the continuum in 'balanced bilingual' is on one end (Level 1) and the 'minimal bilingual' is on the other end (Level 5). In between, there are 'dominant', 'asymmetrical' and 'recessive' bilinguals.

### 3 Method

Qualitative method with observation and documentation was employed to obtain the data. The first issue of this study used observation to reveal the use of English in public places. In addition, documentation was used to gain data of language used among Javanese people at present time via social media. The second and the third issues used relevant documentations, mainly academic references and documentations of children's language in Surabaya and other related issues.

### 4 Discussion

#### 4.1 Use of English and Indonesian in Community

##### 1) Street Furniture and Advertisements

As mentioned in the introduction section, English and Indonesian are massively used on street furniture. This term refers to equipment such as lights, road signs and telephone boxes that is positioned at the side of a road for use by the public. The following in (01), (02) and (3) are examples of the English use in Surabaya.

- (01) CITO = City of Tomorrow
- (02) Somerset Surabaya Hotel
- (03) House of Sampoerna

These two examples represent hotels, malls, and museums that use English for their brands. Beside English, Indonesian language is used, as in (04) and (05).

- (04) Hotel Arjuna Indah
- (05) Hotel Delta Permai

Sign posting in hotels and airport in Surabaya also used English.

- (06) EXIT
- (07) PULL and PUSH
- (08) RECEPTIONIST

English and Indonesian are used in the following signs.

- (09) Departure = Keberangkatan
- (10) Arrival = Kedatangan

English is used on banners and billboards.

- (11) Join us!
- (12) Your satisfaction is our commitment.

The above displays are only a few examples of English and Indonesian use in the public domain. This implies that Surabayanese children experience English and Indonesian exposures in all corners of the city. The more frequent children got the exposures in English and Indonesian, the easier they recall them in the later time. On the other hand, they are not able to recall the language that is not used for the exposures on the street furniture. They are able to say Kentucky Fried Chicken easier than Ayam Goreng Suharti, as the instances.

## 2) Mass Media and Modern Gadget

Mass media plays important role in spreading as well as maintaining language. All media use Indonesian and keep borrowing mostly English words into Indonesian. On the contrary, coining from regional languages is not the trend anymore. As a result, Indonesian language is much closer to the English language than to regional languages. Indonesian original and regional words fade away as they are not frequently used.

- (13)
 

sasaran	= target	: target
angkutan	= transportasi	: transportation
istilah	= terminologi	: terminology
rundingan	= diskusi	: discussion
kegirangan	=uforia	: euphoria



Modern gadget spreads like tidal waves which cannot be stopped. Regardless of the age people use them handy in their daily lives. Mobile phone provides applications that allow people to practice their language skills. They exchange messages and surely language is used. English use has penetrated the all users and locations. Old Javanese who live in village have used English without their consciousness. Study the data below.

(14)

roaming	error
pending	charge
cancel	connect
send	low bat (battery)

In relation to the information technology which uses laptop, for example, the use of English is not deniable.

(15)

copy	file
paste	recycle bin
save	insert
undo	enter

These phenomena are sign that, once again, people get used to having English exposures every day. Yet, Javanese is no place to appear.

## 4.2 Children's Language

### 1) Home Language

This section discusses issues on language use in the home domain or home language. The term is defined by Coulmas (2005:234) as "The language most commonly used in the family." Richard Nordquist (2010)<sup>1</sup> proposes a similar description "The language (or the variety of a language) that is most commonly spoken by the members of a family for everyday interactions at home".

Even though there is no indication that parents impose rule of home language, there are parents who implicitly urge their children to use a certain language in in the home domain. Why Indonesian, not Javanese, is used in the home domain by Javanese families is the diverse composition of society, as in (16) below. Indonesian is seen as the only language that is able to bridge the barrier of inter-ethnic communication. Therefore, parents often consider that Indonesian should be taught to their children from an early age.

(16)

C13 *Bagi kami keluarga Jawa tetapi di negara* We are a Javanese family, but our

<sup>1</sup> The definition is from Richard Nordquist. Home language. Accessed on 14 November 2010 on <http://grammar.about.com/od/fh/g/homelanguageterm.htm>

*kita beraneka suku dan bahasa yang dipakai bahasa Indonesia alangkah baiknya kita ajarkan dengan bahasa Indonesia agar sesama bangsa kita menyambung apa yang dibicarakan.*

country has diverse ethnicities for which Indonesian is chosen to be used, it's better to teach Indonesian to our children in order that there is no barrier during inter-ethnic communication.

Another interesting view is that the use of Javanese is avoided due to the poor knowledge of it, as seen in (17) below. These parents appear to give up when they have little ability in Javanese and to shift to Indonesian. This suggests that their view contradicts with their ethnicity. As Javanese, they should put in some efforts to maintain Javanese as a symbol of identity: the identity that is intrinsically bound up with the ethnic sense of self. In this respect Burck (2008, p. 148) clarifies that "Another dimension of language use within families concerned the ways in which language speaking was signified in the construction of identities".

(17)

C36 ... *bahasa Jawa tidak harus digunakan dalam sebuah keluarga jika keluarga tersebut memiliki pengetahuan yang minim tentang bahasa Jawa.*

...Javanese does not have to be used in a family if they have poor knowledge of Javanese.

Another Surabayanese parents' view on the use of Indonesian is based on the communication and language status reasons, as in (18) and (19). Some city parents' agreement with the use of Indonesian among Javanese family is based on the different frequency and functional distribution of the two languages in communication. In (18), they say that Javanese is seldom used. Indonesian, on the other hand, is always used particularly in in the workplace.

(18)

C30 *Sangat setuju sekali, karena bahasa Jawa hanya dipakai jarang-jarang sedangkan bahasa Indonesia akan digunakan sampai dalam lingkup kerja.*

I do agree with that because Javanese is seldom used whereas Indonesian will be used in the workplace.

Some other parents in this category are in support of using Indonesian as a Javanese family's home language due to its status. They argue, as in (19) that Indonesian people, including Javanese, who use Indonesian language to perform daily activities, are doing something natural because it is the national language. This view might suggest that some city parents consider that national interest is more important than ethnicity. Losing ethnic identity is not so serious given the potential benefits of Indonesian as the unifying national language. This also suggests that these kinds of parents, regardless of where they live, and what their ethnic and language background are, contribute to the language shift from the ethnic language to Indonesian. Blum (2005:151) emphasizes that "Nationalism in many places in the world is bound up with language" including Indonesia.

(19)

C03 *Setuju aja, karena bahasa Indonesia juga merupakan bahasa nasional dan tidak ada salahnya orang Indonesia*

I agree with that because Indonesian is the national language and there's nothing wrong with Indonesian people

*menggunakan bahasa Indonesia untuk* using it for daily communication.  
*berbahasa sehari-hari.*

As a result, it is not surprising that Surabayanese children’s report of the language is somewhat shocking. Most of them reported that they used Indonesian to all members of the family including the extended relatives: parents, siblings, grandparents as well as maids (see the shaded column). The findings suggest that Javanese, among most Javanese families in Surabaya, is not transmitted naturally to children and is no longer used for their communication in the home domain.

Table 3: Summary of reported Surabayanese children’s language use in the home domain

NO	SOCIAL NETWORK		SURABAYA			SUM
			JAVANESE	INDONESIAN	BOTH	
1	PARENTS	N	6	11	7	24
		%	25	46	29	100
2	SIBLINGS	N	9	12	3	24
		%	38	50	12	100
3	GRANDPARENTS	N	10	13	1	24
		%	42	54	4	100
4	MAIDS	N	8	13	3	24
		%	33	54	13	100

2) Language

Proficiency

As there is no habituation of using Javanese at the home domain, children language proficiency in Javanese language is not as good as Indonesian. This is worsened by the fact that the material learned at school does not support the language used by Surabayanese society. They were taught Javanese which is used by people in Central Java.

Setiawan (2013) found that at school Surabayanese children mostly used Indonesian although the subject was Javanese. They got difficulty in understanding Javanese words, particularly *karma inggil* and may have used Indonesian to fill the gap or may have switched entirely to Indonesian as neutral code to avoid speech levels. Setiawan (2013) reported that children often used Indonesian words in their Javanese speech such as *disingkat* instead of *dicekak* “be shortened”, *lebih* instead of *luwih* “more than”, *empat puluh* instead of *petang puluh* “forty” and many others. These simple words are in daily use and children should be able to use them. On other occasions, on the other hand, they often asked questions related to Javanese words they did not understand such as in (20) and (21) below. Students in (20) and (21) did not understand the Javanese words *pacelathon* “conversation” and *unggah-ungguh* “language etiquette”.

(20)

S : Pak, pacelathon iku apa pak?

S : Sir, what does pacelathon “conversation” mean?

(21)

S : Pak, unggah-unnguh iku apa?

S : Sir, what does unggah-ungguh “language etiquette” mean?

The switching into Indonesian was done when children did not feel confident to communicate in Javanese because of their lack of vocabulary. This was evidenced by observation. Students were sharing stories during the recess. Almost always their stories were told in Indonesian and the reason for using Indonesian was revealed during interview as presented in (22) below.

(22)

*T : Mengapa kamu cerita itu pakai bahasa Indonesia, tidak Jawa?*

T : Why did you tell the story in Indonesian not in Javanese?

*S : Bingung Pak kalau pakai Jawa. Kalau saya bingung, saya pakai bahasa Indonesia.*

S : I am confused if I use Javanese. When I feel confused, I use Indonesian.

Students described being confused when using Javanese as their vocabulary was limited. In fact, not only were children confused using Javanese, adults also experienced the same difficulty in manipulating speech levels causing them to switch to Indonesian. This confirms findings by Peodjosoedarmo (2006:117) who says, "... many people, aware that they are not very competent at manipulating the levels, simply use the Indonesian language instead of Javanese in contexts where it is necessary to be formal and polite." (Setiawan, 2013).

To examine further Surabayanese children's proficiency in Javanese, they were given some sentences to be translated. The result, as predicted, was not satisfactory

(23)

(a) *Bapak ngrawuhi undangan dateng bale dusun.*

Dad to attend a function at village office  
'Dad is attending a function at the village office'

(b) Correct translation:

*Bapak mendatangi undangan di balai desa.*

The example of the children's correct translation is in (24) below which is the same as the given translation in (23b). The children whose work is correct are presumably able to understand the Javanese word *ngrawuhi* 'to attend' very well. Therefore, they could choose the Indonesian word *mendatangi* properly.

(24)

V05 *Bapak mendatangi undangan di balai desa.*

The source of the difficulty in translating the first Javanese sentence can be detected from the ungrammatical Indonesian sentences below in (25a) and (25b). Both sentences hold different meanings from the intended one because most children failed to grasp the meaning of the Javanese word *ngrawuhi* 'to attend'. They translated the word into *mengantarkan* 'to send' as in (25a) or *memberi* 'to give' as in (25b). This might suggest that Javanese children were not able to understand

*krama* words although they are simple and frequently used, such as in the greeting *sugeng rawuh* ‘welcome’ or *selamat datang* in Indonesian.

(25)

- (a) V03 \**Bapak mengantarkan undangan dari balai desa.*  
*Dad to send invitation from village office*  
*‘Dad is delivering the invitation from the village office’*
- (b) C12 \**Bapak memberi undangan dari balai dusun.*  
*Dad to give invitation from village office*  
*‘Dad is giving the invitation from the village office’*

The above discussion is the use of Javanese among children in Surabaya. The following is some evidence of the use of it in society. Some of Javanese people do not have much knowledge how to use speech levels properly. They often get confused to distinguish between *rawuh* and *sowan*, *maringi* and *ngaturi*, *wangsul* and *kundur*, *karma* that means married and *karma* that refers the refine Javanese speech level *karma inggil*, and many more. The following dialogue is evidence.

(26)

Setting : On Sri Tanjung train Jember – Jombang  
 Participants : a man around middle age  
 a young Javanese woman about thirty

- A : *Sampun krama. Mbak?* Are you married, Mbak?  
 B : *Inggih sekedhik-sekedhik.* Yes, a little.  
 A : *???* ???  
 A : *Ngapunten, .... penjenengan sampun krama?* Sorry, ..... are you married?  
 B : *(senyum) Inggih Pak, .... sekedhi-sekedhik* (smiling) Yes Bapak, ..... a little.

*Krama* that is meant by A is ‘married’ or ‘get married’ to know her marital status. However, B’s perception is *krama inggil*. The B’s failure to understand A’s question is simply because B may have not much knowledge of Javanese.

### 3) Language of Literacy

Literacy obviously deals with two language skills: reading and writing. Javanese seems not to be the favored medium of writing communication anymore. Almost all mass media use Indonesian. Nowadays, English is also used for this purpose starting from the level of word, phrase, sentence, and paragraph and longer text. This issue has been addressed in section 4.1. Only two magazines that have survived so far, *Penyobar Semangat* and *Joyo Boyo*. The readers of these are those who are older Javanese generation. Presumably, these magazines are not younger generation’s favorite genre in this era.

To ascertain children’s reading habits, Setiawan (2013) run a survey of reading habit for Javanese children. They were asked to list titles of Javanese and Indonesian stories they had read. The result of their list is presented in Table 2. Surprisingly, most children (89%) had read fewer than four

Javanese stories; and only 11% of them had read four or more Javanese stories. These situations are the opposite from their list for Indonesian stories. Most of the children (85%) had read at least four or more Indonesian story books. This unbalanced reading habit between Javanese and Indonesian might influence their proficiency and thus, it may also influence their preference.

Table 4: Number of story books read by children

Language	Fewer than 4	4 or more
Javanese	89%	11%
Indonesian	15%	85%

The evidence that Javanese is no longer the favored medium for writing is reported by Setiawan (2009). It was found that children use Indonesian to write a message for all interlocutors. This may suggest that Javanese is not the language for Javanese children’s literacy.

Not only children, adult Javanese speakers show that they do not have sufficient Javanese grammar. This phenomenon can be found when they write things using SMS via their mobile phone. The following is the evidence.

(27)

- IA : *Kalau yg jual mbak2 saya ambil wes, apalagi kalau manis* If the sellers are young girls, I’ll buy it. Even better if the sellers are young sweet ones.
- Cm : *Opo seng dituku?* What will you buy?

Conversation in (12) contains misspelling on words *wes* and *seng*. Respectively they should be written *wis* and *sing*.

Similar errors are found in the following dialogs. The wrong spelling is found in *tibake*, *iseh*, *sugeh*, and *suwon*. These can be acceptable for Javanese grammar when written into *tibakke*, *isih*, *sugih*, and *suwun*.

(28)

- DI : *tibake iseh* test operasional .... In fact, it’s only operational test...
- Cm : *tenang bro tantangane wong arep sugeh yo ngono kuwi* Calm down brother, this is only a challenge for someone who will be rich.
- G : *Suwon bu Las* Thanks, bu Las.

The note can be made from the above evidence is that Javanese people do not know a simple matter of their ethnic language, let alone the more complicated grammar. Study the following example in (29).

(29)

- Cm : *Coro jowone paling yo siap-siap.* In Javanese, it may mean get ready, right.

Javanese grammar prescribes that when a word has syllables which contain the same vowel /ɔ/ as in *randa* [rɔndɔ], *agama* [ʌgɔmɔ], *Jawa* [dʒɔwɔ], lara ‘ill’ [lɔrɔ] then has suffix [-ne] attached to it, the vowel /ɔ/ becomes [ʌ]. Therefore, the correct well-formed grammar should be *randa* [rʌndʌne], *agama* [ʌgʌmʌne], *Jawa* [dʒʌwʌne], lara ‘ill’ [lʌrʌne]. In fact, many Javanese people fail to apply this rule.

#### 4.3 Proposition to the language Survival

There two parts in this section as proposition to maintain Javanese language: live language and curriculum reform.

##### 1) Live Language

There are two views among linguists toward the language: prescriptive and descriptive. The former sees how language should be used; and the latter describes the existing language in a given community. Study the following expressions in different styles.

Table 5: Comparison between Javanese of the standard and the Surabaya dialect

1	Javanese Surabaya dialect	:	<i>Hei yo'opo kabare rek?</i>
2	Standard Javanese	:	<i>Piye kabare cah?</i>
3	Indonesian	:	<i>Apa kabar kawan?</i>
4	English	:	How are you pal?

In Surabaya, that people say *Hei yo'opo kabare rek?* for 'How are you pal?' is common and this is the marker of identity. Surabayanese will never say *Piye kabare cah?* for the same purpose. The latter is "not just right". This expression belongs to the standard Javanese spoken mainly in Central Java.

In fact, Javanese with Surabaya dialect is different from the standard one. The following is some examples of words of Javanese Surabaya Dialect and the standard one. The word *sanajan* 'although' and *mangkat*, for instances, are the standard Javanese form that are taught at any school where Javanese is part of the school curriculum. As a matter of fact, Surabaya people hardly ever use these words, let alone the younger generation. They use *masiyo* and *budhal* respectively instead.

Table 6: List of Javanese words spoken in Surabaya

Standard Javanese	Surabaya Dialect	Indonesian	English
nyilih	nyelang	meminjam	borrow
wis bar	wis mari	sudah selesai	over, be completed
wis mari	wis waras	sudah sembuh	recover
kanggo	gae	untuk	for
mengko	engkok	nanti	later
peso	lading	pisau	knife
sanajan	masiyo	meskipun	although
wuto	picek	buta	blind
badha	riyoyo	idul fitri	eid fitr
mangkat	budhal	berangkat	go, depart
nganggo	nggae	memakai, menggunakan	use, wear
mau	maeng	tadi	just now
diwarahi	diuruki	diajari	be taught
mati	matek	mati	dead
bayi	bayek	bayi	baby

tuwo	tuwek	tua	old
mung	mek	hanya	only

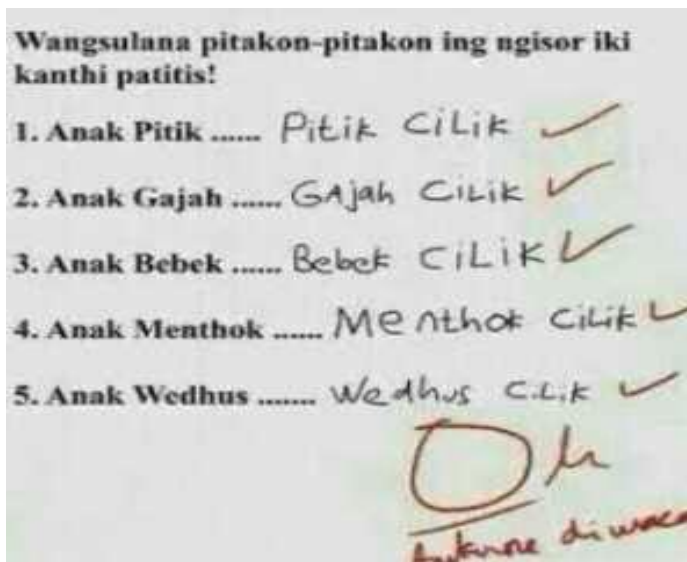
The evidence above implicates, following descriptivism, that Surabayanese children should be taught the language which is used in their daily life; the language where they live by; the language by which people communicate. When they learn language (dialect) of others, they get some problem and finally it causes confusion. He thought that they learn another language; alien language. As their confusion and language complication, they may use another language that is easier, simpler, and neutral: Indonesian. When this is the case, Javanese children will abandon their ethnic language.

2) Curriculum Reform

When the proposition described in 1) is agreed, the next bigger effort is curriculum reform. This means that everything related to the Javanese language teaching should be touched and evaluated. They are standard competency, material development, human resources, assessment, and also language teaching strategy.

The teaching-learning process so far has not been effective in transferring knowledge as well as triggering children to use Javanese in communication. The teaching and assessment focuses only on children’s knowledge which is lower order thinking; recalling memory. Study the following example.

(30)



There are at least two notes taken from the above excerpt. 1) The instruction is hard to understand among Javanese children in Surabaya. It can be predicted that Surabayanese children may get difficulty in understanding “strange” words: *wangsulana*, *kanthi*, *patitis*. They may understand them when they are changed into Surabaya dialect, respectively, *jawaben*, *sing*, *bener*. Surabayanese children, presumably, will understand easily when the instruction becomes *Jawaben pitakon-pitakon ndik nisor iki sing bener*. 2) The problem type demands the students to recall their memory. Yet, the



problem is not contextual. The teaching-learning process as well as assessment should be conducted contextually: focusing on the language skills. Children should perform dialogues in a particular setting, for example, visiting friends, receiving guests, asking and giving directions, etc. When these elements of reform are executed, it is positively predicted that Javanese is going to be survival.

## 5 Conclusion

English language has penetrated all aspects of life and its position is staggeringly strong when it is related to the global demand. Similarly, when national issue is put forward, Indonesian plays a key role as a bridge of linguistic barrier among ethnicities in archipelago. Its position is even greater when it relates to the government agenda: to be one unified country, Indonesia and its tool is Indonesian as unifying language.

Home domain is the true indicator whether indigenous or ethnic language is survival in the future. Home is a locust where language and cultural transmission across generation takes place. Home is a laboratory where language is practiced for communication among family members. Home is a primary battle site among languages and the great directors are parents. When the parents allow the second language or even the third language gets into the home domain, it certainly, sooner or later, is going to kill the indigenous or ethnic language. This is the same situation in which Javanese parents in Surabaya seem do not pay much attention to the survival of their ethnic language. This can be seen from their view toward Javanese, also from the children's language proficiency in Javanese and its use in the home domain.

The proposition made for the maintaining and reviving Javanese is to accept the reality that Javanese Surabaya dialect is different from one which is in Central Java. Thus, Surabayanese children should be taught language with community where they live use; not the one that is regarded alien language. Moreover, the acceptance of language diversity should be followed by curriculum reform which is designed in such a way that children are motivated to use language in practice.

Finally, it is worth thinking of what Dench and Setiawan (2011) suggest in relation to preserving language:

Each language is unique. It serves as the glue that binds together the community of its speakers, reflects their world view (of both the social and natural worlds), and in its words, stories, songs, and manner of ways of speaking, serves as the repository of the cultural, intellectual and artistic life of that community.

When parents fail to do language and culture transmissions to their young generation, no action is taken by the members of ethnicity to preserve their ethnic language, and families allow Indonesian and/or English to be the first language and be the language of communication at home, it can be predicted that indigenous languages, including Javanese, will die in the near future which is started from children's literacy.

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## EXPLORING STUDENTS' USE OF COMMUNICATION STRATEGIES

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### Abstract

One of the four communicative competences identified by Canale and Swain is strategic competence. This competence deals with how the speaker of a target language is able to overcome the problems of communication breakdown. Strategic competence can be actuated by the use of communication strategies. Communication strategies are tools which can be used when the language learners face a problem in their communication caused by lack of linguistic resources. The present research was conducted in order to analyze the communication strategies used by the students in the. The research was trying to find out the communication strategies used by the students, how the communication strategies help them in their communication and the reasons underlying their choices of the strategies in their spoken integrated class in the Integrated English class activities. The students who are taking major in English are one of those many people trying to understand English. In their study, they also learn how to communicate with others by using English whether in written or spoken. Based on Dornyei's typology of communication strategies, the students mostly used approximation as their strategy in coping with the communication problems. The students, for about 29%, still faced problems in choosing the right words, but they used the words which had the same semantic features with the desired item. Appeal for help (15%) and literal translation (13%) were the other two strategies used by the students. The use of message abandonment (5%) and code switching (4.2%) were not as much as the first three strategies. Topic avoidance, word coinage and use of all-purpose words were also rarely used by the students in their communication during the group presentation. Circumlocution and mime were the least used communication strategies by the students. The students stated that the communication strategies helped them to overcome their problems in maintaining the communication. The students chose the strategies for some factors, such as language anxiety, limited vocabulary and structure, shyness and worry of making mistakes.

**Keywords:** speaking class, communication strategy, types of communication strategies

### Introduction

English has been used as the language for books, newspapers, airports, international business, education, science and technology, seminars, conferences.

Graddol (1997:11) states that English used as international communication is increasing like in the professional discourse and higher education. It shows that English as the most used international language cannot be shaken or replaced by other language. It is undeniable that the need for the people around the world to be able to know or even master English is crucial.

Cravotta (2004:2) mentions that in order to have an effective English communication since English is one of the international languages; we need to have a complete understanding of communicative competence. According to Hymes (in Cui-yun 2008:24), communicative competence is what the speaker needs to know in order to be communicatively competent in a speech community. Canale and Swain (1980:40) supported by Savignon (1983:35), mention that communicative competence consists of four indispensable components; grammatical, discourse, sociolinguistic, and strategic competences. Celce-Murcia (1995:42), in her concept of communicative competence mentions that the components of the communicative are connected to reach the conceptualization of discourse competence. It deals with the ability to comprehend and produce all significant speech acts and speech acts sets. Cravotta (2004:4) states that the total understanding of communicative competence is very important for people who would like to use English for communication. Those who can manage to communicate successfully can be considered as the one who has communicative competence.

From the four components of communicative competence, we get the knowledge that grammatical and discourse competence explain about all rules and systems that inform us on what we can do with the forms of language, whether it is in the sentence-level rules or rules on how to combine the sentences. Then sociolinguistic competence deals with knowing the appropriate meaning of the language in social and cultural contexts, such as politeness or the ability in pertaining, sending and receiving intended meanings. To be able to communicate competently, we need strategic competence to enable us to communicate with others when there is communication breakdown.

Based on the preliminary studies, the researcher came up with the conclusion that the students have tried to communicate and to get their message across to their listeners. They have tried to use communication strategies to cope with their communication problems. In fact, the students actually unintentionally have applied some of the communication strategies in their interaction. It is due to the fact that in their previous lesson of English when they were still at junior or senior high schools, the students have never been taught or given information on kinds of communication strategies that they can use to solve their problems in communication during their interaction with others. Therefore, the exploration on the students' use of communication strategies needs to be done. This study reveals the students' knowledge on one of the communicative competences that is strategic competence at their first year at the campus. The purpose of this study is to analyze the communication strategies used by the students at their Spoken Integrated Class.

Speaking as one of the four language macro skills beyond doubts is very important for the students to master, specially the students who are programming English Education. They will become English teachers who will be expected to have speaking proficiency equivalent to that of an educated native speaker or at least able to use the language fluently and accurately on all levels normally pertinent to professional needs. Brown (2001:247) also states that inside the classroom, speaking and listening are the

most often used skills. Both skills are recognized as critical for functioning in an English language context by the teachers and the learners. Moreover, Florez (in Bailey 2005:2) adds that speaking is an interactive process of constructing meaning that involves producing, receiving and processing information. It is sometimes spontaneous but not completely unpredictable. The students will face barriers of expressing their thoughts clearly and choosing the right words and then putting them into the right sentences or utterances. It is supported by Shumin (2002:204) argues that foreign language learners face difficulty in speaking the target language due to the fact that effective oral communication requires the ability to use the language appropriately in social interactions. Therefore, teachers should prepare the students with enough knowledge and the ability on how to cope with the problems in communicating in English.

Teaching English learners how to speak in the best way possible needs some speaking activities have to be provided and can be applied to English as Foreign Language (EFL) classroom settings. One of the ways is by inviting and taking the students to an activity related with real-life situations that require communication. Davies and Pearse (2000:86) support that in order to promote real communicative ability, the teachers should establish English as classroom language, use interesting topics, and stimulating activities, and support and encourage the learners in every effort they make to communicate. In short, the EFL teachers should create a classroom environment where students have real-life communication, authentic activities, and meaningful tasks that promote oral language. Furthermore, Shumin (2002:204) mentions that the diversity in interaction involves not only verbal communication, but also paralinguistic elements of speech such as pitch, stress, and intonation. Not only that, he also states that nonlinguistic elements such as gestures and body language or posture, facial expression, and so on may add the complexity of the learners should know to ease their communication.

In relation with the previous ideas, the students' use of communicative strategies as part of their strategic competence in their Spoken Integrated English Class are observed and analyzed. As previously mentioned, strategic competence, according to Bailey (2005:3) is the learner's ability to use language strategies to compensate for gaps in skills and knowledge. For example, if the ability of compensating the difficulties in communication can be found when a learner wants to say a word and he or she does not how to express his or her meaning, he or she might need to be able to know what strategies can be used to make his or her points understood by the listener.

Spoken Integrated English Class in State University of *Surabaya* is designed as the matriculation phase to help the students develop their ability to speak and to get involved in a basic conversation activities (*Buku Pedoman UNESA 2015*). In this level of speaking, the students will be expected to have the ability to get involved actively in the conversation or communication. For example identifying general and specific information of various monologue and dialogue, discriminating the differences of intonation and stress which give clues to meaning, guessing meaning by context, identifying relevant points, rejecting irrelevant information, identifying inferred information, and use communication strategies to introduce and talk about self, to ask for information, to get people to do things, to talk about past events, to express hesitation, prevent interruptions and interrupt politely, to talk about the future, to offer to do something, to ask permission, to give reasons, to give opinions, agreement/disagreement, to talk about similarities and differences, to describe things, people and places, to make

suggestions and give advice, to complain, to apologize and to forgive, to express disappointment, to telling a story, to talk about moods and feelings in beginner level. In this study, the students present or perform their speaking ability in the form of dialogs or even a monolog. They have to be ready to perform in front of their friends with the dialogue or monologue that they have already prepared or an impromptu performance asked by the lecturer based on the topics.

The theme for the Spoken Integrated English lecture is related with the students' daily life activities which would give the students ability get involved in the conversation or talks especially about their daily activities and also interests. In the Spoken Integrated English class activities, the students are given various activities in their book which they can practice while they are having the lectures. The language functions which would be the focus on the Spoken Integrated English are making dialogues, simple discussing issues, agreeing and disagreeing. The researcher observed 26 first year students for their use of communication strategies, interviewed them to find the factors underlying their choice of the communication strategies and also to find the contribution on the communication strategies on their speaking ability.

Communication strategies are used to understand and develop the students' strategic competence which later on helps them to get involved in conversation successfully and beyond the classroom without having hesitation or communication breakdowns, as strategic competence is, according to Canale and Swain (1980:25), how to cope in an authentic communicative situation and how to keep the communicative channel open. In language teaching, we need to make our students aware of the use of strategic devices or communication strategies. Hedge (2000:52) states that strategic competence consists of communication strategies which come to play when learners are unable to express what they want to say because they lack the resources to do so successfully. Therefore, in order to find out the students' use of strategic competence, we can see it from the use of communicative strategies that they use to maintain their communication with their partners.

Communication strategies are tools which can be used when the language learners face a problem in their communication caused by lack of linguistic resources. Corder

(1981:103) defines communication strategies are a systematic technique employed by a speaker to express his or her meaning when faced with some difficulty. It deals with the attempts to maintain the effectiveness of the communication. Since learners often encounter difficulty in perceiving intended meanings in communicative situations because of their limited linguistic resources, they resort to communication strategies in order to maintain communication.

### **Method**

The study used descriptive-qualitative research design. Qualitative research is descriptive. The data collected were in the form of words or pictures rather than numbers. The data include interview, transcripts, field notes, photographs, video tapes, personal documents, memos, and other official records. Descriptive qualitative research described the phenomena which occurred in the Spoken Integrated English class of the English Department at State University of Surabaya in the form of words rather than in numbers. The phenomena dealt with the students' effort in maintaining their communication using

their English. The researcher used Dornyei's typology of communication strategies to find out the students preference in using the communication strategies.

The data covered the communication strategy used by the students which include twelve typology of communication strategy by Dornyei. They are; topic avoidance, message abandonment, approximation, word coinage, circumlocution, literal translation, code switching, use of all-purpose words, appeal for help, and use of non-linguistic signals, foreignizing, and stalling or time-gaining strategy. The data collected are then stated in the form of words rather than in numbers. Most of the data are video recorded.

### **Procedure**

The data of the study was collected through observation. This observation was conducted for one month, starting from September 21, 2015 to October 12, 2015 every once a week; during which the students' activities in the classroom took place. The first procedure was the researcher used observation sheet to collect the data. The data was collected in four meetings, in one meeting there were some students' performance.

The second procedure is recording. It deals with all the students' verbal communication. It was done by using a video camera. The recorded data was transcribed and the description was used as data. The video camera was prepared to help capture the setting and the data needed which cannot be captured only by cassette recorder. The video camera recorded all verbal communication taking place in Spoken Integrated English Class. Before the recording, the lecturer explained and gave the description of the activities of the Spoken Integrated English Class and the plan for the use of video camera to record their speaking activities.

The third is interview which was used as the supplement for the main data. The researcher conducted the interview in order to get the data dealing with the interaction or communication in the teaching and learning process of Spoken Integrated English class.

### **Result**

As shown from the observation, it was found that the students employed communication strategies as their best solution for their communication problems they encounter during their interactions in the Spoken Integrated English Class. The communication strategy is analyzed using the characters of communication strategy proposed by Dornyei based on his typology of communication strategies.

#### **1. Avoidance Strategy**

The first communication strategy is avoidance strategy. This strategy is considered commonly used by the second-language learners. Dornyei classified this avoidance strategy into topic avoidance and message abandonment.

##### **a. Topic Avoidance**

In topic avoidance, learners avoid certain topics and words for their own sake of maintaining the communication. In the present study, the students used this strategy because of their insufficient linguistic resources. Due to this, they simply and deliberately tried not to talk about topics which the target language item or structure was not known. The example from the students' utterance.

*You should visit The Garuda Wisnu Kencana when you go to Bali. It has some er...er...The statues are beautiful.*



The student avoids to continue his words because he found difficulty in finding the word *enormous statues* and just continued his talk.

### **b. Message Abandonment**

In message abandonment, learners of English as the second language find difficulties to talk about a certain topic and simply give up and continue to another. In this case, learners begin to talk about a concept but are unable to continue and stop in middle of his or her talks. The example of the utterance.

*When you feel stressed, you could listen to song. It can help because .....and you know, it also nice to listen to song you like.*

The student abandon the idea of continuing his utterance to give the reason why listening to a song can help to reduce stress. He deliberately continue his words to a different concept.

## **2. Compensatory Strategy**

### **a. Approximation**

Approximation is the use of a single target language vocabulary item or structure which a learner knows is not correct which shares enough semantic feature in common with the desired item to satisfy the learner. Approximation includes all word substitution that the learner knowingly employs to serve in place of more accurate item. The substitute word can refer to the correct concept, but at an inappropriate level or refer to another object which may give some hint to the intended referent.

*You can use credit cards because it's easier way to don't bring cash when you travel.*

From the data we can see that the student made a mistake in her sentence pattern. Here we can see that she used the negative form auxiliary verb do in an affirmative sentence.

### **b. Word Coinage**

This second type of paraphrase strategy deals with the learner's effort in solving problem in the communication by making up a new word in order to communicate a desired concept (Tarone in Bialstok, 1990: 41). The students' use of this strategy can be seen from the following example.

*You can use the elevator or er....electric stair to go to the floor of the mall.*

Here we could see that the student made up a word that is electric stair when he was trying to refer to escalator.

### **c. Circumlocution**

The last paraphrase strategy is circumlocution. This strategy allows the learner to describe the characteristic or elements of the object or action instead of using the

appropriate target language structure. For example, when someone wants to refer to an unknown word, he can explain the features that may help the listener guess the intended object.

*There is a program from the scholarship. It is a .... you will stay with a family for two days...*

It seemed that the student failed to find the word home stay. That is why she describes the word.

#### **d. Literal Translation**

The learners of second language use this strategy to translate word for word from the L1 language.

*We can pay the thing at the end of the month. It's different from ATM. In ATM, we pay before.....*

The student used the strategy by translating the Indonesian *kita membayar sebelumnya* into we pay before.

#### **e. Code Switching**

The learners of the second language use the native language terms without translating them. They directly insert a L1 words into their sentences or utterances.

*I don't want to be egois....it is not good.*

The student switched into the use of Indonesian term which is *egois* instead of selfish when she got difficulty finding the appropriate term in English.

#### **f. Use of All-Purpose Words**

This is the strategy when learners expand an empty lexical item to a context where certain words are lacking. In this present study, the students used this strategy in their group presentation.

*If we want to have a party, we need to have....what is it....a plan to help us.*

We can see that the student used the expression what is it to give him time to think about the right word.

#### **g. Foreignizing**

This strategy is used by the learners by using L1 word by adjusting it to L2 phonologically. There was no data recorded for this strategy during the observation. The students did not use this strategy in their group presentation.

#### **h. Appeal for Help**

Appeal for help strategy occurs when the learners consult their difficulties through any source of authority, such as a native speaker, the experimenter, a dictionary.

The strategy is often in the form of verbal efforts by rising intonation which implicitly elicit some assistance or validation from the listener.

*I had unforgettable and good ...(masa kecil)....memories.*

In this example, the researcher found that student stopped when he found difficulty with the word and then whisper to his partner sitting next to him asking help for the difficult word.

#### **i. Use of Non-linguistic Signals**

It includes all non verbal accompaniments to communication particularly those that serve in place of missing target language word. Some concepts are easy to simulate, such as Tarone (1977, in Bialystok 1990:67) gives example of the subject clapping hands to indicate applause, but other gestures are considerably less interpretable by a listener. There is one student who uses this strategy in his effort to maintain the communication.

*The policeman orders the drivers .....(move faster)....so the traffic will not be jammed.*

The student stopped for a while then he used gesture showing the hand signal from the police officer to order the driver to drive their cars faster. She was trying to recall the word move faster.

### **3. Stalling or Time-gaining Strategy**

The use of fillers or hesitation devices in the communication to fill pauses and to gain time to think is the characteristic of this strategy. Many of the learners of English use this strategy.

*Our group want to explain about....um...the travel guide.*

It shows the example of how the student used the markers such as *er* or *um* to give her more time to think about the next word or words they want to say.

### **The Factors Underlying the Selection of the Communication Strategy Avoidance Strategy**

The learners' attempt to reduce the problems concerning some unfamiliar linguistic features is by using avoidance strategy. This strategy is the result of the limited mastery of the target language, for example, the mastery of the appropriate target language words and structure. From the data which were obtained from the interview, the students chose topic avoidance as one of their strategies in their communication due to their lack of target language mastery. It includes the mastery of vocabulary and language structure. They choose to avoid using the unfamiliar and complicated words or sentence in their utterance. It simply for the continuity of what they want to express in their speaking activity. They only produce the target language vocabulary and structure they know well. While for message abandonment strategy, the students choose this strategy

based on the factor of the complicated message or ideas that they first want to say or express. As soon as they realize that they have problems in delivering a concept they will choose to stop in the middle of their utterance and then try to compensate the problem with the second plan in delivering their message.

### **Compensatory Strategy** **Approximation, Word Coinage, and Circumlocution**

They may lack of target language vocabularies, words, and structure. From the interview, most of the students do not choose approximation as their strategy to cope the problems in their communication. It is different with the researcher's result from the observation check list. Most of the students use approximation strategy in their communication. The factor which influences the students to use approximation strategy is related to their lack of vocabularies and structure. They use alternative vocabularies or structure which are not appropriate but the words shares enough semantic features with the desired item to satisfy the speaker. Word coinage strategy is related to the learners' attempt in solving the students' communication problems by creating a new word to express their ideas or to communicate a desired concept. While presenting the presentation, the students stop for a while to get time to think about the word or words, and then they still do not know the exact word or words that they need to use. The students use circumlocution to compensate with the difficulty of finding the appropriate terms or structure of the target language. They may get confused, forget the word or words or the structure and then decide to use circumlocution just to keep the communication going.

### **Literal Translation, Code Switching, and Use of All-Purpose Words**

The factor of the first language or native language inferences may lead to the use of this strategy. The students just said the word or words in Indonesian or they try to translate word for word from the native language. It is because the students tended to avoid delivering difficult words or sentences due to the factor of shyness or worry of making mistakes. Therefore they switch the English words or sentences into their native language. One of the compensatory strategies is use of all-purpose words. In the present study, the students used this strategy for the factor of difficulty in finding specific word or words. The students tried to recall the appropriate word or words by using this strategy, indirectly their friends sometimes help them with the desired word.

### **Appeal for help and Use of Non-linguistic Signals**

Appeal for help strategy is affected by lack of confidence. The students are not confident with the word or words that they will use or they are using. Therefore, they ask for the correct term or just to confirm the appropriateness of the word or words they have chosen or used. In this study the students quite often used this strategy. From the interview, the students said that the strategy gave them the opportunity to ask for a help from their friend whenever they are in trouble finding the right word or words. Use of non-linguistic signals is often used by the students during the study. The factor underlying the student to choose this strategy is that it can help him or her express certain things. By using gesture or mime they can try to make the listener understand what they

want to say. From the interview, the students stated that by using mime they can try to show the word or words that they try to say to the listener.

### **Stalling or Time-Gaining Strategy**

This strategy was used quite often by the students. The factors influencing the students to use this strategy are lost of concentration because of the students' nervousness and the students might forget of what they want to say. The students need time to think for the next utterance due to their temporary forgotten word or words during their presentation.

### **Conclusions and Suggestions**

Based on the result of the observation and the calculation of the data obtained from the observation sheet using the communication taxonomy from Dornyei, this study found that there are four mostly used communication strategies, namely approximation which is used 35 times (30,43%), stalling or time gaining which is used 21 times (18,26%), appeal for help which is used 18 times (15,65%), and literal translation which is used 16 times (13,91%). The high frequency of the use of approximation strategy indicates that the students were confident enough in presenting their group presentation in front of the class. It is also a sign that they were brave enough to take risks by saying something which has close meaning with the intended meaning that they wanted to say.

Some suggestions are proposed for the betterment of the teaching of English. Firstly, the English teacher is suggested to give and explain the kinds and how to use communication strategy to the students. Secondly, the teacher is recommended to give the students activities that will arouse the students' use of the strategies, record the activities and discuss the result with the students. Finally, for the next researchers, it is suggested to take some steps in their preparations for the success of the research.

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Table 1. The Topics of Group Performance and The Use of Communication Strategies

Group	Topic	Types of Communication Strategies											
		TA	MA	App	WC	C	LT	CS	UAW	F	A	UNLS	S
1	How to reduce stress	1	2	7			2	1	1		2		4
2	Visiting interesting places	1	1	10		1	2				2	1	4
3	Credit cards	1		6			2				4		3
4	A class party			3			4	1	1		1		1
5	Planning your future			3	2				2		2		2
6	How have you changed		1	3			1	2	1		2		3
7	Caught in the traffic				1		2				2		3
8	A travel guide		2	2			3	1	1		3		1

Note:

TA: Topic Avoidance

MA: Message Abandonment

App.: Approximation

WC: Word coinage

C: Circumlocution

LT: Literal translation

CS: Code switching

UAW: Use of All-purpose Words

F: Foreignizing

A: Appeal for help

UNLS: Use of Non-linguistic Signals

S: Stalling or Time-gaining

# Enhance The Student's Result Through The Implementation of Problem Based Learning In Making Man's Shirts Pattern Subject in Fashion Science Student at Surabaya State University

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## ABSTRACT

The problem in this research contents is about low of learning activity and study result. This study aims to (1) describes feasibility study by applying problem based learning models; (2) investigate student activity at study process that using problem based learning models; and (3) investigate the effectiveness of the problem based learning models.

This study was a classroom action research, carried out in two cycle, each cycle consist of planning, action, developing, and reflecting stage. Planning stage is began with observation to know the problem, condition, situation, dan potential in the class. Make problem solutions and make learning tools for making man's shirt pattern competence using problem based learning model. The learning tool consists of: (1) learning plan, (3) hand out, (4) Student activity sheet, and (5) evaluation sheet. Aside from making learning tool, this stage also prepare the research instrument. Action stage, done in the calss by using problem based learning in making man's shirt pattern competence. In study process, lecturer helped by two people to observe and making notes and pictures using the research instrument. The last stage, reflection stage is needed to evaluate the learning process. The research subjects are 1 teachers and 30 students. The data collecting instruments are sheets for learning process activity, sheets for student activity, and sheets for student test. Data were analyzed by means of the descriptive technique.

The results of this classroom action research show the following. (1) the implementation of problem based learning model are very good, all phase have done included problem assigned, student experiment, lecturer help the experiment, presentation result, and evaluation; (2) the student activity are very good in terms of reading, discussion, making notes, listening, make experiment, asking, and make communication; (3) and the study result are very good consist of cognitive, affective, and psychomotor. So in conclude, study result and student activity can be enhance by using problem based learning in making man's shirt pattern competence.

*Key Words: study result, problem based learning, man shirt pattern.*



## Introduction

Some components that support the achievement of competence in creating a pattern of men's shirts is on the selection of appropriate learning models and the selection of teaching materials. Selection of appropriate learning models and current models are not only innovative, but the most important is the effectiveness of these models in a subject. Therefore, a lecturer should be able to use appropriate learning models that can support the learning process. Besides learning model, the selection of teaching materials is also a very important component in a learning process. Teaching materials used in the learning process, should be adjusted to the development of science and technology. In this research, required a learning device in which there are the practical elements so that faculty and students can visualize the material presented. It is necessary to feed the media learning using computer technology in particular. One alternative is the use of instructional media learning device that is supported by the media that is packaged in the form of Powerpoint. The device is specially designed so that learning can be a guide for faculty and students in the learning process.

## Problem Based Learning

Arends (2007: 43) states that the essence of PBL presents a variety of problematic situations are authentic and meaningful to students, who can serve as a springboard for investigation and inquiry. PBL is designed to help students develop thinking skills and problem-solving skills, learn the roles of adults and independent learners. PBL is an alternative learning model that can be implemented by educators. Teachers need to develop a classroom environment that enables the exchange of ideas openly that emphasizes student learning in communicating with their peers as well as with the learning environment of students, thus helping students become more independent in solving problems related to the facts. The focus is on the concept of learning are chosen so that students not only learn the concepts related to the problem but also the scientific method to solve the problem. Problems that can be solved be the focus of student learning through group work so as to provide learning experiences that vary in students such as cooperation and interaction within the group. These circumstances show that the model PBL can provide rich experiences to students. In other words, the use of PBL can enhance students' understanding of what they are expected to learn so that they can apply them in real conditions in everyday life.

### Step-by- Step Problem Based Learning ( PBL )

The Syntax for Problem Based Learning

Phase	Behavior of Teachers
Phase 1. Provide orientation about problems to students	The teacher discusses the learning objectives, describe various important logistical needs, and motivate students to engage in activities addressing the issue.
Phase 2. Organize students to researching	Teachers help students to define and organize learning tasks associated with the problem

Phase 3. Helping independent or group investigation	Teachers encourage student groups to get the right information, carry out experiments and find explanations and solutions
Phase 4. Develop and presenting artifacts and exhibit	Teachers assist students in planning and preparing the appropriate artifacts such as reports, video recordings, and models, as well as helping them to pass it on to others.
Phase 5. Analyze and evaluate process troubleshooting.	Teachers help students to reflect on their investigations and the processes they use.

(Arends, 2007: 56-60)

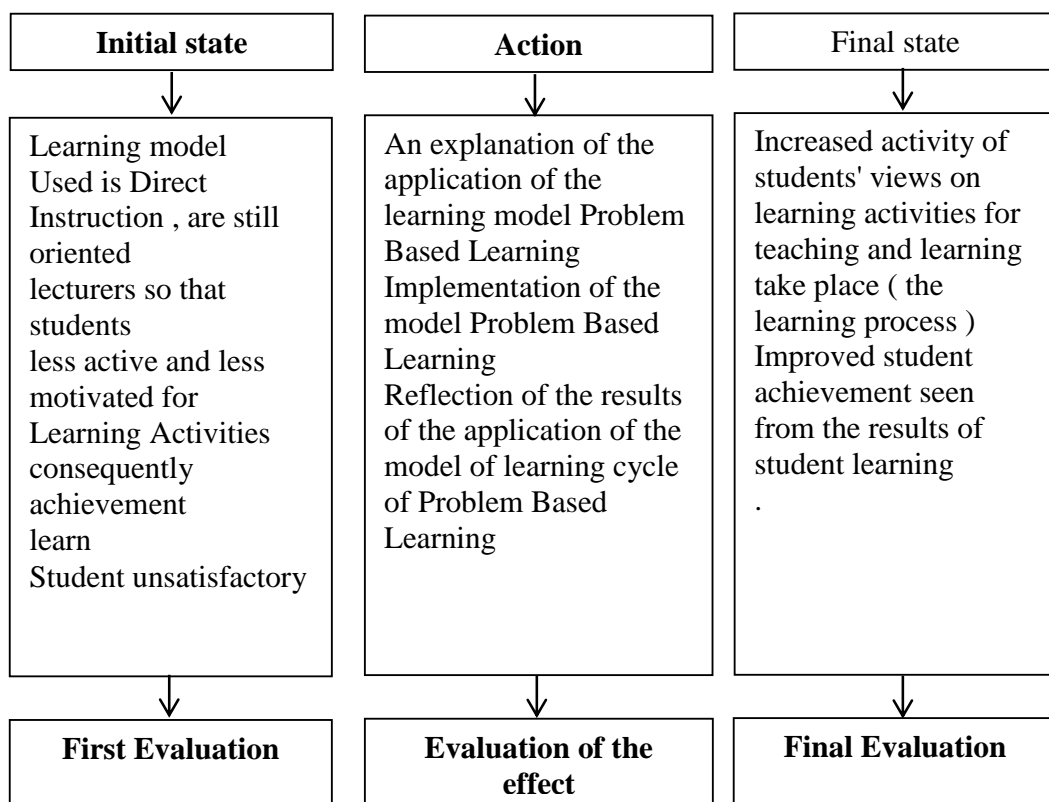
### **Shirts Male Pattern Making Competence**

Subjects menswear is a subject that studies on men's clothing manufacture , for example : shirts, pants, jackets, and others. Competence makes the pattern of men's shirts is one of the competencies that must be mastered by the students in the subject of men's fashion . In this study, the competence to make the pattern of men's shirts include basic pattern making upper body , arms and collar using multiple systems construction techniques . Students are expected to make a miraculous kind of system skilled pattern of men's shirts and be able to analyze the advantages and disadvantages of each system patterns , and can correct the deficiencies that exist in each of these patterns.

### **Learning and Learning Outcomes**

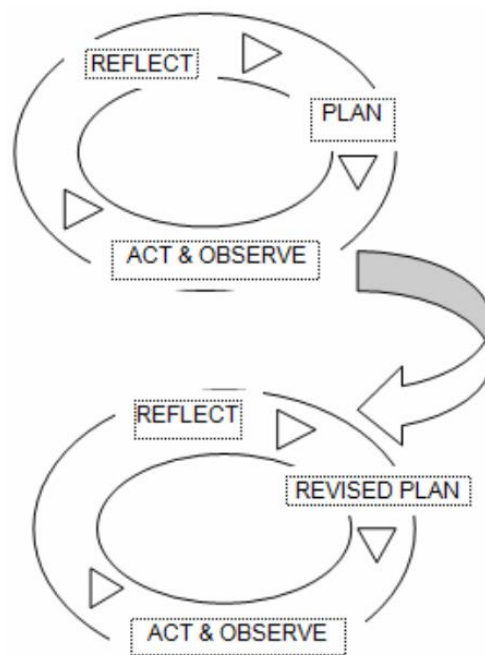
Learning according to Gagne (1989 : 11) is a process by which an organism changes its behavior as a result of experience. In general, learning can be understood as a phase change in the whole behavior inividu relatively fixed (permanent ) as a result of experience. Changes in behavior or individual organisms can include changes in behavior, knowledge , attitudes, and skills of the so-called learning outcomes. After the teaching and learning process is underway, it is expected a better learning outcomes, from not knowing to knowing . Bloom (1981) classifies learning outcomes in three domains (aspects) , namely cognitive (knowledge) , affective (attitude), and psychomotor (skills) .

## Research Design and Implementation



## Research Model

This research is a classroom action research conducted collaboratively . In the collaborative research that action is lecturer itself, while requested to make observations on the course of action process is a researcher (Arikunto , 2009: 17) . The model used in this study is a research model that is expressed by Kemmis and Taggart is the development of a model of Kurt Lewin . This model can include multiple cycles and in each cycle includes phases , namely : ( 1 ) Planning, ( 2 ) Acting and observing, ( 3 ) Reflecting, and ( 4 ) Revise plan, These stages take place over and over again until the research objectives achieved.



(Kemmis and Taggart 1988:8)

### Research subject

The subjects of this study were students Fashion Sains 2013 State University of Surabaya , which is 30 students and is the object of this research is the competence to make the pattern of men's shirts with the application of problem -based learning model (Problem Based Learning) .

### Research Results

#### Cycle One

##### Planning

This plan starts from observation to determine the problems , conditions , circumstances and the potential that exists in the class , situation analysis , formulation of program improvement or alternative problem-solving, planning of activities, the preparation of the learning tools to make patterns of men's shirts using problem based learning model. Learning tools consists of : ( 1 ) syllabus , ( 2 ) learning plan , ( 3 ) handout , ( 4 ) the worksheets of students , ( 5 ) table specification sheet assessment, and ( 6 ) evaluation sheets . In addition to learning tools , at the planning stage is also prepared an instrument for making research data. The instruments include: the observation sheet for learning plan and student activities who then consulted with the supervisor .

## **Action**

Implementation of the learning is done in accordance with the management class schedule menswear . The material that will be given is a matter of making men's shirt pattern by applying a problem based learning model. Learning activities carried out in accordance with the learning scenario in the learning plan .

## **Observation**

In the implementation of the learning process competencies make men's shirt with a pattern using problem based learning, Lecturer as a researcher with the help of two observers to record everything that happens in learning either in the form of notes and photos using a research instrument that has been prepared . Things that are observed during the learning process is learning plan scenario and activities of students during the learning process takes place. Observations used as data to be used as a reflection and evaluation

## **Reflection and evaluation**

Based on the results of learning in the first cycle can be found some shortcomings in the implementation of PBL models, namely: 1) In the organization of the group still has not seen cooperation among members of the group, 2) Researchers do not provide overall guidance in the discussion of each group, so that there are groups who still feel confused in working student activity sheets.3) In the management of time, researchers gave too much time in discussions so that the time to make a presentation to be less long. Then its time for an explanation and clarification of the presentations of the students is also lacking. Based on the result of reflection on the first cycle then do some planning to correct actions that would diimplementasikan on to the second cycle, namely: 1) Researchers must be more intensified every member of the group to participate in discussions.2) Researchers more thorough in conducting group counseling as well as check the accuracy in working. 3) In the management of time, should researchers reduce the time to discuss and add time to the presentation. Currently, student presentations can also be discussed in answering questions that arise, and exchange ideas.

## **Cycle Two**

### **Planning**

Researchers jointly supervising the learning plan to make the pattern of men's shirts using Problem Based Learning Model and learning tools create patterns of men's shirts and prepare research instruments , namely the observation sheets feasibility study based on the problem , and student activity observation sheet for the second cycle .

### **Action**

Activity in the second cycle is a stage presentation of the results of discussions and student presentations on making the pattern of men's shirts . Presentation of activities run smoothly , students are very enthusiastic in response to the results of the other group discussions . This can be seen when the first group finished presenting the results of the discussion , the other groups have been vying want to respond . So also in the appearance of the second to the last group , the other group members crowded in response to group results presentation. The question posed was about the shortage of construction pattern of the shirt and how to reconstruct the pattern deficiency .

### **Observation**

In this study, researchers act as observers and assisted by two other observers . Observations were conducted on the feasibility observation learning plan on making men's shirt pattern using problem -based learning .

### **Reflection**

Based on data from the implementation of the research results from the first cycle to the second cycle there has been an increase in student learning results. Results have been obtained in accordance with the indicators of success .

### **Conclusion**

Based on the results of research and discussion, can be summed up as follows: student learning outcomes fashion sains at making men's shirts pattern competence can be improved through the application of problem-based learning model

### **Suggestions**

Based on the conclusion that some of the suggestions proposed as an improvement efforts are as follows: 1) Problem Based Learning Model can be used and developed in an effort to improve the quality of learning, because it is based on student research can improve the ability to think, express opinions, actively asking questions, working together, and independent learning; 2) For students, lecturers, and all parties to continue to develop and seek innovative learning creativity fashion, especially with regard to the application of problem based learning model; 3)For other researchers who wish to conduct similar research should not only limit on efforts to improve students' ability to solve problems, but also other variables were improved and other fields.

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**THE ENGLISH PRESENTATION ON BUSINESS PLAN  
DELIVERED BY ECONOMICS STUDENT OF UNESA  
(A CASE STUDY)**

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**Abstract**

In many companies, presentations are now a common feature of working life. It is also becoming increasingly common to give presentation in English. Giving presentation in a foreign language is real challenge, even for those who have a good knowledge of the language. A good presenter should know the appropriate vocabularies, expressions and organization when giving a presentation in English.

According to Grussendorf (2007), there are six important points to be paid attention before doing a presentation in English. The six points are 1. opening a presentation, 2. organizing a presentation, 3. introducing visuals 4. talking about visuals 5. concluding the presentation 6. handling the questions and answer session.

In economics faculty, students were taught how to deliver English presentation on business plan. Among several classes which were observed, many students had difficulties in presenting business plan in English. In order to know to what extent the students are able to deliver English presentation on business plan, the research was then conducted.

The subject of this research was a student of economics who delivered English presentation on business plan. Since the research focused on the utterances on students' English presentation, the descriptive qualitative research was implemented.

Keywords: *English, Presentation, Business plan,*

**1. Introduction**

To welcome Asean Economics Community (AEC) in which free trade is performed, people need to equip themselves with the skills of English. This happens since a great number of foreign people come to Indonesia to do business. Foreign people will interact and communicate with Indonesian people using one of international languages, and English is the most widely used by people worldwide. Mastering English is not merely being able to speak and write, but more than that, the skills of English must support the business requirements. One of the English skills which are commonly neglected by business person is the skill of presentation. For Indonesian people, giving presentation in Indonesian language is not a big problem, but when people must give a presentation in English, they become aware of their weaknesses.

In many companies, presentations are now a common feature of working life. It is also becoming increasingly common to give presentation in English. Giving presentation in a foreign language is real challenge, even for those who have a good knowledge of the



language. A good presenter should know the appropriate vocabularies, expressions and organization when giving a presentation in English.

According to Grussendorf (2007), there are at least six important points that need to be paid attention before doing a presentation in English. The six points are 1. opening a presentation, 2. organizing a presentation, 3. introducing visuals 4. talking about visuals 5. concluding the presentation, and 6. handling the questions and answer session. The techniques of presentation not only should be mastered by business persons but also by university students. Students need to present their campus assignment in the classrooms using powerpoints.

Having a good competence in English is the crucial issues for students of Economics, Unesa. Students are taught how to deliver English presentation on business plan. During the researcher's observation, students still have difficulties in presenting business plan in English. It seems that they do not know how to organize presentation. Hence, in order to know to what extent the students are able to deliver English presentation on business plan, the research then was conducted. A case study is done by selecting the best presentation given by the students.

There are two research questions in this study. They are 1). How is the organization of English presentation on business plan delivered by economics student (2) How is the accuracy of the word choice and the grammar on business plan delivered by economics student.

## **2. Theoretical Framework**

English is the first foreign language taught from elementary education to tertiary education in Indonesia. The status of English language teaching and learning results in insufficient English exposure to any student that they cannot quickly develop their English because their opportunity to use English is limited up to the time allotment scheduled weekly. They rarely use English as the means of instruction but rather as the object of discussion (Richard, 1971: 87).

### **A. Communicative Competence**

To do a presentation in English, students must have communicative competence. Competence itself refers to linguistic competence (Taylor 1988) or declarative knowledge (Færch and Kasper 1989; O'Malley and Chamot 1990). Murcia (1995) relates to communicative competence, which is supported by five different competences. They are briefly described as follows:

1. *Grammatical Competence* or *linguistic competence*: knowledge on language rules which covers such components as: syntax, morphology, lexicon, phonology, and orthography.
2. *Sociolinguistic Competence*: knowledge on sociocultural use of language which covers such socio-contextual factors as: participation, situation, style and culture.
3. *Discourse Competence*: knowledge on genre which covers such elements as: cohesion (reference, conjunction, lexicon), deixis (personal, spatial, temporal, textual), coherence and generic structure.
4. *Strategic Competence*: knowledge on communication strategies which covers avoidance/reduction, achievement/compensatory (code switching transfer), stalling/time-gaining (filler, gambit, cajoler, repeat), self-monitoring (repair), interactional (role in exchange) etc.
5. *Actional Competence*: knowledge on language function which covers role in exchange.

Figure 1. Communicative Competence



## B. Error Analysis

Richards (1971) views error as the low elaboration of linguistic system and calls it transitional competence. This systematic error occurs because the learner is inexperienced to develop a hypothesis on the language rules, and is known as intralingual or developmental error. Error can be classified into four: overgeneralization, ignorance of rule restrictions, incomplete application of rules and false concepts hypothesized. Srinivas (2005a) and Nemser (1971) view error as the learner's language development or approximative system, or idiosyncratic dialect (Corder 1973) or interlanguage (Brown 1994; Ellis 1995). In this case the learner simplifies the system of the target language. For instance, a learner may simply

consider all verbs as transitive or intransitive that he/she tends to say *I am feeling thirsty* and *Don't worry. I am hearing him* for *I am thirsty* and *I hear him*

### 3. English Presentation

#### A. Preparation before giving a presentation.

There are some preparations that should be done before giving the English presentation as recommended by Pelster (2015), they are:

- Give yourself plenty of time to prepare the presentation and to familiarize yourself with the topic. Practice your presentation in front of a live audience, colleagues or friends for example.
- Structure your presentation logically, and briefly summarize your presentation in the introduction to make it easier for your audience to understand. Sum up the most important points in your conclusion and leave a few minutes at the end of your presentation to answer questions from your audience.
- Use visual aids such as PPT slides to highlight or demonstrate the main points of your presentation. But don't overload the slides with information as this will detract the audience's attention from what you are saying.
- Involve your audience by asking them questions, or drawing on examples that are familiar to them.
- Be aware of your body language. If you look relaxed and make eye contact with the audience you will come across as confident and your audience will feel relaxed too. Use hand gestures and facial expressions to emphasize your message and don't forget to smile!
- Your voice is your most important tool. By varying your tone of voice you can engage your audience. Speaking in a monotone will make the presentation tedious whereas varying the pitch and speed at which you talk will give your presentation energy.
- Don't be afraid to be nervous! You will inevitably be nervous the first time you present in front of a large audience. Remember that this is perfectly natural, and try and try to channel your nervous energy into an exciting presentation!

#### B. Helpful phrases for a presentation

There are some useful phrases to be used in delivering a presentation. Grussendorf (2007) gave some expressions to give the basic structure of a presentation in English.

Opening a presentation

- Welcoming the audience: *Good morning, Hello etc*
- Introducing oneself: *Let me introduce myself. I'm Dave Elwood from ....*
- Saying what your topic is: *As you see on the screen, our topic today is ...*
- Explaining why your topic is relevant for your audience: *My talk is particularly relevant to those of you/ us who ...*

#### Beginning the presentation

- I'll start with some general information on...
- I'd just like to give you some background information about...

#### Organizing a presentation

The final part of the introduction deals with the organization of the talk: how long it will last, whether there will be handouts, and how questions will be handled.

- Timing : *My presentation will take about 20 minutes*
- Handouts: *I'll be handling out copies of the powerPoints slides at the end of my talk.*
- Questions: *If you have any questions, feel free to interrupt me at anytime*

#### Talking about the visuals

The first rule of preparing effective visuals is that they should be clear and easy for the audience to follow. However, sometimes it is necessary to explain a more complicated visual and it is always necessary to point out the most important information.

- Explaining a visual: *First, let me quickly explain the graph*
- Highlighting information: *What I'd like to point out here is ....*
- Talking about trends: *In April the rate of unemployment rose to 5 million*

#### Closing a presentation

- To sum up...
- So to summarize the main points of my talk...

#### Inviting questions

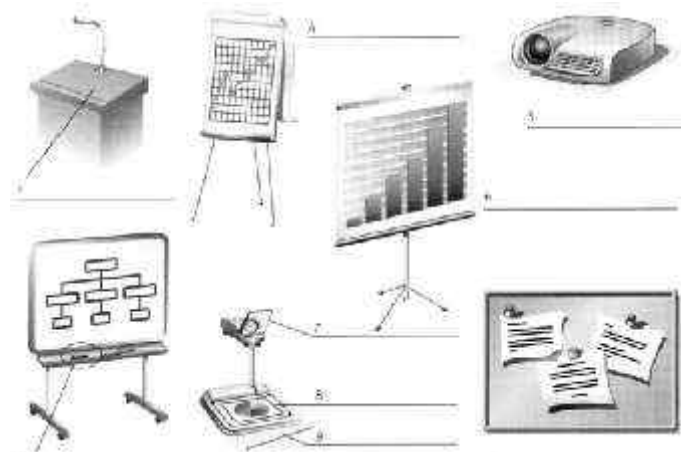
- I will be happy to answer your questions now
- If you have any questions, please don't hesitate to ask

#### C. Presentation Tools

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The pictures below are examples of presentation tools. A set of tools which are commonly used are Laptop, Powerpoint, LCD, Screen, and Microphone. Whiteboard and Flip Chart are sometimes used to help presenter draw and write directly using board marker. While the Overhead Projector (OHP) is not currently used since it is already old fashioned. It's existence has been replaced by LCD.

Figure 2. Presentation tools



#### 4. Research methods

The subject of this research was one economics student who delivered English presentation on business plan class. She was chosen as a consideration that this study is a case study. Since the research focused on the utterances on students' English presentation, the descriptive qualitative research was implemented. The data were in the form of utterances which were recorded. The utterances were then transcribed into sentences. The sentences were analyzed in order to answer the research questions.

The sentences were then analyzed based on the theory English presentation proposed by Grussendorf. The focus of this study was to find out whether the organization of the presentation was in line with the theory recommended by Grussendorf. The second, to find out to what extent the student's English capability in terms of vocabulary building and the use of grammar in presentation.

#### 5. Script of Students' English Presentation on Business Issue

Presenter : Wahyuni

Questioner 1 : Deta Brilyanti Asanjaya

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Questioner 2 : Dwi Isnaini  
Questioner 3 : Dini Wahyu Pratiwi  
Questioner 4 : Alfia Qorizah

Topic : Crowdfunding

The practice of funding a project or venture by raising many small amounts of money from a large number of people, typically via the Internet.  
"Musicians, filmmakers, and artists have successfully raised funds and fostered awareness through crowdfunding"

This is the complete script on English presentation on Business.

*Presenter : Assalam 'alaikum.*  
*Audience : Wa'alaikum Salam*  
*Presenter :Halo class, how about today ? I hope today will be the great presentation to all of our team amiinn with saying bismillahirrohmanirrohim I'll try to speak in front of the class.*

*My name is Wahyuningsari. I will represent my team. The first team is consists of 5 girls of Islamic Economic 2015 A Class, State University of Surabaya. they are Deta Brilyanti Asanjaya, Dini Wahyu Pratiwi, Dwi Isnaini, Alfia Qorizah and I want to present a business issue that we have discussed a three days ago . Crowdfunding is not an issue that became a trending topic but it is business bridge, we can conclude like that.*

*Let's begin this presentation .....*

*Crowdfunding or in Indonesian called Galang Dana is one of the result of technological development. with the system , a person who have a business idea or a research idea or whatever it is, it is enough to make a business plan or project proposal, and then upload to a website that have platform of crowdfunding. If the proposal is feasible it will be posted in the platform and then wait for several month until the budget that is written in the proposal is collect.*

*I give an example of the company, PT Digital Semantika which provides games service. successfully built with it. For 40 days the proposal successfully raising funds US \$ 29,067 in the indiegogo platform or about 300 million*

*I think the investors are interested with this idea so the project is successful. Now, we know what is crowdfunding and examples of the company. I would like to explain the strength and the weakness of this idea ..*

*First,*

*Be quickly to collect the funds. If the investor or supporter like with your business idea or support your project you will get it the funds.*

*Second,*

*Indirectly , businessman has tested the market response to the business whether it will receive a response positif or no.*

*Third,*

v

*Accommodate a lot of ideas creative business.*

*Public support such as second point.*

*You have not a responsibility to investors. If the project is fail, the supporter will not require the funds to be returned,*

*Next slide, I will discuss about the weakness crowdfunding.*

*An analysis is not just talking about plus or value but also weakness of an object, as well as crowdfunding, some of the results of our discussions*

*Uncertainty, its different if to ask for funds to investors, in crowdfunding the opportunity to get the fund is uncertain. You must to wait for a lot of month so your proposal has received the funds, some all the proposal are received very little response.*

*Plagiarism*

*It is not Social responsibility as I explained on the responsibility indirectly to investors, a receiver fund of crowdfunding has responsible for it.*

*On the next slide I will explain little about the mechanisms crowdfunding, starting from proposal systematic, then send it through crowdfunding provider, here will be assessed whether a project or business idea is worthy to get funds. If feasible it will be displayed and then wait several months for crowdfunding, after the funds collected will be given to the creator business. Then the business creator had the right to develop on the his idea of business.*

*Thereby little about crowdfunding as our material. Any question guys?*

*Questioner 1 : Can you tell me a simple way to understand about crowdfunding?*

*Presenter : Crowdfunding is one of alternative to get a capital that is possible many people joint to realize a comercial project or fundraising to social interest. In crowdfunding there isn't customers but backers, there isn't products but projects, there isn't business owner but creator, there isn't payments but pledges.*

*Questioner 2 : In your opinion how high the level successfully of crowdfunding?*

*Presenter : In my opinion that if the proposal or business idea is interesting, there is a big possibility to getting fund from investors. So the business idea can realize to be a real business.*

*Questioner 3 : Is a crowdfunding can be succeed in thrive country?*

*Presenter : Yes, it is. You can see the reality in Indonesia, our country is the thrive country, and crowdfunding can be succed here. There are some bussiness ideas and projects had realized with it*

*Questioner 4 : Can you mention some media that provide a crowdfunding?*

*Presenter : The media of crowdfunding are wujudkan.com, patungan.net, ToGather, gagas.web.id.*

## **6. Discussion**

## A. Opening a Presentation

### 1) Welcoming the audience

Script 1

*Assalamu'alaikum. Hello class, how about today? I hope today will be the great presentation to all of our team .. amiinn with saying bismillahirrohmanirrohim I'll try to speak in front of the class*

Analysis 1.

The presentation starts with greetings uttered by the presenter by saying Assalamualaikum. It is acceptable since all the audiences are all muslims. However, the presenter does not express her thanks for the audience's presence. This is important as a part of presenter's appreciation. Presenter is supposed to say "First of all, let me thank you all for coming here today" as suggested by Grussendorf.

### 2) Introducing oneself

Script 2.

*My name is Wahyuningsari. I will represent my team. The first team is consists of 5 girls of Islamic Economic 2015 A Class, State University of Surabaya. They are Deta Brilyanti Asanjaya, Dini Wahyu Pratiwi, Dwi Isnaini, Alfia Qorizah*

Analysis 2.

The presenter introduces her name shortly. The language does not represent the language of presentation. It would be better if she says "Let me introduce myself. My name is ....". In terms of grammar, the presenter makes mistake in using subject verb agreement. She fails in implementing grammatical competence in communication. However, it is understandable. There is also redundancy in the use of verb *is* and *consists*.

### 3) Saying what your topic is

Script 3.

*.... and I want to present a business issue that we have discussed three days ago .*

Analysis 3.

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The topic of presentation is revealed successfully. The language used is appropriate enough in delivering presentation. However, there are some mistakes in the use of grammar. Since time signal *ago* is used, present perfect must be changed into simple past.

4) Explaining why the topic is relevant for the audience

Script 4.

*Crowdfunding is not an issue that became a trending topic but it is business bridge, we can conclude like that.*

Analysis 4.

The reason why the presenter chooses the topic is given. The use of subject pronoun *We* is appropriate indicating that it is a common interest. The other expression that the presenter may use is “ My talk is particularly relevant to those who are willing to know ways of gaining money from society.

5) Organization of the talk

Script 5.

(none)

Analysis 5.

None of the utterances expressing about the organization of the presentation. The presenter does not describe how long the presentation will last, whether there will be handouts, and how the questions will be handled.

**B. Main Part of Presentation**

1) Signposting

(Saying what is coming, moving on to the next point, indicating the end of the section, referring back, summarizing a point)

Script 6.

*Let's begin this presentation .....*

**Crowdfunding or in Indonesian called Galang Dana** is one of the result of technological development. with the system, **a person who have** a business idea or a research idea or whatever it is, it is enough to make a business plan or project proposal, and then upload to a website that **have** platform of crowdfunding. If the proposal is feasible it will be posted in the platform and then wait for several month until the budget that is written in the proposal **is collect**.

*I give an example* of the company, PT Digital Semantika which provides games service. successfully built with it. For 40 days the proposal successfully raising funds US \$ 29,067 in the indiegogo platform or about 300 million

*I think* the investors are interested with this idea so the project is successful. Now, we know **what is crowdfunding** and examples of the company. I would like to explain the strength and the weakness of this idea ..

**First,**

*Be quickly to collect the funds. If the investor or supporter like with your business idea or support your project you will get it the funds.*

**Second,**

*Indirectly , businessman has tested the market response to the business whether it will receive a response positif or no.*

**Third,**

*Accommodate a lot of ideas creative business.*

Analysis 6.

The presenter defines the meaning of Crowdfunding by saying... *Galang Dana...* indicates that she tries to comprehend the audience quickly through the Indonesian equivalent. It is possible as long as the presenter also gives the details in English. The word .. *I give examples...* clearly gives the idea of what crowdfunding is.

In case of grammatical competence, there are some mistakes on the use of subject verb agreement and passive voice. The words .. *a person who have..* should be *has*. While the mistake on the use of passive voice is seen as *...written in the proposal is collect*. The word *collect* must be changed into *collected*.

The use of sequences like *first*, *second* and *third* are recommended since they give clear examples toward the ideas.

Script 7.

*Next slide, I will discuss about the weakness crowdfunding.*

*An analysis is not just talking about plus or value but also weakness of an object, as well as crowdfunding, some of the results of our discussions*

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*Uncertainty, its different if to ask for funds to investors, in crowdfunding the opportunity to get the fund is uncertain. You must to wait for a lot of month so your proposal has received the funds, some all the proposal are received very little response.*

### **Plagiarism**

*It is not Social responsibility as I explained on the responsibility indirectly to investors, a receiver fund of crowdfunding has responsible for it.*

*On the next slide I will explain little about **the mechanisms** crowdfunding, starting from proposal systematisc, then send it through crowdfunding provider, here will be assessed whether a project or business idea is worthy to get funds. If feasible it will be displayed and then wait several months for crowdfunding, after the funds collected will be given to the creator business. Then the business creator had the right to develop on the his idea of business.*

Analysis 7.

Some expressions of moving on to the next point are shown in the script above. The presenter uttered.. *next slide ..... on the next slide ....*

However, on the utterances above, there are no expressions of indicating the end of section as “*This brings me to the end of my second point*”, no expression of referring back as the expression “*Let’s go back to what were discussing earlier*”, and also there is no expression of summarizing the point such as, “*I’d like to sum up the points*” as recommended by Grussendorf in his book English for Presentation.

## 2) Talking about the Visuals

Script 8.

*I think the investors are interested with this idea so the project is successful. Now, we know **what is crowdfunding** and examples of the company. I would like to explain the strength and the weakness of this idea ..*

### **First,**

*Be quickly to collect the funds. If the investor or supporter like with your business idea or support your project you will get it the funds.*

### **Second,**

*Indirectly , businessman has tested the market response to the business whether it will receive a response positif or no.*

### **Third,**

*Accommodate a lot of ideas creative business.*

Analysis 8.

The script above shows how the data is presented. The presenter uses flowchart to explain the data. She mentions the signals of sequence such first, second, and third. However, the presenter does not use the expression of explaining the visuals such as *“First, let me quickly explain the flowchart.”*

Sometimes, it is necessary to explain a more complicated visual and it is always necessary to point out the most important information. One examples of the expression of highlighting information is *“ What I’d like to point out here is .... ”*

### C. Closing the Presentation

#### 1) Concluding the Presentation

Script 9.

Thereby little about crowdfunding as our material.

Analysis 9.

The expression of closing presentation is very short. This part actually the most important section to make a summary of the points presented. However, the presenter does not any expression about summarizing the presentation.

#### 2) Handling the Questions and Answer Session

Script 10.

Any question guys?

Questioner 1 : Can you tell me a simple way to understand about crowdfunding?

Presenter : Crowdfunding is one of **alternative** to get a capital that is possible many people **joint** to realize a comercial project or fundraising to social interest. In crowdfunding there **isn’t customers** but backers, there **isn’t products** but projects, there isn’t business owner but creator, there **isn’t payments** but pledges.

Questioner 2 : In your opinion **how high the level successfully of crowdfunding?**

Presenter : In my opinion that if the proposal or business idea is interesting, there is a big possibility **to getting** fund from investors. So the business idea can realize to be a real business.

Questioner 3 : Is a crowdfunding **can be succeed** in thrive country?

Presenter : Yes, it is. You can see the reality in Indonesia, our country is the thrive country, and crowdfunding can be **succed** here. There are some bussiness ideas and **projects had realized** with it

Questioner 4 : Can you mention some media that provide a crowdfunding?

Presenter : The media of crowdfunding are wujudkan.com, patungan.net, ToGather, gagas.web.id.

Analysis 10.

First, in terms of grammatical competence. There are so many grammatical mistakes made by both the presenter and the questioners. The word choice of *Joint* is not suitable in the utterances responded by presenter for the first questioner. Questioner 2 makes grammatical mistake on formulating a good question. The expression of *how high the level successfully of crowdfunding?* should be changed into ... *How high the level crowdfunding is done succesfully?*

Furthermore, Questioner 3 fails to make passive. The Expression of *can be succeed* should be *can be succeeded*. The words *can be succed* also need to be changed into *can be successful*.

Second, in terms of the expression of asking questions, the questions delivered by the questioner 1 and questioner 2 are quite polite. They use less direct questions by saying *Can you tell me...* and *In your opinion....* . While for questioner 3 and questioner 4, they utter direct questions that simply indicates too aggressive.

## 7. Conclusion

As a conclusion of this paper, there are some mistakes made by the presenter in delivering English presentation on business issue. The mistakes appear on the organization of the presentation, the word choice and the grammar. The last part of the opening on about how to organize the presentation is very important. But this is not successfully done by the presenter.

Introducing and explaining the visuals are also essential in English presentation. The audience expects to get detail information about the topics or issue presented.

The last, the presentation also involves the questioners. There are some polite ways how to ask questions. This will show that the questioners are nice and less aggressive.

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**STATISTICS THINKING PROCESS ON ELEMENTARY SCHOOL STUDENTS IN SOLVING THE STATISTICS PROBLEM****Oemi Noer Qomariyah, 2015**

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**Dr. Tatag Yuli Eko Siswono, M.Pd.**  
**STATE UNIVERSITY OF SURABAYA****ABSTRACT**

Statistics contains the daily life problem that faced by most students. That daily problem probably contains the statistical situation, so the purpose of the research is to describe the thinking process when responding the problem related by describing the statistical data display on fourth grade of elementary school. It broads the necessary perspective to conduct the further research on teaching and learning statistics in elementary school especially, which there has been a tendency to focus narrowly on the graph on the handling data, describing data and data analysis (Shaughnessy, Garfield, & Greer, 1996). The research is qualitative by a student as subject. The data collection is done by giving a test to the subject continued with the interview. The next is analyzing data. Subject was given a test included by describing the problem of statistics data display. Then subject was asked to answer the question. Result test showed that subject was able to describe or depict the data display correctly such as (1) Subject was able to use the relevant features for displaying data, (2) Subject was able to use the relationship between the display for recognizing when the different data presented, (3) Subject was able to evaluate the effectiveness of representative data display, (4) Subject was able to identify the data value unit generally.

Keywords: statistical thinking, describe the data display

## INTRODUCTION

Responding the important role at information and data on the current technology, needed the reformation in statistical thinking major at all the grade levels (Autralian Education Council, 1994); National Council of Mathematics Teacher, 1999, 2000: School Curriculum and Assessment and Curriculum Authority, Wales in 1996 in Jones et. al (2000). Similarly at Indonesia curriculum, this reformation has advocated the the broaden approach to learn statistics. The broden perspective creates the necessary to continued reseach about teaching and learning statistics exactly in elementary school, it has been happened the tendency to focus narrowly on the graph on the handling data, describing data and data analysis (Shaughnessy, Garfield & Greer, 1996). Although most of students statistics thinking elements and the learning have been investigated (Bright & Friel, 1998; Cobb,1999; Curcio, 1987; De Lange, van Reeuwijk, Burrill & Romberg, 1993; Gal & Garfield, 1997). However, the unemerge research of statistical thinking developed the detail cognitive model. According Snee, (1999) statistical thinking means the thinking process in recognizing variation around us and presenting in everything that we do, the works of interconnected process, and identifying the characteristics, measurement, management, and reducing variation provides the repairing chance.

This thinking process research was in mental activity generates the new mental representative throught information transform into cognitive sturcture by assimilation, acomodation and abstraction that can be observed in appear attitude of questions and that individual result solving in doing a test. Furthermore, the definition of statistical thinking process is a process of thinking about describing and displaying data.

Statistical problem is the problem contained the activity in collecting data, summarizing/displaying data, analyzing data by particular method, and interpreting the result analysis. The research focussed on statistical thinking detail in solving the statistical problem by describing the data display.



**Table 2.5.** The detail of statistical thinking process in solving statistical problem related by describing the data display

<b>Statistical thinking stage</b>	<b>The detail process of statistical problem</b>
Describing and Displaying Data	Using the relevant features to display the data
	Using the numeric relation between display to recognize when the different data presented
	Evaluating the effectiveness of representated data display
	Identifying the data value unit generally

Research subject was a fourth grade student of elementary school by considering that statistics is the first time material given at elementary school. In addition, Piaget’s theory states that skill to build up the numeric relationship started developing in concrete operational stage, it is 7 upto 11 years old. It means that statistical thinking begin in elementary school students. Based on the explanation, the researcher is interested to analyze how the elementary school student statistical thinking process in solving the statistical problem by describing the statistic data display.

**RESEACH METHOD**

**Reseach Design**

The research is to describe the thinking process when responding the problem by describing the statistic data display elementary school student. Therefore, this research type is descriptive qualitative. Researcher gives a test to the subject, then conducting the interview to know deepest about the uncover thing in a test. Result data is analyzed based on the applied framework in theoritical framework.

**Research Subject**

Research subject is a fourth grade student of elementary school that has the high capable in mathematics. It is got from the result test and based on the concultation result to the teacher.

## **Research Instrument**

The main instrument of the research is the researcher itself. While the supporting of this research as follows:

1. Test is used to get the data about the subject capable description in making equation. Test contained an equation, then subject is asked to make the similar equation that equal with the equation test
2. Interview guide in this study is semi structured or open. Subject is interviewed based on the result test.

## **Research Procedure**

Research procedure consists of three stages described by following:

1. Preparation Stage  
The research preparation stage examines theory in making equation's skill refers to part of reversibility characteristic.
2. Implementation Stage  
The research implementation stage selectes the subject. Furthermore, researcher give a test to the subject, then followed by interviewed based on the work resultt.
3. Analysis Stage  
The research analysis stage analyzes the data and report writing.

## **Data Analysis Technique**

Result data was analyzed with references to (i) the equation subject made number (ii) subject's way in making each the beginning equivalent equation. Analysis conducted after finishing the interview. Then data analysis conducted by following step: (1) data reduction; (2) data exploring; (3) drawing conclusion.

## Finding the Data and Discussion Analysis

### Test Result

A given test to the subject as follows:

<b>TEST (30 MINUTES)</b>
<p>Given data about the IPA exam score to the fourth grade 25 students at SDN Jombatan 3 Jombang by recognizing the score list as follows:</p> <p>65, 82, 76, 68, 78, 85, 65, 58, 91, 76, 73, 85, 76, 73, 85, 76, 95, 85, 63, 65, 93, 79, 80, 86, 68, 65, 79, 91.</p> <p>Question:</p> <ol style="list-style-type: none"> <li>1. What is the highest score of IPA exam at fourth grade students of SDN Jombatan 3 Jombang?</li> <li>2. What is the lowest score of IPA exam at fourth grade students of SDN Jombatan 3 Jombang?</li> <li>3. What kind of score that appears at fourth grade students of SDN Jombatan 3 Jombang?</li> <li>4. Make the table of IPA exam score at fourth grade students of SDN Jombatan 3 Jombang!</li> <li>5. Make the conclusion based on the above table!</li> </ol>

**Table 1:  
Subject Result in Solving the Statistical Problem**

<b>Question</b>	<b>Subject Answer</b>	<b>The Detail Process of Subject Thinking</b>
<p>1. What is the highest score of IPA exam at fourth grade students of SDN Jombatan 3 Jombang?</p>	<p>95</p>	<ul style="list-style-type: none"> <li>• Using the relevant features to display the data</li> <li>• Using the numeric relation between display to recognize when the different data presented</li> </ul>
<p>2. What is the lowest score of IPA exam at fourth grade students of SDN</p>	<p>58</p>	<ul style="list-style-type: none"> <li>• Using the relevant features to display the data</li> <li>• Using the numeric relation between display to recognize when the different data presented</li> </ul>

<p>Jombatan 3 Jombang?</p>																																	
<p>3. What kind of score that appears at forth grade students of SDN Jombantan 3 Jombang?</p>	<p>85,76 dan 65</p>		<ul style="list-style-type: none"> <li>Evaluating the effectiveness of representated data display</li> </ul>																														
<p>4. Make the table of IPA exam score at forth grade students of SDN Jombatan 3 Jombang!</p>	<table border="1"> <thead> <tr> <th>Score</th> <th>Total</th> </tr> </thead> <tbody> <tr><td>95</td><td>1</td></tr> <tr><td>93</td><td>1</td></tr> <tr><td>91</td><td>2</td></tr> <tr><td>86</td><td>1</td></tr> <tr><td>85</td><td>4</td></tr> <tr><td>82</td><td>1</td></tr> <tr><td>80</td><td>1</td></tr> <tr><td>79</td><td>1</td></tr> <tr><td>78</td><td>1</td></tr> <tr><td>76</td><td>4</td></tr> <tr><td>68</td><td>2</td></tr> <tr><td>65</td><td>4</td></tr> <tr><td>63</td><td>1</td></tr> <tr><td>58</td><td>1</td></tr> </tbody> </table>		Score	Total	95	1	93	1	91	2	86	1	85	4	82	1	80	1	79	1	78	1	76	4	68	2	65	4	63	1	58	1	<ul style="list-style-type: none"> <li>Identifying the data value unit generally</li> </ul>
Score	Total																																
95	1																																
93	1																																
91	2																																
86	1																																
85	4																																
82	1																																
80	1																																
79	1																																
78	1																																
76	4																																
68	2																																
65	4																																
63	1																																
58	1																																

<p>5. Make the conclusion based on the above table!</p>	<p>The highest score of IPA Exam in fourth grade was 95, the lowest score was 58. Score above was more than the value 65. It can be stated that IPA Exam was Good</p>	<ul style="list-style-type: none"> <li>• Using the relevant features to display the data</li> <li>• Using the numeric relation between display to recognize when the different data presented</li> <li>• Evaluating the effectiveness of represented data display</li> </ul>
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Based on the Subject Result in Solving the Statistical Problem above, gotten the detail that subject thinking process in solving the statistical problem as follows:

1. Subjects answered question number 1 and 2 with the way in organizing data from highest upto lowest. It shows that subject did the statistical thinking process of the relevant data used to display the highest to lowest data. Then, using the numeric data between display to recognize the different data namely highest data and lowest data
2. Subject answers the question number 3. It shows that subject did the statistical thinking process by evaluating the effectiveness of represented data display. In organizing data way, got the sequence IPA score from highest to lowest. Subject was able to evaluate the same score in each sequence, subject could mention score 84, 76 and 65 as the appear data in much score totally.
3. Subject answers the question number 4. It shows that subject did the statistical thinking process by identifying the data value unit generally. Subject made the group based on the score and score total in IPA, got IPA score table in a matrix form. This table probably subject can summary the data eventhough it is simply and reached score predictable.
4. Subject answered the question number 5. It shows that subject did statistical thinking process by using the numeric relationship between data display to recognize the data when it was displayed in a table (the answer of number 4). Subject was able to evaluate the effectiveness of represented data display by summarizing that there were many students get score above 65 than under 65.

## CONCLUSION

Based on the findings and discussion, gets the conclusion about the statistical thinking process in solving the statistical problem by describing the data display, the statistical thinking process in solving the statistical problem by describing the data display as follows:

1. Subject experienced the statistical thinking process in relevant data used to display the highest to lowest data by organizing the data.
2. Subjects were able to use the numeric relationship between data display to recognize the different data namely the highest and lowest data
3. Subject experienced the statistical thinking process by evaluating the effectiveness of represented data display. Subject made the data display in a different table form than before. Subject probably could develop the data identification and conclusion
4. Subject experienced the statistical thinking process by identifying the data value unit generally by data group in same score, so subjects were able to mention the unit data totally in most appearance. Subject also could make the conclusion simply by organization that there were many students get score above 65 than under 65.

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**ASSISTANCE COMPILATION MODULE AND LESSON PLAN OF CRAFT AND  
ENTREPRENEURSHIP SUBJET TO PRODUCE FACE CREAM FOR SCIENCE TEACHERS  
HIGH SCHOOL AND VOCATIONAL SCHOOL IN KEDIRI**

Titik Taufikurohmah, Bertha Yonata and Siti Tjahjani.

**Abstract:** The background of this mentoring activity is the enactment of curriculum 13 where there are several new subjects in high school and vocational including craft and Entrepreneurship. In line with science and technology program For Campus Innovation and Creativity (IBIKK) at the Department of Chemistry in 2015 entitled Entrepreneurial Cosmetic Nanogold the assistance activities preparation of lesson plan and modules for science teacher from high school and vocational school Kediri city is themed manufacture of cosmetics. Craft and Entrepreneurship are lessons that will equip students with life skills. The content of science and technology in these subjects will be the basis for providing life skills to students. The method used in this activity begins with the delivering and sharpening the material using media power point. Theories related to the process of making a creamy discussed both chemical and physical. Natural ingredients used in cosmetics as an essential material is biology content. Furthermore, the participants practiced how to make facial cream. The process of making this creamy was demonstrated in front of the class to be observed by all participants. The next activity is assisting the arrangement of lesson plan and manufacturing modules. The results of these activities are all participants from high school and vocational school science teachers in Kediri managed to create a module that is validated by the lecturer of Biology, Chemistry and Physics Faculty of Mathematics and Science, State University of Surabaya.

**Keywords:** craft, entrepreneurship, science and technology, innovation, lesson plan, the module.

### **Introduction**

Skills and Entrepreneurship subjects are new subjects at the high school level that will use the curriculum 2013 or K13. Curriculum 2013 will soon be applied to the entire high school and vocational school in Indonesia including Kediri. In order to implement the curriculum 2013 at the high school and vocational further Kediri local Primary Education department concerned to immediately set up of the teachers to be ready to teach subjects and entrepreneurship skills at their work place(school). More precisely is sharpen the material, preparation of lesson plans and modules for these subjects. The activities are intended to bring experts from universities to assist and validate the lesson plan and the module. The workshop participants for 2 days are consisted of science teachers at high school and vocational school in Kediri.

Skill and Entrepreneurship need to be based on mastery of Science and Technology in order to make innovations towards the maximum benefit. Entrepreneurship innovation effort at campus that ongoing in 2015 in The State University of Surabaya is self-employed in particular facial cream. The success of this innovation is not wasted away, but followed by the transfer of science and technology in high school and vocational school in Kediri through assistance for the preparation of lesson plans and modules in this activity. The university as a center for technological innovation development to be a reference and education below the reference level in this high school and vocational School in Kediri. The findings of this new research results be

disseminated and used as topics and material preparation of lesson plans and modules that will be taught at the high school and vocational school level.

Science and technology transfer efforts in the preparation of lesson plans and modules in Skills and Entrepreneurship subjects involves lecturers from the Faculty of Mathematics and Sciences, State University of Surabaya, professor of Chemistry, Physics and Biology. Assistance activities preparation of lesson plan and module is done in 2 days, Friday and Saturday, 30 to 31 October 2015 in SMK Pawiyatan Daha 1 Kediri. The event was took place from 8 am to 5 pm for 2 days. All participants got a sharpening workshop materials delivered through the media power point and also practice directly. Material provided then used as the basis for the preparation of lesson plans and modules. The resulting device is then validated by experts from academia, namely three lecturers from the State University of Surabaya.

The resulting product can be simultaneously used in entrepreneurship in schools involving teachers, students and the surrounding community. Application of the latest technologically derived from the results of scientific research on campus can be used and utilized in the scope of education at the high school level. Transfer of science and technology in education levels below also in products of daily needs of the very benefit many parties including researchers / lecturers, teachers, students and other user communities. The findings will move the spirit inspiring work of various communities. Expected future new discoveries from the world of education will become the motor of economic development of the nation. Students who are unable to continue the study can use the skills and entrepreneurship as the basis for developing the ability to live in the community. These skills can be used to make a living or as a livelihood.

## Material and Method

Explaining Theory:

Explaining and sharpening the theory underlying the manufacture of cream made using media power point as follows:

### RENCANA PELAKSANAAN PEMBELAJARAN

#### RPP-02

##### A. Identitas

Satuan Pendidikan	: SMA Negeri ..Kediri
Kelas / Semester	: XI / Genap
Mata Pelajaran	: Prakarya dan Kewirausahaan – Pengolahan.
Materi Pokok	: Mengenal Produk Kosmetik dari bahan pangan nabati buah
Sub-Materi Pokok	: Pengertian krem dan Aneka ekstrak bahan alam nabati dan hewani untuk bahan krem.
Pertemuan ke	: 1
Alokasi Waktu	: 2 x 45 Menit (1 pertemuan)



- Ada 3 (tiga) bahan yang utama dalam formula emulsi kosmetika :

1. Air

2. Lemak/bahan yang tidak larut dalam air

Misal : bees wax, laurex, lexemul As, lexemul Cs 20, cosmowex dll.

3. Surfaktan / pengemulsi

Misal : MPG, dimeticon, Pg-helm, Emulgen T dll

#### WHITENING CREAM

##### BAHAN – BAHAN :

Lexemul AS	80 gram – 100 gram , basis krem tahan asam
MPG	40 cc
Dimethicone 100 cps	2,5 cc
Methyl paraben	2 gram
Propyl paraben	1 gram
Aquadest	750 cc

Pemutih dan penghilang flek :

AHA Concentrate	2 – 10 %	: 20 – 100 cc
Whitening extract	0,5 – 2 %	: 5 – 20 gr , maximal 30 gr

Practice Skills:

Face Cream Making Procedure:

Due to the current state of much needed cream bleach that in practice this will be made cream bleach even so in the developed module also contains procedures for producing other types of cream. The other facial creams are night cream, moisturizing cream and morning cream. The whitening cream manufacturing procedures as follows:

1. Weigh Lexemul US = 100 grams, incoming container A.
2. Measure Dymethicone 100 cps = 2.5 cc, entered the container A
3. Weigh the Methyl paraben = 2 grams, incoming container A.

4. Weigh Propyl paraben = 1 gram, incoming container A.
  5. All materials in the container A is heated to melting
  6. Measure MPG = 40 cc, entered the container B
  7. (6) + = 500 cc Aqua heat, stirring until smooth
  8. (7) + (5) stirring until it forms a smooth cream
  9. (8) + Aqua remainder = 250 cc, little by little, stirring until blended and smooth
- Note:

- The addition of AHA concentrate or extract Whitening cream made at the time already finished but the state is still warm, then stirred or mixed until blended and smooth.
- Dosage can be used single- use can also be used alone or combined.
- It is important to remember that the results so cream should have a pH < 5

Practice entrepreneurial skills manufacture of products such as face cream using the following procedure:

Furthermore, the resulting beige serve entrepreneurs with product packaged in pots, labeled or etiquette how cream is applied and also the building blocks of beige label. Finally all products produced wrapped in plastic airtight so that the quality of beige is still good, and the last entry in cardboard packaging products in order to attract more consumers.

Entrepreneurship:

Analysis of simple self-employment in the production and marketing of cream made to the capital required and the gains. This simple analysis gives an overview of how this entrepreneurial easy to run because of the market or users are men and women who need cosmetics. Suit the current conditions in which many persons do face cream production processes that harm consumers because materials that are not appropriate designation. Cosmetics entrepreneur should this be done by people who have knowledge including later by graduates from high school, vocational school and the teachers so that the safety of the product can be accounted for.

Production of 1 kg cream capital	Selling Price 1 kg	Benefit
Basic Ingredients 1 recipe = 200,000	each pot Cheapest 20,000 x 80 = 1,600,000	1,130,000 pot per kg cream
Packaging = 80x 3000 = 240,000	When each pot 25,000 x 80 = 2,000,000	1,530,000 pot per kg cream
Equipment = 20.000	If each pot 30,000 x 80 = 2,400,000	1.93 million pot per kg cream
Other materials = 10,000	50.000 x 80 pot=4.000.000	3.530.000 per kg cream

Preparation lesson plan and module:

Lesson plan preparation and module assistance are based on theory and practice of skills and entrepreneurship that had been done in front of the class. All participants use all its capabilities in this workshop to create new lesson plan and the new module. Other sources used include libraries from the Internet, textbooks and workshop materials. Furthermore, participants who have successfully set up the lesson plan explain the results to the class. Other participants criticize the result.

### Results and Discussion

Lesson plan written results following is a fragment of lesson plan as follows:

#### J. Learning Steps

Activities	descriptionn	Time alocation
Introduction	<ul style="list-style-type: none"> <li>♣ Greeting and Checking student attendance</li> <li>♣ Teachers show presentations of various products cosmetic treatment works , and provide an opportunity for learners to observe</li> <li>♣ The teacher writes the learning objectives</li> </ul>	10 minutes
Main	<ul style="list-style-type: none"> <li>♣ observes :</li> <li>♣ Learners observe the presentation of various products from the cosmetic treatment works plant and animal materials.</li> <li>♣ Learners read teaching materials regarding cosmetic treatment process of vegetable and animal materials.</li> <li>ask :</li> <li>♣ Teachers conduct debriefing with the students, for example :</li> <li>- What is an emulsion and cosmetic formulations.</li> <li>reasoning :</li> <li>♣ The teacher provides the basic concepts , instructions , references required in learning</li> <li>try :</li> <li>♣ Students browsing the internet looking for pictures of beige processing products in the morning , night cream , creamy moisturizer etc .</li> <li>networking :</li> <li>♣ Each student express opinions , ideas and comments freely</li> </ul>	60 minutes
Closure	<ul style="list-style-type: none"> <li>♣ Students make conclusions learning materials to help teachers</li> </ul>	20 minutes

Activities	descriptionn	Time alocation
	<ul style="list-style-type: none"> <li>♣ Evaluate to measure the achievement of learning</li> <li>♣ Students reflect on the implementation of learning</li> <li>♣ The teacher presents information about the task of making a clipping a variety of cosmetic products with natural ingredients of vegetable and animal that are around.</li> <li>♣ Convey information regarding the material that will be presented at an upcoming meeting</li> <li>♣ The activities ended by greetings</li> </ul>	

K. Assessment

1. Form of Assessment

- a. Written test
- b. performance

2. Instrument

Written test

- a. Rubric Assessment Religious Attitude and Social Attitude (attached )
- b. FAQ Activity Assessment Rubric (attached )
- c. Written Assessment Rubric (attached)
- d. Rubric Assessment show performance (clipping)

3. Assessment Guide

- a. Written test answer keys attached

Assessment Guide religious attitudes and social attitudes, debriefing and assessment of the performance of the group attached

Module results

Here is a fragment of a module that successfully prepared by the workshop of participants of high school science teachers and vocational Kediri.

“Cosmetics derived from the Greek word 'kosmetikos' that have meaning to decorate or set of skills. Definition of cosmetics in the Regulation of the Minister of Health RI No. 445 of 1998 is described as follows: Cosmetics is a substance or mixture of ingredients for the rub, attached, poured, sprinkled, or sprayed on, put in, is used on the body or parts of the human body with a view to clean, maintain, add attractiveness or alter appearance, protecting in order to remain in a state of good repair of body odor but are not intended to treat or cure a disease. (MOH, Law on Cosmetics and Medical Devices, 1976). In the cosmetics definition, there is a sentence 'is not intended to treat or cure a disease', the statement implies that the use of cosmetics is not intended to affect the structure and function of the skin. In 1955, Lubowe coined Cosmetics as a combination of cosmetics and drugs that are able to affect physiology of skin positively but not drugs, and followed in 1982, Faust suggested the term

medicated cosmetics, which is a kind of cosmetic that is also beneficial to improve and maintain skin health, such as anti-dandruff preparations, deodorant, anti-prespirant preparations, preparations for influencing the color of the skin, and anti-acne preparations.

The main purpose of cosmetic use in modern society is for the personal hygiene, increase the attractiveness through make-up, improve self-confidence and a feeling of calm, protect skin and hair from damaging ultraviolet rays, pollution and other environmental factors, prevent aging, and general help a person enjoy and appreciate life. (Retno Iswari, 2007: 7). While cosmetics are cosmetics hipoalergik in which do not contain substances that can cause irritation and sensitization reactions. Cosmetics of this type is safer cosmetics for skin health.

Many ingredients that often cause irritation reactions and sensitization have been excluded from the list of cosmetics hipoalergik such as arsenic compounds, aluminum sulfate, aluminum chloride, balsam of Peru, phenol, fern, formaldehyde, gum arabic, lanolin, mercury compounds, parafenylenediamin, bismuth compounds, oil of bergamot, oil of lavender, salicylic acid, resoisinol, hexachlorophene and others.”

From lesson plan and module it shows that the workshop is success. The teachers are able to arrange lesson plan by integrating scientific approach mandated by curriculum 2013.

### **Conclusion**

Lesson plan preparation assistance activities and lesson modules for new Skills and Entrepreneurship high school and vocational school teachers Kediri resulted in several conclusions as follows :

1. Lesson plan for Skills and Entrepreneurship subjects successfully made by high school teachers and vocational Kediri and validated by three experts from the fields of chemistry, physics and biology.
2. Module for Skills and Entrepreneurship subjects successfully made by high school teachers and vocational Kediri and validated by three experts from the fields of chemistry, physics and biology.
3. Assistance preparation of lesson plan and this module bridges the transfer of scientific information emerging from the campus to the high school and vocational advancement of science and technology so that the gap between the two can be minimized.

### **Acknowledgement**

1. Thanks to the State University of Surabaya through the Dean of Mathematics and sciences and staff who have been pursuing this activity can take place.
2. Kediri City Government through the Department of Basic Education has facilitated these activities in one high school in the town of Kediri.

3. The Ministry of Research and Technology and Higher Education has launched a program that IbIKK so that entrepreneurial innovation of the campus in the program can be transmitted in high school and vocational curriculum Kediri.

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# SMALL MEDIUM ENTERPRISE (SME) PARTNERSHIP MODEL USING THE TRIPLE HELIX TO IMPROVE COMPETITIVENESS TOWARDS ASEAN ECONOMIC COMMUNITY

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## Abstract

Currently, the growth of small and medium enterprises (SMEs) has been growing rapidly; therefore it requires a proper management considering the crucial role of SMEs for Indonesian's economy. One of supporting program to SMEs is a partnership program. Small business partnership program aims to improve the capability of SMEs to be more responsible and more independent through capital support and training on human resources. Professional and skill of human resources will support marketing and business sustainability in the future. To increase competitiveness of SMEs can be done by concerning on two aspects, these are: internal and external factors. Internal factors include the institution of research and development, human resource capabilities, human resource development, and technology. External factors include partnership support in term of capital, government support for research and development, intellectual property rights, and development of networking. Moreover, the capabilities to innovate and to develop partnership are important factors in improving the competitiveness of SMEs.

The method used to develop the partnership model is the concept of the triple helix. Triple Helix concept is one solution of the constraints faced by businesses. This concept facilitates the creation of mutual collaboration among the three parties involved. One of the goals drawn up SME partnership model by employing Triple Helix concept is to examine the role and contribution of university, government and private sector / industry. The result of research can be used by the parties concerned, for example: Local Government as policy makers in this case is the Department of Trade and Industry, Department of Cooperatives and Small and Medium Enterprises. University is able to use the results of research to create a model of community empowerment, while the private sector i.e. the bank and the market for SME products also contribute to formulate policy in developing competitive product of SMEs.

**Key words:** *Small and Medium Enterprises, Partnerships Model, Triple Helix*

## **INTRODUCTION**

Currently, the growth of small and medium enterprises (SMEs) has been growing rapidly; therefore it requires a proper management considering the crucial role of SMEs for Indonesian's economy. One of supporting program to SMEs is a partnership program. Small business partnership program aims to improve the capability of SMEs to be more responsible and more independent through capital support and training on human resources. Professional and skilled human resources will support marketing and business sustainability in the future. To increase competitiveness of SMEs can be done by concerning on two aspects, these are: internal and external factors. Internal factors include the institution of research and development, human resource capabilities, human resource development, technology. External factors include partnership support in term of capital, government support for research and development, intellectual property rights, and development of networking. Moreover, the capabilities to innovate and to develop partnership are important factors in improving the competitiveness of SMEs.

## **LITERATURE**

SMEs in Indonesia have contributed to the employment amounted to 99.74% of the total national uptake and contribute to GDP amounted to 1013.5 billion or 56.73% [1]. Small Business partnership program aims to improve the ability of small businesses to be responsible and self-reliant through support for the capital as well as the training of Human Resources (HR) professionals and skilled in order to support marketing and business continuity in the future [2]. The globalization or global competition demands a lot of improvement, quality assurance services, management capabilities, in order to create public confidence in the products (goods and services) as well as the commitments offered, and to obtain the necessary public confidence "quality strategy" [3]. This has become one of the solutions in preparing for SMEs Indonesia in facing the ASEAN Economic Community (AEC) or the Asean Economic Community (MEA) in 2015 or the ASEAN single market by 2015. The purpose of the establishment of ASEAN Community in 2015, namely a community are forward-looking, living in an environment that is peaceful, stable and prosperous, united by a dynamic partnership and mutual care community [4]. The progress the progress of ASEAN should not involve the government alone, but must involve the business community, private sector, mass media, non-governmental organizations and of course the people of ASEAN member countries [4]. The model of the triple helix is a very useful framework to explain the relationship of the interaction [5]. The model of the triple helix is commonly used as a normative framework for understanding the interaction between the natural key factor innovation processes [6]. The model of the triple helix into the strategy undertaken by the government in developing the innovation system of national and regional level [6]. Structural Equation Modeling (SEM) is a set of statistical techniques that allow testing of a relatively complex set of relationships simultaneously [7].

## **RESEARCH METHODOLOGY**

The research methodology is a research process steps that must be carried out by researchers in the research. The steps of this research as follows: the first stage is study the existing partnership model using triple helix concept to define indicators. Through this stage will spreads a questioners for actors of SME's. The next stage is to test the validity and reliability. The test results are used for data processing by using SEM method for measuring the SME partnership model. Of measurement models using SEM, obtained structural models and then testing the structural model based on the hypothesis that affect

competitiveness. After the analysis of SEM models to obtain models of research and hypotheses that affect the competitiveness of SMEs.

## RESULT AND DISCUSSION

### a. Describe an Indicators Partnership Model

To identify the partnership model by using a triple helix, the first composed of variables and attributes that can describe the partnership model of SMEs.

Variables used are as follows:

1. Business Management
2. Rules and Policies
3. Technology and Information
4. Development of Human Resources
5. Increased Cooperation

Based on the variables, and then defined of indicators can describe each's variables. Table 1 shown an indicators that used in this research.

Table 1. Indicators Partnership Model of SME's

NO	INDICATORS
1	<p><b>Business Management</b></p> <p>a. The training for the improvement of business management knowledge</p> <p>b. The training to increase knowledge about consumer</p> <p>c. The training to increase knowledge about effective promotion</p> <p>d. The training for improvement of knowledge regarding the formulation of marketing strategies</p> <p>e. The training to improve the skills of administration</p> <p>f. The training to enhance the innovation capability</p> <p>g. The existence of monitoring the progress of SME</p>
2	<p><b>Rules and Policies</b></p> <p>a. The existence of a policy to improve the skills of employees (labor)</p> <p>b. The existence of the policy in the field of formal and informal education for employees (labor)</p> <p>c. The existence of the policy in the development of clusters for SMEs</p> <p>d. A policy in promoting cooperation between the public-private-college</p> <p>e. The existence of the ease of business licensing policies for SMEs</p> <p>f. The existence of policies giving incentives (subsidies, tax payments)</p> <p>g. The policy of the ease of obtaining credit for business development of SMEs</p>
3	<p><b>Technology and Information</b></p> <p>a. The technology incubator for SMEs</p> <p>b. The development of e-business</p> <p>c. Training, use of information technology</p>
4	<p><b>Development of Human Resources</b></p> <p>a. The existence of the center of the skills development of SMEs</p> <p>b. The existence of courses / training development of SMEs</p> <p>c. The existence of the apprenticeship program by the government or private</p>
5	<p><b>Increased Cooperation</b></p> <p>a. The existence of the cluster development</p> <p>b. The development of industrial zones</p> <p>c. The development of business development services</p> <p>d. The development of the relationship between SME-Private-Government-University</p> <p>e. The existence of network development and market penetration</p>

To get a real picture of the partnership model of SMEs, it is done distributing questionnaires to 100 respondents of SMEs. As many as 72% of respondents are male and

28% female. Of the entire questionnaire had been spread, test validation and reliability. Based on the validation and reliability testing, all the data is expressed valid and reliable. Validation and reliability test results used for the measurement models using SEM.

**b. Describe an Structural Model with SEM Methods**

SEM data processing is divided into two phases: measurements (measurement model) and structural phase (structural model).

1. Measurement models.

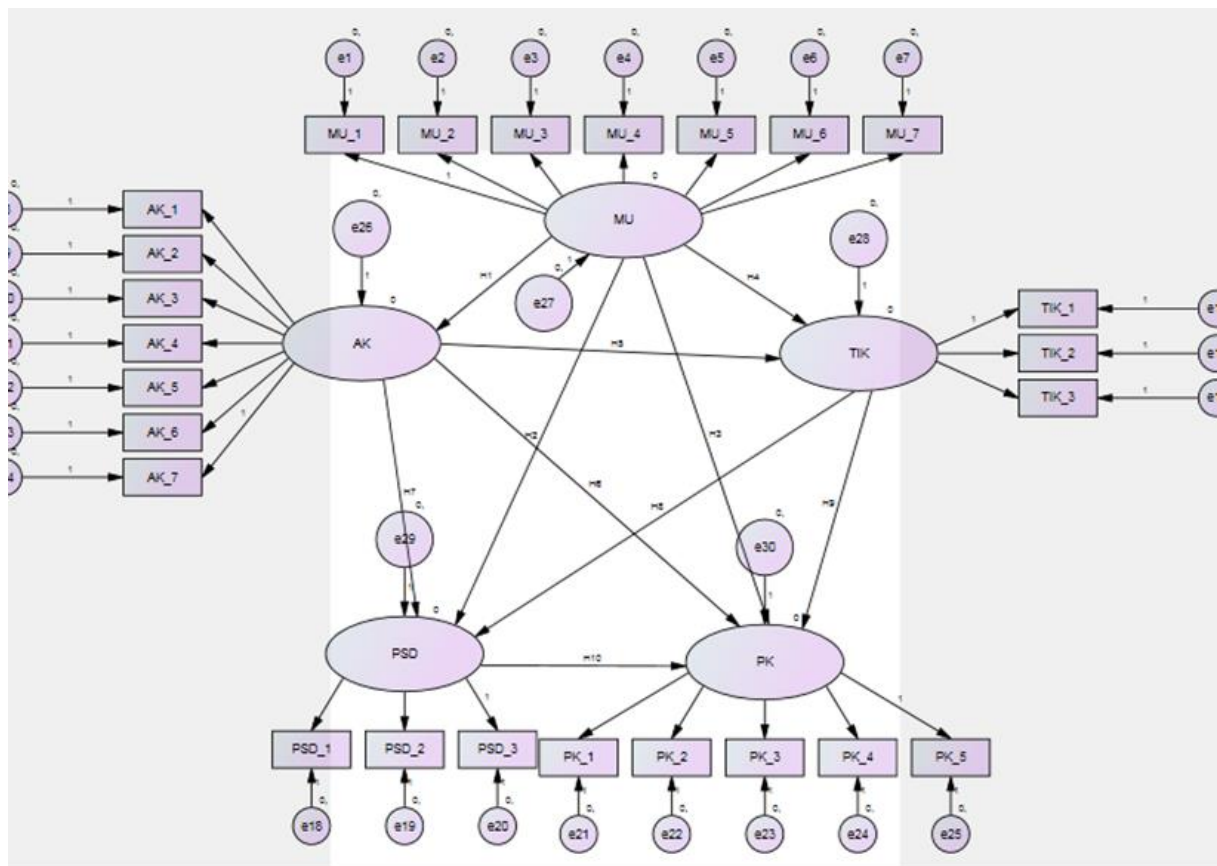
Measurement models done using CFA (Confirmatory Factor Analysis). In the measurement phase of the model, the first step is to test the goodness of fit (the suitability of both models) on the variables included in the construct of exogenous and endogenous construct. Having ascertained the model fit or fit then the next step is convergent ensure the validity of the construct validity. Construct validity was used to test whether the indicator of the latent variable is a construct that make up the latent variables.

2. Structural Model.

Stages of structural models are also divided into two stages. The first stage is to test the suitability of the model with the data and the second stage was to test the hypothesis of the study.

The first step to test indicators confirm that there is no assumption of indicators that go beyond the limits. Assuming that exceed the limits can be known from the value of goodness of fit or suitability models. If at the beginning of the model has been qualified measurement models fit models then all the indicators are part of the construct latent variables. Conversely, if the requirements fit model is still not fulfilled the necessary elimination of these indicators. Theoretically indicators that exceed the limits can be seen from the standardized residuals covariance value of each indicator is more than 2 or in other theories mentioned can be seen from the standardized value of less than 0.4. In this study uses the first rule that is seen from the standardized residual value covariance greater than 2. In order to ascertain whether any indicators that exceed the limits can be seen from the result of measurement models in each variable construct.

Results processing with methods of structural equation modeling, will then be analyzed structural models. From the model that has been done processing with SEM, furthermore, will be analyzed hypotheses based on the variables that affect the competitiveness of SMEs.



Picture 1. Structural model of all variables on the competitiveness of SMEs

- The following hypotheses will be analyzed based on structural models using SEM.
- H1: There is a significant relationship between management yourselves) with the rules and policies (AK).
  - H2: There is a significant relationship between Business Management (MU) with resource development (PSD)
  - H3: There is a significant relationship between Business Management (MU) with Enhanced Cooperation (PK)
  - H4: There is a significant relationship between Business Management (MU) with Information and Communication Technology (ICT)
  - H5: There is a significant relationship between the rules and policies (AK) with Information and Communication Technology (ICT)
  - H6: There is a significant relationship between the rules and policies (AK) with Enhanced Cooperation (PK)
  - H7: There is a significant relationship between the rules and policies (AK) with resource development (PSD)
  - H8: There is a significant relationship between Information and Communication Technology (ICT) with resource development (PSD)

**c. Describe an Structural Model Test**

After measurement models, further testing structural model. Based on measurement with SEM method using AMOS 20 there are four indexes that meet the criteria of fit, based on the rules of parsimony if there are one or two models fit the criteria have been met, then the model has been declared fit.

Table 2. Indeks *Goodness of Fit* structural model

<i>Goodness of Fit Measure</i>	Index	<i>Cut off</i>	Description
<i>Chi-square of estimate model</i>	1024,809		
<i>Probability Level</i>	0,000	≥ 0,05	Not Fit Model
<i>Goodness of Index (GFI)</i>	1,000	≥ 0,9	Fit model
<i>Adjusted Goodness of Index (AGFI)</i>	0,000	≥ 0,9	Not Fit Model
<i>RMSEA</i>	0,168	≤ 0,08	Not Fit Model
<i>RMR</i>	0,000	≤ 0,05	Fit model
<i>Comparative Fit Index (CFI)</i>	1,000	≥ 0,9	Fit model
<i>Tucker-Lewis Index (TLI)</i>	0,000	> 0,9	Not Fit Model
<i>Normal Fit Index (NFI)</i>	1,000	≥ 0,9	Fit model

*Resource: The calculation result data using AMOS 20*

Having ascertained the model fit, the next step is to test the hypothesis of causality, i.e. test whether the variables corresponding inter influential hypothesis. At this stage of testing this hypothesis can also be known coefficient value of each relationship between variables. This correlation coefficient values to determine the direction of the relationship is positive or negative and big changes if the endogenous variables exogenous variables change. Table 2 shows the results of testing with SEM. SEM or standardized coefficient for each variable.

**Table 3.** SEM coefficient value for Direct Impact

			Estimate	S.E.	C.R.	PLabel	
AK	<---	MU	.606	.111	5.485	***	H1
TIK	<---	MU	.366	.167	2.190	.029	H4
TIK	<---	AK	.446	.224	1.992	.046	H5
PSD	<---	MU	.062	.056	1.115	.265	H2
PSD	<---	AK	.191	.088	2.178	.029	H7
PSD	<---	TIK	-.069	.073	-.944	.345	H8
PK	<---	MU	.014	.148	.097	.922	H3
PK	<---	AK	.908	.264	3.441	***	H6
PK	<---	TIK	.033	.193	.168	.866	H9
PK	<---	PSD	.652	.376	1.735	.083	H10

*Resource: The calculation result data using AMOS 20*

P = \*\*\* = 0.000

From the table of results obtained direct influence between variables were described as follows:

1. Variable MU, positive effect on AK, ICT, PSD, and PK. The positive influence means that if the variable MU improved the process AK, ICT, PSD, and PK will also increase.
2. Variable AK positive effect on ICT, PSD, and PK. The positive influence means that if a variable is increased then the AK ICT, PSD, and PK will also increase.
3. Variable ICT positive effect on PSD and PK. The positive influence of ICT means that if a variable is increased then the PSD and PK will increase.
4. Variable PSD positive effect on PK. The positive influence means that if the PSD variables improved the PK will be increased.

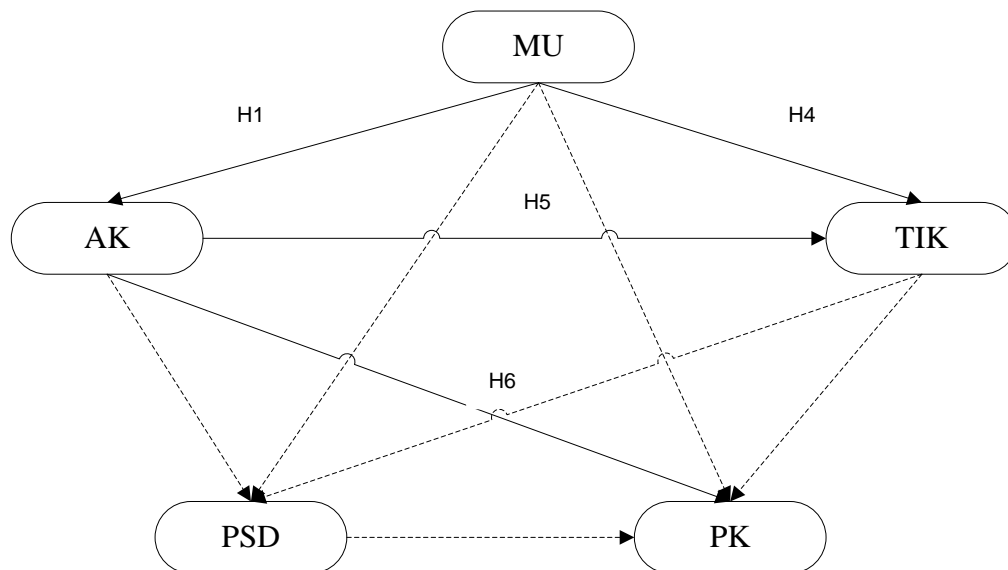
Having in mind the magnitude of the coefficient value of each - each variable next stage is to test the hypothesis by using CR value and probability. Whether there is any

effect parameter can be determined partially by the value of CR (Critical Ratio). To determine whether there is any effect of endogenous and exogenous variables on endogenous against endogenous, used the following terms:

1. The first parameter is calculated by comparing CR. CR standard on alpha of 0.05 is 1.96. If CR count > 1.96 or -CR count < -1.96 then there is the influence of endogenous or exogenous variables on endogenous against endogenous. Conversely, if CR count < 1.96 then there is no effect of endogenous or exogenous variables on endogenous against endogenous. When viewed at a significance level of alpha 0.1, then CR count compared to standard CR is 1.64.
2. Or it can also be seen from the level of significances  $\alpha = 0.05$ . If the value of significance (P) < 0.05 then there is the influence of endogenous or exogenous variables on endogenous against endogenous. Conversely, if the value of significance (P) > 0.05, there is no influence of endogenous or exogenous variables on endogenous against endogenous.
3. It can be seen from the t-value, if the value of the t-value > 0.5 (50%) or t-value < -0.5 then the bias is said to be a significant relationship.

**d. Partnership Model SME's**

The model generated from this study stated that there are several variables that do not have an influence on the competitiveness of SMEs. The model was tested with a confidence level of  $\alpha = 5\%$ . Figure 5.16 shows the model generated in this study.



Picture 3. Partnership Model SME's

**CONCLUSSION**

Based on the model results of this study, the hypothesis which has significant influence on the competitiveness of SMEs is:

1. H1: There is a significant relationship between Business Management (MU) with the rules and policies (AK)
2. H4: There is a significant relationship between Business Management (MU) with Information and Communication Technology (ICT)

3. H5: There is a significant relationship between the rules and policies (AK) with Information and Communication Technology (ICT)
4. H6: There is a significant relationship between the rules and policies (AK) with Enhanced Cooperation (PK)
5. H7: There is a significant relationship between the rules and policies (AK) with resource development (PSD)

## **ACKNOWLEDGEMENT**

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## **SIBI AND BISINDO WHICH ONE IS BETTER FOR DEAF AND MUTE PEOPLE EDUCATION?**

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### **INTRODUCTION**

Communication is the most prominent thing in doing relationship between human. Communication defined as information delivery process (Message, idea) from one to another so they can interplay each other. The definition above indicate that every human, no matter what is their purpose, requires interpersonal communication ability to ease them in sharing any information, interacting, and establishing teamwork in order to survive. There are some languages used in communication, for instance spoken language which is generally occupied by many people, yet there are some other people who are using sign language in the form of gestures. Moreover, this kind of language is commonly used by the deaf and speech impaired. In Indonesia, there are two types of sign language, *Komtal* (an approach for the deaf by using natural cues, fingers and standardized sign) *SIBI* (mostly like an dictionary of the usage of sign language) and *Bisindo* (Indonesian Sign Language).

There are four basic rights for the deaf, rights of using sign language, right of bilingual education (Indonesian language and sign language), right of accessibility, and right of having translation service. *Komtal SIBI* is a dictionary of sign language by Suparno (1997), which is subsequently assigned as official sign language of Indonesia. However, the deaf did recently not agree with the provision of this language. Started from an invitation to attend MoU signature conference about material translation of TV news applying *KOMTAL* by Ministry of Social Services. The invitation was addressed to central *GERKATIN* (a community for the welfare of the deaf) on March, 25th 2013 (iawd, [chane.org](http://chane.org), aced on April, 21st 2014). They ignored *Komtal SIBI* and preferred to use *Bisindo*.

The deaf were not agree with the use of *Komtal SIBI* as official sign language, since they were more familiar with the use of *Bisindo* in their daily life. Subsequent to that occurrence, the deaf who are incorporated in *GERKATIN* and Deaf Volunteer Organization (DVO) were campaigning "I Love *Bisindo* Movement" (Astuti, [solider.or.id](http://solider.or.id), accessed on April, 21st 2014). The deaf even proposed a petition to the Ministry of Social Service and Ministry of Education through [change.org](http://change.org) to authorize *Bisindo* as official sign language of Indonesia.

On February, 22nd 2014, the deaf repeated their objection in Celebrating Diversity meeting which was held in Ministry of Education and Culture, Jakarta, in order to celebrate International Disabilities Day (Atmaja, [satuharapan.com](http://satuharapan.com), accessed on April, 21st 2014). Department of Education Yogyakarta, on the contrary, has recommended *Bisindo* as the introductory language in SLB-B (special school) in DIY (Wijaya, [soldier.org](http://soldier.org), accessed on April, 21st 2014). Due to the urgent of this issue, Commission VIII of DPR (House of People's Representative) is giving responds to the protests by incorporating their aspirations to National Legislative Program (*Prolegnas*) to revise UU (law) No. 4, 1997 about people with disabilities (Commission VIII, [dpr.go.id](http://dpr.go.id), accessed on April, 21st 2014).

The research problem of this research is how the differences between interpersonal communication skills in the midst of *SIBI* sign language user and *Bisindo* sign language user are?

Furthermore, the aim of this research is to find out differences in the level of ability in doing interpersonal communication between *SIBI* and *Bisindo* user. It is due to the fact that interpersonal communication is the most influencing thing in the achievement of objectives within daily communication, especially for the deaf.

**Interpersonal Communication Skill**

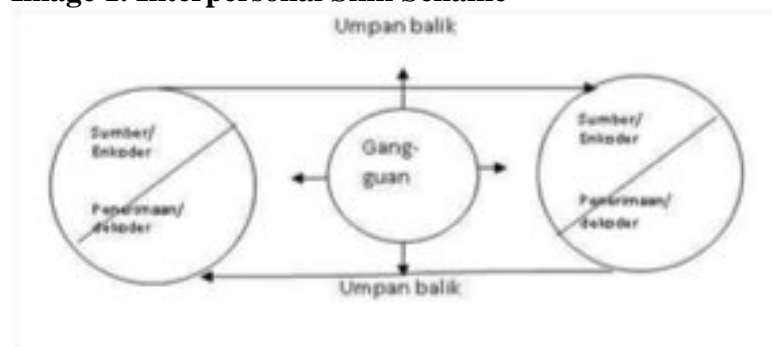
Skill is a person’s ability to understand a technique or a way to do something to be achieved. Furthermore, interpersonal communication is the process of delivering a message to others.

Interpersonal communication that is expressed by the experts, DeVito, stated that “Interpersonal communication is defined as communication that takes place between two persons who have a clearly established relationship; the people are in some way connected.” (Komariah,2009). According to DeVito, interpersonal communication is the communication that occurs between two people who have a clearly established relationship, which is connected through some ways. Whereas, Mulyana (in Sultan, 2010) stated that Interpersonal communication is the exchange of messages among people in face to face and everyone who are doing it will capture another’s reaction directly or spontaneous, either in a verbal or non-verbal communication. From both definition of interpersonal communication, it can be deduced that the characteristic of interpersonal communication is the clearly established relationship between two people, occurs face to face and is in some way connected.

There are three arguments about interpersonal communication that are expressed by Boener (1978); Capella (1987); Miller (1990) that was cited by DeVito (in Sultan,2010), that are as follows:

1. The fundamental concept of the communication components  
 The main component is identified by the process of receiving and delivering message from one to another or to a small group of people within some effect and opportunity that may give responses as soon as possible. That component can be browsed in the interpersonal communication charts in general as follows:

**Image 1. Interpersonal Skill Scheme**



The chart above shows 8 components from the communication process that is prominently needed to be observed by every communicator, they are:

- a. Context (environment) communication, this context is a complex thing since between physical dimensions, temporal dimension, and social psychology influence each other.
- b. The main receiver indicates the involvement of a person in communicating. The source of communication shows the sending of message.
- c. Encoding-decoding, someone starts the communication process constructing a message that is represented in a sound wave or even a piece of paper.

- d. Communication competency, refers to a person's ability to communicate effectively (Spitzberg and Cupach, 1989).
  - e. Message or channel, is the physical product from codification process. That message is influenced by code or a group symbol that is used for transfer the meaning of content of the message.
  - f. Feedback, is checking whether the success message has been received or not.
  - g. Interference is an obstacle in message delivery process, it can be either physical, psychological, or instrumental.
  - h. Communication effect, every communication always has the consequence or impact of one or more that has involved.
2. The fundamental concept of the dyadic relationship
 

Interpersonal communication concept that is based on a relationship, is stated as a communication that occurs between two people within clearly established relationship, for instance, the communication between a son and his father, the communication between two people in an interview, a dyadic (two people) communication that is not an interpersonal communication.
  3. The fundamental concept in the development of communication
 

The fundamental concept of interpersonal communication in the development of it is seen as the end of communications vulnerable development that is non personal (interpersonal) in one extreme and later become intimate in another extreme. This development suggests the development of communication interpersonal according to DeVito (1997), cited from Gerald Miller (1978), is marked and distinguished in three factors, namely:

    - a. Predictions based on psychological datas.
    - b. Explanatory knowledge.
    - c. Individual rules.

DeVito (in Komariah, 2009) stated that, "the five major purpose of interpersonal communication are to learn about self, others, and world; to relate to others and to form relationship; to influence or control the attitudes and behaviors of others; to play or enjoy oneself; to help others." Which means the first aim of interpersonal communication is to learn about one-self, others, and the world. The existence of interpersonal communication resulted in the ability of knowing who is he/ she and knowing the way how to convey an idea about another person so that they can understand what is actually the means of that thing.

### **Indonesian Deaf Children Communication System**

Children with hearing loss (AGP) that is widely known as deaf, defined as someone who experiences lack or loss of ability to hear. Language is representation of thought or idea about surrounding/environment which is represented by set of symbols that is agreed to made up the communication (Rusyani, 2013). Prabowo and Puspitawati (in Khotimah, University of Gunadarma's journal, 2006) stated that the development of the deaf child's language appears on the mastery of vocabulary, which is generally more proficient in the concrete language and the production of short sentences. L. Evans also stated that mastery of spoken language had by children with deaf is low, thus, it affects their academical appretition (in Sulastrri, *the scientific journal of special education*, 2013). In Indonesia, deaf children often use a language that is deviating from the rules of Indonesian language, so they find a difficulty to communicate properly (Tarmansyah, 1996).

### **SIBI and Bisindo**

*Komtal SIBI* is a translation of instrumental spoken language through movement of the hand and facial expressions. This language covers basic words from the simplest to the

most complex. A language must have affixes such as, *ber-*, *-nya*, *me-*, *pe-*, etc. while *Bisindo* is sign language which is coming from their mother tongue. This language uses the movement of both hands and facial expressions that cover the simple words in which the vocabulary is more limited than *Komtal SIBI*. *Bisindo* is created from children with deaf's mother tongue, which is later going to be used in common communication.

In Sulastri's research, it is summed up that utilization of *Komtal SIBI*, personal service allocation, motivation, and appropriate supporting media giving can enhance deaf children's ability in communication in the 2nd grade students of *SLB* (Special School) *Kartini, Batam*. Nonetheless, the weakness of this language is that teaching and learning process is too complex. According to Juniati (Ray in *Kompasiana.com*, 2012), *SIBI* is difficult to be learnt, especially for children. As a matter of fact, that *SIBI* is not the deaf's daily sign language but it is Indonesian language that is signed. On the other hand, the usage of *Bisindo* are simpler to be used in spite of the fact that it uses their mother tongue, more natural to be signed, and using simple words as well. Based on the Delphie's research (on *e-book*, 2007) psychologically, deaf children have little span of remembrance; therefore, their language development is less perfect compared to normal people. Hence, the advantage of using *Bisindo* is it is easy to be understood and memorized by deaf people. However, the weakness of *Bisindo* is the lack of vocabulary than in *SIBI*, so the language ability is lower than normal people.

## RESEARCH METHODOLOGY

### Time and Place of This Study

This study will be conducted in Malang and Yogyakarta where researcher chose *SMA-LB B* (Special Senior High School) as the sample. There are 5 *SMA-LB* in Malang which use *SIBI* sign language. Nevertheless, in Yogyakarta, *SLB* (Special School) uses *Bisindo* as intermediate language after being recommended by Department of Education Yogyakarta. Furthermore, it needs 5 months period to conduct the research.

### Population and Sample

The population of this research are deaf students of *SMA-LB* in all parts of East Java and DIY. Whereas, samples of the research are deaf students from some *SLB* in Malang and Yogyakarta. Samples of deaf students who use either *SIBI* or *Bisindo* were gotten from their dominant speaking habits.

Furthermore, the chosen samples were chosen using purposive sampling technique, in which this sampling technique was considering the characteristic of the sample. Sample characteristics with the following restrictions: 1) Respondents are deaf people, 2) Respondents are capable to read, 3) Respondents are students of *SMA-LB*, and 4) Respondents are mastering at least one kind of sign language, either *SIBI* or *Bisindo*. It was chosen due to the fact that it suited the objective of the researcher, in which aimed at determining interpersonal skill capability between student's *SIBI* user with *Bisindo* user.

### Measures of the Research

Measures of the research encompassed preparative of various needs which is supported research process such as tool and instrumental adaptation preparation, as well as determining sample certainty.

### Details Activities

Details activities in this study encompassed determining research sample which used deaf students of *SMP-LB* and *SMA-LB* in Malang and Yogyakarta. On the other side, those were

detailing in determining instrument and operational definition, the variable used in this study is interpersonal communication skill. Operational definition of this study are as follows:

1. Interpersonal Communication Skill  
Individual's capability in sending and receiving information to other for a particular purpose.
2. *SIBI*  
Sign language which is the translation from oral language to gestures by using one hand.
3. *Bisindo*  
Sign language which is the deaf's mother tongue, that uses 2 hands for gestures.
4. Deaf student  
A person who is loss or lack of hearing ability who are studying in certain school.

**Instrumental Adaptation**

The instrument used in this research was interpersonal communication scale (ICS) which is used to measure the level of interpersonal communication skill. Before being tested to the sample, the researcher was initially adapting the instrument. This was conducted to minimize cultural biases and applicatiob of deaf's sign language. These adaptations are in the form of try out test-analysis test-revision test. If after examining there is something need to be revised, the researcher will revise the inappropriate instrument as well, then it will be reexamined. It is constantly done by researcher so that the obtained results of instrument are valid and reliable.

**Data Collection**

Data collection was conducted by deploying the instrument to the sample. Research approach that has been conducted was comparative approach, in which it examined similar instrument in 2 different groups. In this study, descriptive quantitative method was being used. After result obtained of measuring through scale which was submitted to the two different groups, the researcher will describe about the results of the comparison between those groups.

**Data analysis**

Instrumental item analysis was using reliability test of the IBM statistics SPSS 21. Whereas, in final data processing, this was using descriptive analysis of single frequency of IBM statistics SPSS 21.

**RESULT AND DISCUSSION**

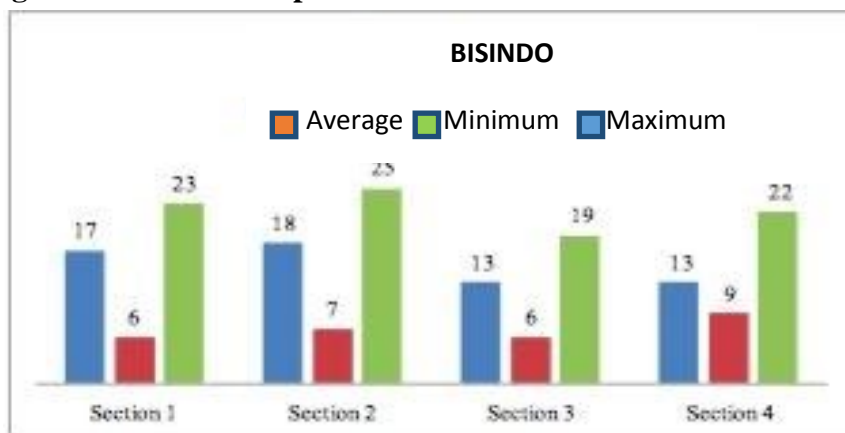
This study was conducted by 37 subjects who are 17-25 years old; it consisted of 24 male respondents and 13 female respondents. From 37 respondents, 23 respondents are indicated as *Bisindo* dominant users and 14 respondents are dominant in using *SIBI*. The score of their communication skill was divided into 3 categories, those are as follows :

**Image 2. Categories based on the score of each aspect**

Score	Category
1-5	Low
16-21	Moderate
22-30	High

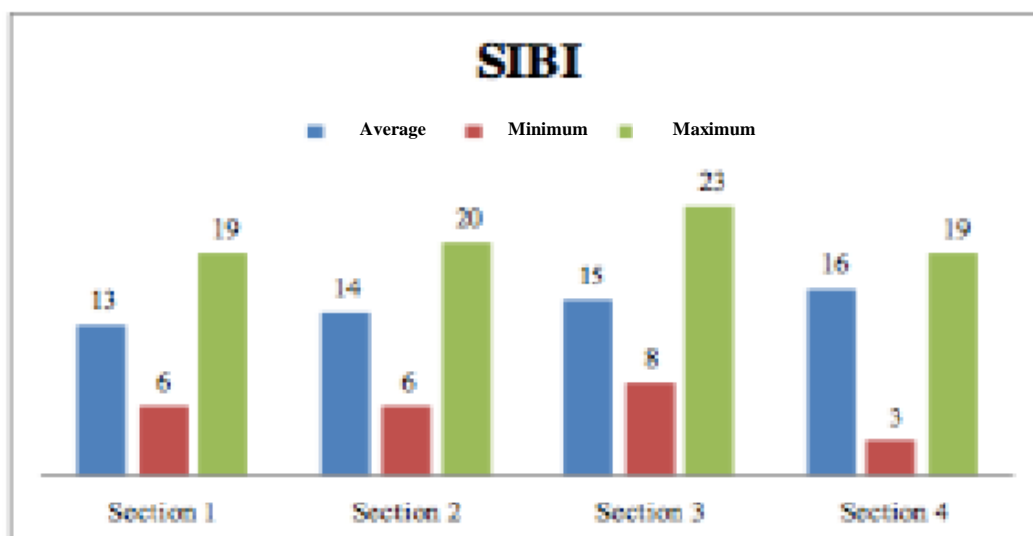
While the average score of the result of interpersonal communication on the use of language is as follows :

**Image 3. BISINDO Interpersonal Communication Score**



Grounded on the table which has been analyzed above, the result for Bisindo users as section 1 constitutes as the first aspect which revealed about conveying the message or information clearly to the other (sending clear message). In the BISINDO users, if it is seen from the average score, it is categorized in moderate category. Second aspect or section of interpersonal communication which discussed about listening is in moderate category. For the section 3 or third aspect revealed about conveying and obtaining respond or feedback to the person is categorized as low category of the Bisindo users. In other hand, the last aspect or section 4 which revealed about controlling emotion when interacting with another (handling emotional interactions) for the user of Bisindo are in the low category. For the result of the score of SIBI is:

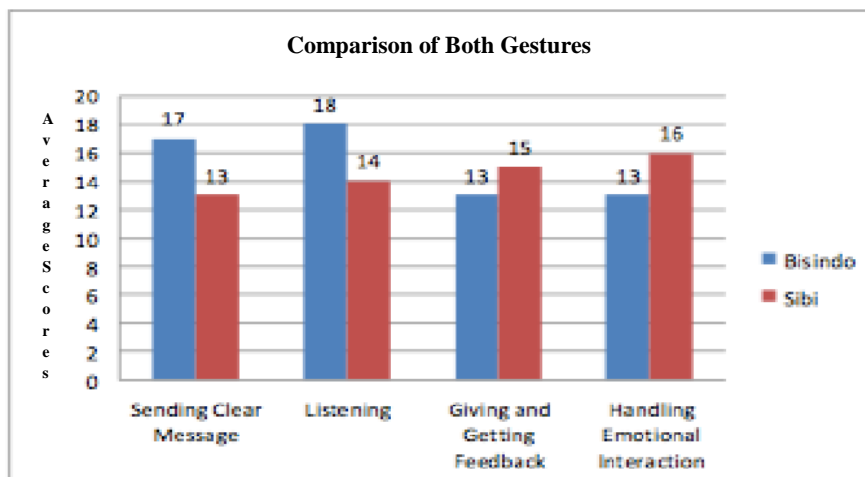
**Image 3. BISINDO Interpersonal Communication Score**



Based on the analyzed table above, the result of the SIBI users is as follows; *Section 1* (sending clear messages). In conveying a message to other speakers, the SIBI users are

categorized as low category. The second aspect (section 2) of interpersonal communication which discloses about listening or paying attention to other people while they are speaking (*listening*) has low category. For section 3, giving and obtaining responses while talking to others (giving and getting feedback) are grouped as low category for SIBI users. In the meantime, section 4 as the last aspect demonstrates that handling emotion when interacting with others (*handling emotional interaction*) has medium category. Therefore, in these three aspects of section 1, 2, and 3, the analysis result shows that the users of SIBI are lack of having good communication skills while using SIBI gestures.

**Image 4. Comparison of the average scores of both language**



Out of the table above, it can be stated that *Bisindo* comprises two medium aspects, and is higher than *SIBI*, namely the clarity in conveying messages, and the ability of understanding what is conveyed by other speakers. On the other hand, *SIBI* is dominant in the fourth aspect. It indicates that *SIBI* gestures have more prominences in handling emotion when interacting with others than *Bisindo* users.

However, in section 3, either *SIBI* or *Bisindo* does not give any responses and feedback due to their low category. Therefore, it is necessary to conduct a revision regarding to *SIBI* and *Bisindo* language for deaf children so that they will give and get more responses from other speakers.

The result of this research shows that body language (gesture) is one of means to deepen someone’s understanding in conveying and responding communication. As DeVito (in Sultan, 2010) states, conveying one’s messages to the receiver and vice versa is influenced by some factors including impairment. In deaf children, for instance, this impairment can be caused by the limitation of communication facility employed, namely using gestures or body language.

Grounded on the scale of interpersonal communication, it can be seen from the aspect of the clarity of delivering messages to the other speakers that from this research, *SIBI* language is classified as low category, while *Bisindo* is in medium category. In other words, communication by utilizing *Bisindo* is easier and more effective to be understood by the message receivers than communication by using *SIBI*. The deaf frequently undergo discrimination when they are communicating with those who can hear (Herman and Morgan, 2011).

In addition, this case can be affected by other aspects such as making a habit of communicating socially from the parents who realize since the early about the needs of deaf children (Herman and Morgan, 2011). Parents can provide hearing aids, rehearse children to

talk to others, and make the children understand what other speakers say. Grounded on the result of this research, from the aspect of handling emotion while interacting socially, a deaf person who employs *SIBI* is categorized as medium category. On the contrary, *Bisindo* is in low category. It can be signified that *SIBI* language can easily comprehend other speakers' point of views by using a detailed language when communicating.

Nevertheless, *Bisindo* users are easier to hear (in this case is "seeing") while interacting with other speakers, for it is grouped as medium category, while *SIBI* is in low category. It results from the gesture or body language employed is simpler and can be understood easily by the deaf. Moreover, the gestures used are taken from what the deaf experience in their daily life. According to Delphie (in e-book, 2007), deaf children psychologically have an ability to remember something briefly. Eventually, their language development is imperfect in which it indicates that they are not the same as those who can hear normally. Consequently, the prominence of *Bisindo* is easily memorized and understood by the deaf.

In general, in terms of responding those two body languages, the level of giving feedback tends to be low. It is part of inadequacies that the deaf have; since they are risky to have an ability to digest what other speakers say (Meadow, 2010). It results in the deaf who utilize either *SIBI* or *BISINDO* will have a tendency to find themselves in difficulties to give responses.

### **Conclusion and Implication**

Based on the result of this research, it can be concluded that there are different scores obtained by the *SIBI* and *Bisindo* users for deaf children. The differences of the use of this language lay on four aspects which have been revealed in measurement scale. The prominence of using *SIBI* language for deaf children is being able to handle emotion when they are interacting with other people if compared to the use of *Bisindo* language. On the other hand, deaf children who employ *Bisindo* language are easier to convey their messages to other speakers. Another benefit of using *Bisindo* language is in the aspect of concentrating on other speakers when they are speaking. However, both of these languages have infirmities, namely deaf children are not able to give their responses and feedback to other speakers. Further researchers are expected to focus on the individuals such as paying much attention to their psychological sides which become such a hindrance or influence to the result of the research including an individual who has different backgrounds starting from races, ethnics, ages, and personalities in which they become the variants in using the language. Lastly, the researchers should pay more attention to the measuring instrument which will be provided to the respondents in order to attain an accurate result.

### **Research Hindrances**

In this research, we had some hindrances in implementing it. We lacked subjects in spreading scales. It resulted from the time limitation that we had in conducting the research due to the fact that this research implementation is coincident with school examinations. Eventually, some targeted SLB did not give any permission for the research implementation. Furthermore, we found some constraints in using questionnaires. The questionnaires we employed were such translated questionnaires, and when the questionnaires were distributed, there were many subjects who did not understand the language used in the questionnaires. As a result, we carried out a questionnaire revision. It is also caused by the language mastered by the deaf children is in still inferior.



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# 21st CENTURY ENGLISH EDUCATION: HIGH ORDER THINKING SKILLS AND TECHNOLOGY SUPPORT

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## ABSTRACT

As a mean of communication, English takes an important role in 21 Century which provides chances and challenges. Mastering English will help the learners to be more survived in high competitive life. Teaching English including High Order Thinking Skills (HOTS) will be so relevant for the learner's future. HOTS will hone their critical thinking, logical thinking, and problem solving. Dealing with high technology development in 21st century, it will be better if English teaching learning process is supported by technology. It has supplemented English teaching in authenticity and literacy. Students can be highly motivated in learning English because it will be practical usage. Critical thinking, problem solving, and communication skills also can be developed by using technology to support learning. In this case, the use of technology of collaborative learning including learning environments with relevant task and creative project is required. The aim of this study is to review HOTS and technology support in English learning activities. The study was conducted on the basis of literature survey. In 21st Century, students must be fully engaged.

*Key Words: High Order Thinking Skills (HOTS), Technology, English Language*

## 1. INTRODUCTION

Century provides chances and challenges, for instance ASEAN plans to form a single market, ASEAN Economic Community (AEC) by 2015, which its goal is to become a single production base where goods can be manufactured anywhere and distributed efficiently to anywhere within the region. In ASEAN Free trade Area (AFTA), investors can invest anywhere in 10 Countries, including Indonesia. In addition, there is no tight restriction for workers to go work anywhere in these countries. If one is not ready, AFTA will be seen as a threat rather than an opportunity. Competition will get fiercer for him who is not well-prepared. To get ready for AFTA is the best choice.

All 10 countries of AEC agree to use English as the language for business in AEC 2015, so it is quite clear that English has become a necessity today. Learning English will become even more crucial. According to the fact, mastering English will help one to be more survived in high competitive life. Teaching English including High Order Thinking Skills (HOTS) will be so relevant for the learner's future. HOTS will hone ways of thinking such as their critical thinking, logical thinking, and problem solving.

Because of high technology development in 21st century, it will be better if English teaching learning process is supported by technology. It has supplemented English teaching in

authenticity and literacy. Students can be highly motivated in learning English because it will be practical usage. Web based technologies and powerful internet connections provide various new possibilities and latest trends for teachers and students. Then it makes educational environment more enjoyable.

## 2.1 HOTS (HIGH ORDER THINKING SKILLS)

Crawford in Polly further defined HOTS as being composed of three categories: “content thinking, critical thinking, and creative thinking”. Brookhart in Collins (2014) identifies definitions of higher-order thinking as falling into three categories: (1) those that define higher-order thinking in terms of *transfer*, (2) those that define it in terms of *critical thinking*, and (3) those that define it in terms of *problem solving*. Besides, Zohar’s in Tan Shin Yen (2015), attempt to clarify the dimensions of HOT seems helpful for future reference of teachers and researchers alike. He summarizes the knowledge to teach thinking into “knowledge of elements of thinking” together with the four sub-categories, namely:

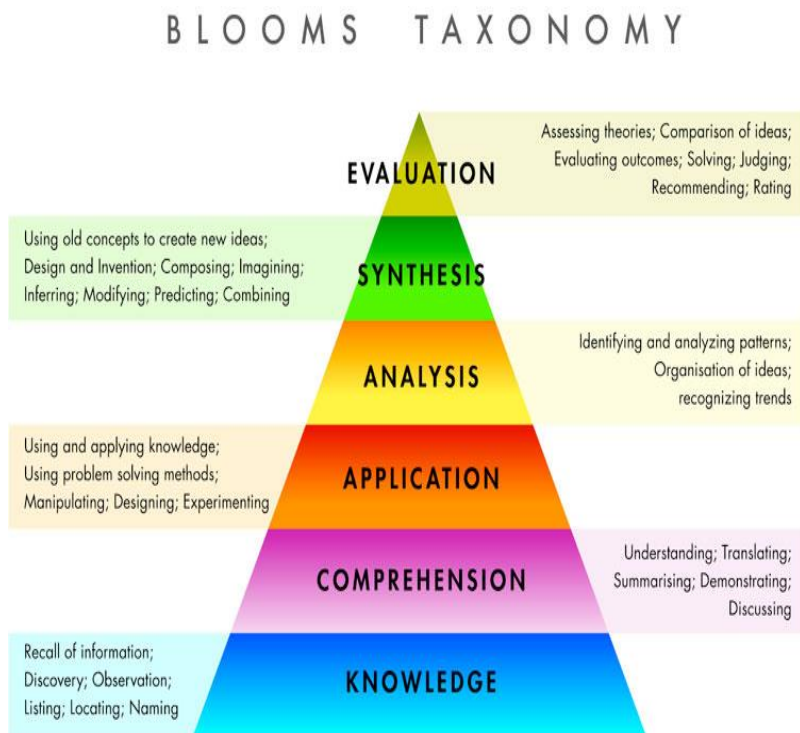
- (i) Knowledge of individual thinking strategies – making comparisons, formulating justified arguments, drawing valid conclusions, etc.
- (ii) Knowledge of genre of thinking – argumentation, inquiry learning, problem solving, critical thinking, scientific thinking, creative thinking, etc.
- (iii) Knowledge of metacognition –thinking about own thinking
- (iv) Knowledge of additional issues – thinking dispositions (habits of mind), culture of thinking, etc.

Teaching English with learning tasks provided HOTS is to encourage *application*, *analysis*, *synthesis* and *evaluation* activities. In addition, HOTS will hone students’ critical thinking, logical thinking, and problem solving. It deals with teaching of 21st Century Skills (AT21CS) consortium (RAND 2012) which organizes 21st century skills, knowledge, and attitudes, values, and ethics into the following four categories. One of the categories is ways of thinking: creativity and innovation, critical thinking, problem solving, decision making, and learning to learn (or metacognition). It can be concluded that HOTS are beneficial for honing students’ 21st century skills especially their ways of thinking such as critical thinking, logical thinking, and problem solving.

### 2.1.1 THE TEACHING OF HIGHER-ORDER THINKING SKILLS (HOTS)

Teaching English with HOTS will encompass students' thinking skills which require more than memorization of information given. It will be so beneficial for the learner's future in 21 Century.

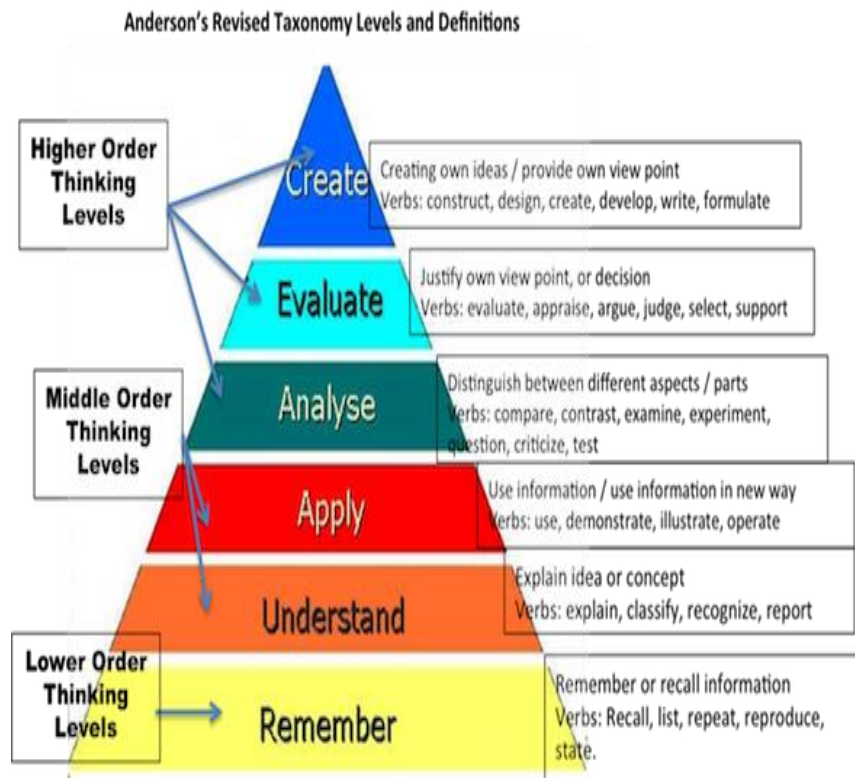
Teachers are familiar with Higher Order Thinking Skills (HOTS) due to Bloom's taxonomy which is created in 1956. It is not the only framework for teaching thinking, but it is the most widely used. Here is the Bloom's taxonomy.



Pic. 1 retrieved from <https://juliaec.files.wordpress.com>

The taxonomy goal is for promoting higher forms of thinking in education, such as analysing and evaluating, rather than just teaching students to remember facts (rote learning). Based on Bloom's taxonomy, teachers can set tasks for students which exceed the comprehension level to encourage *application*, *analysis*, *synthesis* and *evaluation* activities in learning English.

Moreover, Lorin Anderson in Collins (2014), revisited the cognitive domain in the learning taxonomy. She changed the six categories from nouns to verbs. They become remembering, understanding, applying, analysing, evaluating, and creating.



Pic. 2 retrieved from [www.karenwalstraconsulting.com](http://www.karenwalstraconsulting.com)

Using the Taxonomy, either Bloom taxonomy or Anderson, teachers can set the materials consisting of HOT which will improve thinking skills of students for instance critical thinking, logical thinking, and problem solving.

High Order thinking levels are concentrating on the top three levels of Bloom's Taxonomy: analysis, synthesis, and evaluation. While HOTS based on taxonomy revised by Anderson also focus on three top levels; analyzing, evaluating, and creating. In analyzing level students separate material or concepts into component parts so that its organizational structure may be understood.

They also distinguish between facts and inferences. Then, In Evaluating level they make judgments about the value of ideas or materials. Moreover, in creating: students build a structure or pattern from diverse elements. Then, they put parts together to form a whole, with emphasis on creating a new meaning or structure.

Facing AFTA which provides challenge and chances, real life problems often demand complex solutions, which are obtained through higher level thinking processes. Then, teaching English completed HOTS provides students with relevant life skills and offers them an added benefit of helping them improve their knowledge and lower order thinking. Even though creating HOTS activities is not always easy for the teacher, they require a certain level of creativity, so the students are highly motivated in learning English and applying it in real life.

Paul in *The Critical Thinking Community* says that critical thinking is that mode of thinking - about any subject, content, or problem - in which the thinker improves the quality of his or her

thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them.

In the beginning, teachers should tell students what they are doing. Teachers also explain the benefits of practicing HOTS in learning English for them to problem-solve at school and in life.

Students need to learn a common language used, so students can recognise the skill they are exercising and the level of complexity of a question. For instance, the words *understand*, *examine*, or *collect*, as students to recall facts and demonstrate their knowledge of content. Besides, they need to demonstrate application, if they see the words *apply*, *solve*, *experiment*, or *show*, they will experience evaluation level if they need to *appraise*, *judge*, *criticise*, or *decide*.

### **2.1.2 English Activities Including HOTS Practice**

Teacher need to plan interactive classroom activities and discussion time to tap into particular higher-order thinking skills, so students are interested in learning English. Here are examples of English activities Including HOTS practice.

#### **2.1.2.1 Cooking Class**

The material is procedural text. Teacher can set cooking class as a students' project to practicing some expressions how to show the ways of making things based on the context. Teacher gives them "how to make certain food" as a topic. Each group should pick different food to be presented. Students will experience how to apply the theory learned while they present how to cook something. Everyone has equal opportunities to speak up. Cooking class is very useful for students to explore their ability. Students will be so happy because they can use English in context. Students will experience interactive activities in team work and pairs that enhance the connectivity between them.

#### **2.1.2.2 Puppet Show**

Puppet show is an appropriate chosen material for students to make them interested in learning grammar more. It gives a lot of chance for students to use past tense in real communication in telling narrative stories. They will experience fun practical English grammar in context. Besides, they will learn how to tell narrative stories in puppet show, Indonesian culture of telling story. This chosen project will so useful and helpful for students to improve both their speaking and writing abilities. Students will experience applying English in relevant contexts.

#### **2.1.2.3 A Story Book**

One of creative projects for students which offers a lot of fun is a story project. It will be so challenging for students because they not only made up stories but also draw pictures presenting the story made. It will help them to write narrative text in relaxing situation. Students will experience how to use English grammar in practical usage. They can hone their creative thinking because of making stories up. Students' brain will be stimulated to develop patterns and create meaning based on contextual usage.

#### **2.1.2.4 Event Promotion**

The topic is about posters. Students get an event promotion project, about Indonesian cultures. They get opportunities to create creative works with their groups. They will draw pictures, set the events, and promote it based on the posters made. It will encourage them to communicate actively with others. It also increases their confidence to speak English. Students will be highly motivated in applying language in real-life situations.

After doing the activities planned, teachers should also encourage students to reflect on their learning from feedback given. Thus students understand their thinking strengths and weaknesses. It will help them to be more ready in the 21 Century life.

## **2.2. TECHNOLOGY SUPPORT**

Critical thinking, problem solving, and communication skills also can be developed by using technology to support learning. In this case, the use of technology of collaborative learning including learning environments with relevant task and creative project is required. In 21 Century, teachers have big opportunities in using technology on a daily basis to support their work.

One thing which is important is to select the appropriate technology tools while not losing sight of teachers' goals for student learning. Teaching English supported by technology can deepen student learning. Teachers can find creative and constructive ways to integrate technology into your class.

Technology which can lend itself exploration can be used effectively. In a technology-rich classroom, teacher can set the material by using technology support. For instance, students get the project to make an advertisement "Visit Indonesia", so they might search the Web for information about the interesting places, local food, and performance. Then, they put them together to be an interesting advertisement using computer based on selected information taken on the computer. The result is that students are active, rather than passive. They will produce knowledge and present that knowledge in a various presentation, or other formats.

### **2.2.1 English Activities Including HOTS Practice**

Students will get pleasure and memorable parts of classes when teacher encouraged them to use their strengths and talent by using technology which helped them relate to the content itself.

#### **2.2.1.1 E- learning**

E-learning is presenting all learning content online. It also providing alternatives to paper-based forms of communication through such tools as email, or other web-based tools. It can save the use paper, so it is more environmentally friendly.

#### **2.2.1.2 Online Projects**

The use of technology can support student to create new knowledge, reflect on what they are learning, or work together to reach a deeper understanding of the material given. For example, students can create a job application letter and send it by e-mail to teacher.

### **3. CONCLUSION**

Material which is practicing will rise to effective learning They can experience learning to think at the higher levels. This naturally makes effective teaching of HOTS imperative in ensuring. HOTS will hone their critical thinking, logical thinking, and problem solving. Dealing with high technology development in 21st century, it will be better if English teaching learning process is supported by technology. It has supplemented English teaching in authenticity and literacy. Students can be highly motivated in learning English because it will be practical usage. Critical thinking, problem solving, and communication skills also can be developed by using technology to support learning.

Critical thinking, problem solving, and communication skills also can be developed by using technology to support learning. In this case, the use of technology of collaborative learning including learning environments with relevant task and creative project is required. In 21 Century, teachers have big opportunities in using technology on a daily basis to support their work. In this case, the use of technology of collaborative learning including learning environments with relevant task and creative project is required.

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# NUTRITIONAL AND QUALITY ANALYSIS OF KELOR (*Moringa oliefera*) BEVERAGE

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This study aims to determine the nutritional and quality value of Moringa beverage consisting of moringa yogurt and moringa jelly drink. Quality drinks obtained through organoleptic test, while the nutrient content through a chemical test. Organoleptic test results for moringa yogurt with moringa leaf extract 20% and incubation time of 6 hours to produce quality: light green, not flavorful Moringa leaves, soft texture, thick, tasteless Moringa leaves and panelists preferred. Moringa yogurt nutrient content per 100g: 2,84 g carbohydrates, 4.75 g protein, 69,57g of fat, calcium 3,087mg, 6,277mg iron, vitamin A 2.885 ppm and 14.652 ppm vitamin C, Lactic Acid Bacteria (LAB) 1,2x10<sup>4</sup> and pH 5,97. The result of organoleptic test for moringa jelly drink with the ratio of 0.4% carrageenan and pandan leaf extract 3% yield quality: green, viscous and easier to pump, less flavorful Moringa leaves, and quite pandan flavored, less taste pretty tasteless Moringa leaves and pandan, much preferred because the fragrance of pandan fragrance can mask unpleasant from moringa leaves. Nutrient content of moringa jelly drink Per 100g: 11,86g protein, fiber 0.06 g, carbohydrates 14.0 g, fat 6.01 g, 0.48 IU vitamin A, vitamin B 0,0064mg, vitamin C, 1986 mg , 0.0355 mg Calcium, iron 0.9423 mg, 10.545 mg magnesium, phosphor 0,1764 mg, 0.0556 mg potassium, seng 0,1226 mg.

*Key word : Nutritional, quality, moringa beverage*

## Introduction

The development of food on beverages marked the emergence of various products such as jelly drink beverages and yogurt that are circulating in the community. Jelly drink is an innovation of jelly, this product combines the functions of jelly as a food as well as beverages. Jelly drink freshness to eliminate hunger while helping to starve (Anonymous, 2015).

Jelly drink is a beverage that has the characteristics of a solid texture, when consumed through a straw relief is destroyed, but the form of the gel is still felt in the mouth. Components include a liquid jelly drink, gelling, Flavor and sweetener (Yulianti, 2008). For the manufacture of jelly drink fluids using a variety of fruit flavors such as lychee, stawberry, apple, guava, citrus and vegetable.

Yoghurt is one beverage products favored by the people. During this time many found the yogurt market with a variety of fruit flavors include strawberry yoghurt, yoghurt and yoghurt peach blackcurrent. Yogurt is a fermented milk product in the form of semi-solid that is produced through fermentation of milk using lactic acid bacteria. Through the chemical changes that occur during the fermentation process produced a product which has the texture and distinctive flavor. Making the use traditional yoghurt starter culture mixture of *Lactobacillus bulgaricus* and *Streptococcus thermophilus* in the ratio 1: 1 (Hidayat., Et al, 2006).

Yoghurt processing using vegetables as an additive to improve the nutritional value of yogurt is a new strategy in the diversification of food can also increase the potential of the food itself. One food ingredient that is added in the manufacture of yoghurt that Moringa leaves. Moringa leaf is one food that contains carbohydrates, fiber, vitamin A, vitamin C, Vitamin B, calcium, potassium, iron, and protein, sert zeatin, quercetin,  $\beta$ -sitosterol, acids caffeoyiquinic and kaempferol (Krisnadi: 2012, Kurniasih , 2013). This study makes beverage products, namely jelly drink and yogurt added Moringa leaf extract. The addition of moringa leaf extract is expected to be resulting in more nutritious yogurt with a delicious taste and preference.

## Method

This study aims to determine the quality make drinking jelly drink Moringa and yogurt Moringa through organoleptic tests which include: color, aroma, texture, consistency, taste and preferences and know kandunagn nutrients include: carbohydrates, fat, protein, calcium, iron,

vitamin A and vitamin C, the amount of Lactic Acid Bacteria (LAB) and pH. This type of research is experimental. The study design used in the manufacture of jelly drink two factors. Two factors are comprised of one factor is the type of material that is gelling carrageenan (K) which terdidri three levels, namely the presentation (%) of the weight of K1 = 0.2% = 0.3% K2, K3 = 0.4% , while the second factor is the additional material that moringa leaf extract (P) consisting of 3 levels, with a percentage (%) of the weight of Y1 = 1%, 2% and Y2 = Y3 = 3%. The study design of these two factors can be seen in Table 1.

**Table 1 : Design Research Jelly Drink Moringa Leaves**

Extract Moringa leaves	carrageenan		
	K1 (0,2%)	K2 (0,3%)	K3 (0,4%)
	K1P1	K2P1	K3P1
P1 (1%)	K1P2	K2P2	K3P2
P2 (2%)	K1P3	K2P3	K3P3
P3 (3%)	K1 (0,2%)	K2 (0,3%)	K3 (0,4%)

Description:

K = Carrageenan

P = Moringa leaf extract fragrant

In the manufacture of yogurt using factorial design dual 2x2 , where the independent variable is the amount of extract of Moringa leaves 20 % , 30 % and 40 % of the weight of milk and incubation time of 4 hours , 5 hours and 6 hours and the dependent variable is the organoleptic quality including color , aroma , texture , consistency , taste and preferences .

The experimental design for data collection are as follows :

**Tabel 2. Desain Eksperimen**

K	T	Waktu Inkubasi		
		4 jam	5 jam	6 jam
20%		K <sub>1</sub> T <sub>1</sub>	K <sub>1</sub> T <sub>2</sub>	K <sub>1</sub> T <sub>3</sub>
30%		K <sub>2</sub> T <sub>1</sub>	K <sub>2</sub> T <sub>2</sub>	K <sub>2</sub> T <sub>3</sub>
40%		K <sub>3</sub> T <sub>1</sub>	K <sub>3</sub> T <sub>2</sub>	K <sub>3</sub> T <sub>3</sub>

Description:

K : percentage increase Moringa leaf extract

Q : incubation time

Data was collected using observation sheet to the organoleptic properties of the number of panelists 30 people . Organoleptic test result data . Menggunakan data analysis ANOVA test double ( two- way ANOVA ) If the results show the influence signufikan further tested with Duncan . Nutrient content jelly drinks and yogurt drink Moringa moringa with a chemical test to determine the amount of carbohydrate, protein , fat , calcium , iron, vitamin A , vitamin C , the amount of Lactic Acid Bacteria ( LAB ) and pH as well as the selling price is calculated .

## Result and Discussion

### A. Jelly drink Moringa

#### 1. Test Results Appearance

##### a. Color

Organoleptic test results generated color jelly beverage having an average of 1.63 to 3.36 . The lowest value of 1.63 was obtained on the use of carrageenan amount of 0.2 grams and 3 grams pandan leaf extract , while the highest score of 3.36 on the usage amount of 0.4 grams of carrageenan and fragrant pandan leaf extract 3 grams . The average value of the amount of carrageenan color and fragrant pandan leaf extract in jelly drink Moringa leaves can be seen in Figure 4.17 .

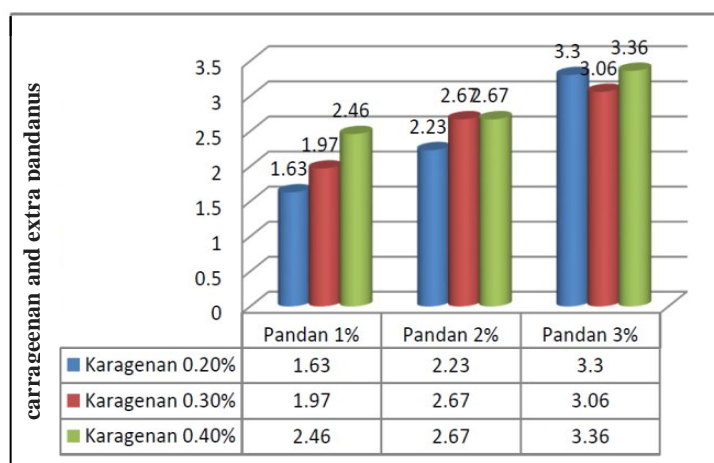


Figure 1 : Average Value Color Drink jelly Moringa Leaves

##### b . Viscosity

Viscosity is expected of jelly drink Moringa leaves are thick and easy to pump . Based on the results obtained by organoleptic tests produced an average of 1,733 to 3,600 . The lowest value was obtained 1.733 on the use of carrageenan amount of 0.2 grams and 2 grams of pandan leaf extract , while the highest value of 3,600 on the use of carrageenan amount of 0.4 grams and 2 grams of pandan leaf extract . The average value of viscosity to the amount of carrageenan and pandan leaf extract in jelly drink Moringa leaves can be observed in Figure 4.18 .

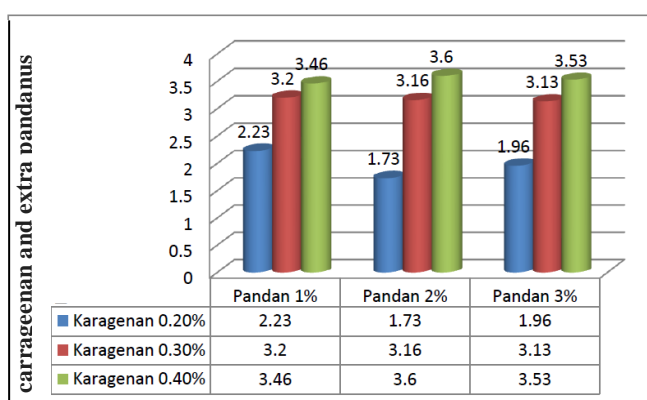


Figure 2 : the average value of viscosity jelly drink Moringa

##### c. Aroma

is expected of jelly drink Moringa leaves are not aromatic extract Moringa leaves and scented rushes. Based on the results obtained by organoleptic tests produced an average of 1.96 to 3.166 . The lowest value of 1.96 was obtained on the use of carrageenan amount of 0.2 grams and pandan leaf extract 1 gram , while the highest value of 3.166 on the use of carrageenan amount of 0.3 grams and pandan leaf extract 3 % .

The average value of the amount of carrageenan aroma and pandan leaf extract in jelly drink Moringa leaves can be observed in Figure 4.19 as follows

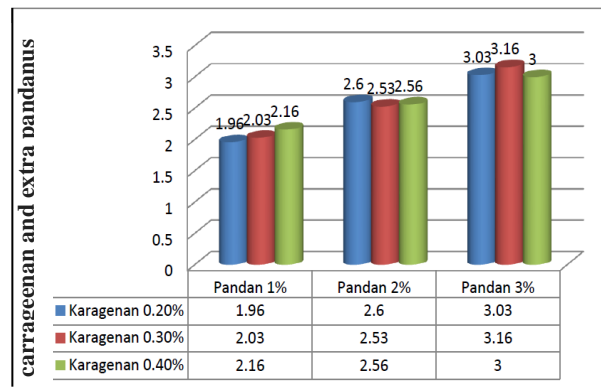


Figure 3 : the average value of aroma jelly drink Moringa

**d. Flavor**

Expected flavor of jelly drink Moringa leaves are not berarasa extract Moringa leaves and pandan taste . Based on the results obtained by organoleptic tests produced an average of 1.933 to 2.900 . The lowest value was obtained 1.933 on the use of carrageenan amount of 0.2 grams and pandan leaf extract 1 gram , while the highest value of 2,900 on the use of carrageenan amount of 0.4 grams and 3 grams pandan leaf extract . The average value of a sense of the amount of carrageenan and pandan leaf extract in jelly drink Moringa leaves can be observed in Figure 4.21 .

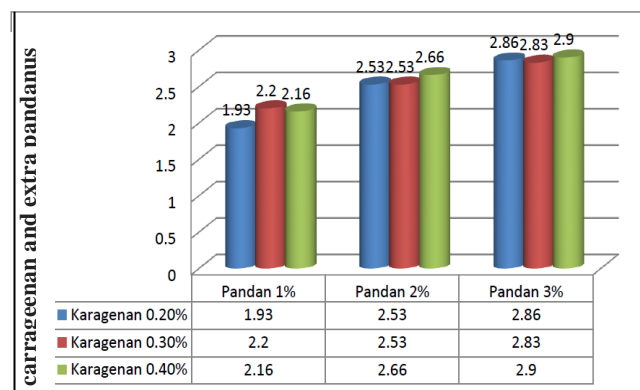


Figure 4 : the average value of flavor jelly drink Moringa

The best known product of the assessment of the results so panelists jelly drink Moringa leaves are seen from the quality and level of preference that include: color, consistency, aroma and taste. Determination of the best products based on the test results anava jelly drink Moringa leaves can be seen in the best product jelly drink Moringa leaves oganoleptik based test is X9 is the number carrageenan extract 0.4 grams and pandan leaves 3% significant. Jelly drink product best Moringa leaves have a green color criterion with a value of 3.36, viscous easy to be sucked with a value of 3.53, not flavorful extracts of Moringa leaves and pandan flavored with a value of 3.16 tasteless extract Moringa leaves and pandan taste with a value of 2 90 and A-level sense is like the value of 4.20.

**2. Test Results The content of nutrients**

The content of nutrients known after chemical tests that showed jelly drink Moringa leaves better nutritional content and many kinds of in the market today. Jelly drinks nutrient content of Moringa leaves 11.86 g protein, fiber 0.06 g, carbohydrates 14.0 g, fat 6.01 g, 0.48 IU vitamin A, vitamin B 0.0064 mg, 0.1986 mg vitamin C , 0.0355 mg Calcium, iron 0.9423 mg, 10.545 mg magnesium, phosphorus 0.1764 mg, 0.0556 mg potassium, zinc 0.1226 mg (per 100 g). The selling

price of beverages jelly Moringa leaves of Rp 733.00 per 100 ml, but fiber and carbohydrates in jelly drinks on the market higher.

## B. Yogurt Moringa

### 1. Test Results Appearance

#### a. Color

Organoleptic test results yoghurt Moringa color shows the average value of the color of yoghurt ranges from 1.3 to 2.53. The average value of the color of yoghurt from all treatments shown in Figure 2.

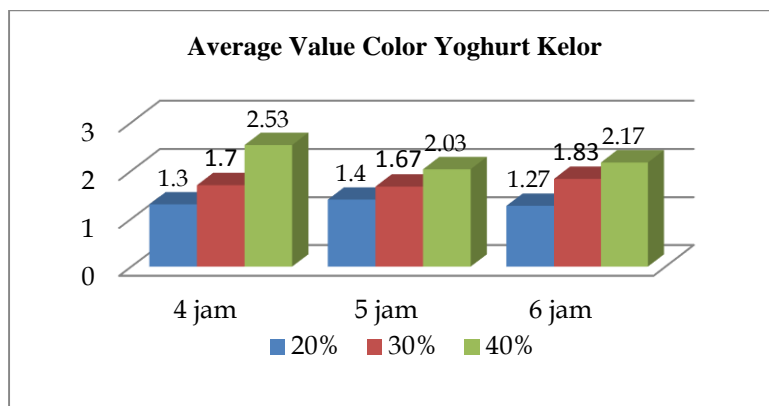


Figure 5. Graph Average Value Color Yoghurt Kelor

#### b . Aroma

Yoghurt aroma organoleptic test results Moringa shows the average value of scents ranging from 2.3 to 3.43 . The average value of Moringa yoghurt aroma of all treatments shown in Figure 3 .

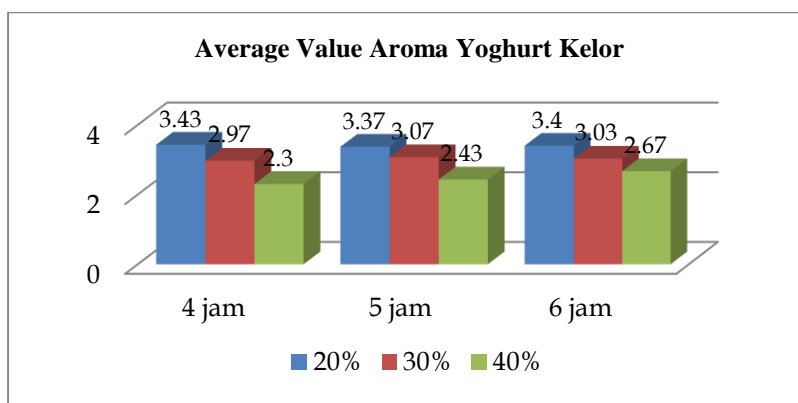


Figure 6. Graph Average Value Aroma Yoghurt Kelor

The addition of moringa leaf extract affects the aroma of yoghurt due lipoksidase Moringa leaves contain enzymes , enzyme is found in green leafy vegetables because lipoksidase enzymes hydrolyze or decipher fat into compounds cause unpleasant odors , which belong to the group heksanal 7 and hexanol ( Santoso 2005 ) . The unpleasant aroma can be reduced by blanching ( quickly dip ) .

#### c . Flavor

Moringa yogurt organoleptic test results refer to average texture values ranged from 3.23 to 3.53 . The average value of Moringa yogurt texture of all treatments shown in Figure 4 .



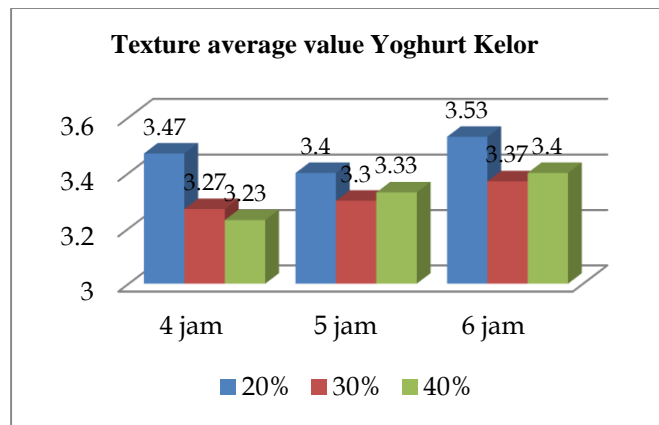


Figure 7. Graph Average Value Yoghurt Flavor Kelor

**d . Viscosity**

Moringa yogurt organoleptic test results showed that the average viscosity values ranging from 2.4 to 3.37 . The average value of Moringa yoghurt consistency of all treatments shown in Figure 5 .

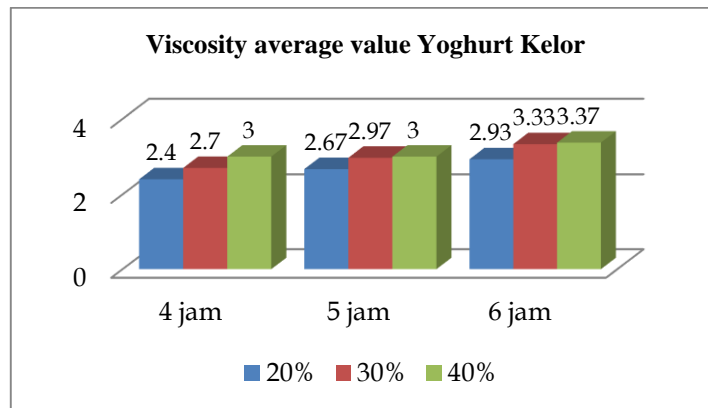


Figure 8. Average Value Viscosity yoghurt Kelor

Viscosity or viscosity of the yoghurt drink Moringa leaves as the main ingredient used in the form of milk , if milk becomes acidic , the bacteria ferment the lactose in milk , lactic acid menghasilkan . Decreased milk acidity causes the milk protein , namely casein , mengkoagulasi . Stater used in the manufacture of some dairy products like yoghurt consists of bacteria that ferment lactose . Lactic acid, which is produced by bacteria is the cause coagulation in yogurt ( Gaman . , Et al , 1993) .

**e . Flavor**

Organoleptic test results yoghurt taste Moringa shows the average value of flavor yoghurt Moringa between 2.07 to 3.4 . The average value of all treatments yoghurt Moringa shown in Figure 6 .

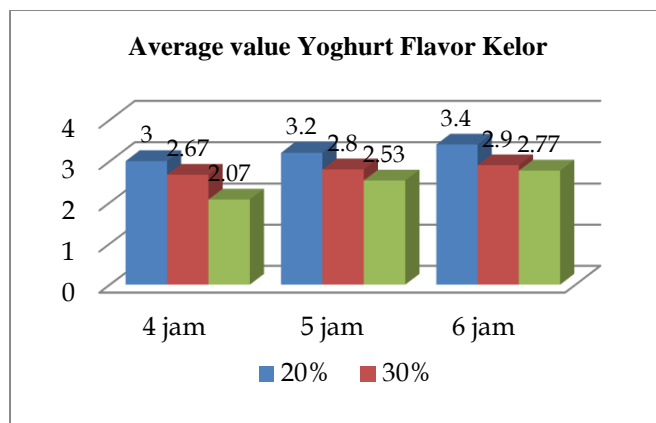


Figure 9. Value Average Flavor Yoghurt Kelor

Yoghurt taste or flavor associated with fermentation carried out by inserting certain types of bacteria . Streptococcus Thermopillus start the fermentation of lactose into lactic acid , reducing the redox potential of the product by removing oxygen and cause decomposition of milk protein melelui proteolytic enzymes work . this creates favorable conditions for the growth of Lactobacillus bulgaricus which began to develop when the pH has decreased . The typical yoghurt flavor due to the lactic acid and the remnants of acetaldehyde , diacetyl , acetic acid and volatile substances other produced by bacterial fermentation . Lactobacillus bulgaricus is the main cause of the formation of acetaldehyde . ( Buckle . , Et al 2007: 295 )

**f . fondness**

Organoleptic test results the average value of Moringa yoghurt preference level ranged from 2.5 to 3.07 . The average value of Moringa yoghurt preference level of all treatments shown in Figure 7.

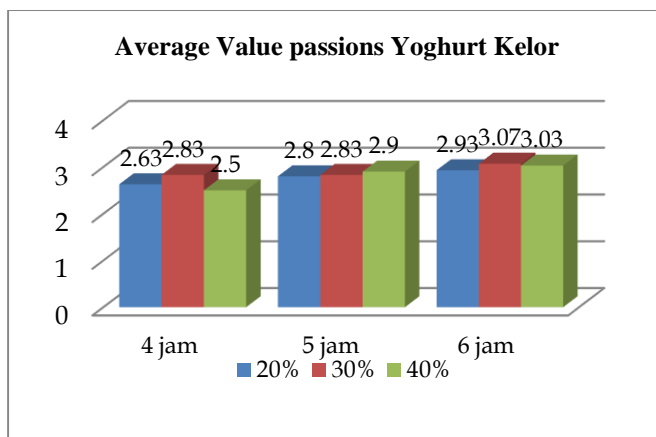


Figure 10 : Average Value passions Yoghurt Kelor

The incubation time significantly affected the favorite yogurt. The typical yoghurt flavor due to the lactic acid and the remnants of acetaldehyde, diacetyl, acetic acid and volatile substances other produced by bacterial fermentation. Lactobacillus bulgaricus is the main cause of the inception of acetaldehyde. (Buckle., Et al 2007: 295) The main factors that ultimately affect the acceptability of the yogurt. resulting flavor yoghurt appropriate and acceptable by the panelists.

The addition of moringa leaf extract 40% yield green yoghurt rather old and lumpy. The addition of moringa leaf extract 20% by value produces yogurt flavored and tasteless Moringa leaves Moringa leaves. From these explanations it can be seen that the addition of moringa leaf extract 20% and 40% both earn the same amount of comparison criteria, so it should be selected to be one of the best products. if viewed in terms of taste panelists preferred the yoghurt products with the addition of moringa moringa leaf extract 20%, because the yoghurt produced tasteless Moringa leaves. Moringa leaves have a distinctive flavor that tannin content therein. Tannins are found in

nature and is present in every part of the plant, especially in the tropical plants in the leaves and bark (Julianti 2008).

The incubation time of 6 hours produces yogurt is thick, tasteless Moringa leaves and panelists preferred. Thus it can be concluded that the best yogurt is yogurt products with the addition of moringa leaf extract 20% with a 6-hour incubation period, namely yoghurt products Moringa C or T3 K1. Yoghurt Moringa C has a light green criteria, not flavorful Moringa leaves, soft texture, thick, tasteless Moringa leaves and panelists preferred.

## 2. Substance Nutrient Content Test Result

Yoghurt contains moringa test results, namely: the number of lactic acid bacteria that  $1,2 \times 10^4$  CFU / ml less than the yoghurt SNI is 107 CFU / ml. this shows Moringa yogurt safe to eat. Moringa yoghurt 5.97 pH levels indicate that slightly sour yogurt.

Based on the comparison of nutrient yogurt with yoghurt SNI best moringa can be concluded that Moringa yogurt has the advantage that lies in: the carbohydrates, protein, calcium, iron, vitamin A and vitamin C, so it's good to be a healthy drink.

## Conclusion and suggestion

### Conclusion

Based on the analysis and discussion, Effect of Addition of Moringa Leaf Extract (*Moringa oleifera*) and Incubation Time Against Yoghurt organoleptic properties can be summarized as follows:

1. The effect of the addition of Moringa leaf extract significantly affect the color, aroma, consistency and flavor, but did not significantly affect the texture and joy. The influence of incubation time significantly affect the viscosity, taste and preferences, but had no significant effect on the color, aroma and texture. While the interaction between the two did not significantly affect the color, aroma, texture, consistency, taste and preferences.
2. Nutrient content of Moringa best yoghurt based on the results of organoleptic test is yoghurt C with moringa leaf extract 20% and incubation time of 6 hours. Nutritional content of yogurt C as follows: carbohydrate 2.84%, 4.75% protein, fat 69.57% 3.087% Calcium, Iron 6.277% 2.885 ppm vitamin A and vitamin C 14.625 ppm, Lactic Acid Bacteria (LAB)  $1,2 \times 10^4$  and pH 5.97.
3. The selling price yoghurt Moringa leaf extract per 100 grams with the best organoleptic test result is Rp 2.500, -.

### Suggestion

Suggestions can be submitted writer after doing research are:

1. It is necessary to conduct further research on the storability and packaging for yogurt products Moringa.
2. This study has a high fat content then, similar studies need to be done by using skim milk.

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# The Quality of the Production of Methyl Ester from *Jatropha Curcas lin* Using Catalyst of $H_2SO_4$

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## Abstract

The purpose of this study was to elucidate (1) to investigate the yield of methyl ester *jatropha curcas lin* oil, (2) to analyze physical and chemical properties of methyl ester *jatropha curcas lin* oil. In this research, transesterification was conducted using catalyst of  $H_2SO_4$ . Meanwhile, the counted standard of ASTM: D 1298, D 445, D 93, D 613, D 2500, D1796, D 6584, D6584, D 4530, D664, D1266, AOCS Cd. 1-25 and calculated, were employed to examine the density, kinematic viscosity, flash point, cloud point, cetan number, water content, free glycerol, total glycerol, carbon residue, acid number, sulfur, iodine number, and alkyl esters content. The results of the research show that (1) the process of transesterification using catalyst of  $H_2SO_4$  produces yield of 89,7% methyl ester (2) the physical and chemical properties analysis of methyl ester *jatropha curcas lin* fulfill the requirement of the SNI (Indonesia National standard) of 04-1782-2006.

**Keywords:** methyl ester, *jatropha curcas lin*, transesterification, catalyst of  $H_2SO_4$

## Introduction

As the consequence of the rapid development of technology and industry, the demand of the fuel, especially the fossil fuel, which is unrenovable energy, decreases. The constant massive consumption of fossil fuel will lead to the energy crisis. Besides, the emission of CO and  $CO_2$  gasses resulted from the use of fossil fuel could harm the human and even animal health. Furthermore, the current issue of global warming is also attributed to the use of the fossil fuel. Those are the main reasons of the scientist in conducting a research both to investigate the global impact of the use of fossil fuel toward environment and to discover the new renewable energy sources.

Recently, the development of a new technology has a tendency to improve efficiency and energy management, as well as replacing the fossil fuel usage with renewable energy. This is attributed to the fact that renewable energy shows a more environmentally friendly. Thus, it can contribute to the reduction of global warming issues. One of the most significant renewable energy is a vegetable oil. The vegetable oil is converted to be biodiesel (methyl ester) through the process of transesterification.

Vegetable oil is chosen to be one of the most efficient renewable source since it offers several advantages. Compared to that of diesel oil, methyl ester has higher burning efficiency, lower sulfur and aromatic content. Besides, it also has high flash point, and better lubrication [1, 2]. In the higher level, the domestic use of methyl ester is decreasing the national budget allocation as well as reducing the dependency on the fossil fuel [1,3]. Furthermore, methyl ester is sulfur and carcinogenic free, safe, and renewable [4]. Besides, methyl ester contains more oxygen thus the combustion is cleaner and more environmentally friendly [5]. A high cetan number as well as flash point of methyl ester also contributes in decreasing the pollution and the cancer risk [6,7].

However, the direct applications of this oil causes many problems in engine due to its higher density, lower heating point, slower nebulization and lower engine performance [6]. Technically, the main disadvantage of the methyl ester and its mixture is the lower density triggering the fuel degradation as. It also contribute to the formation of deposit layer in the lower part of the tank. As the result of it, the fuel filter can get dirty more easily.

In spite of those facts, in December 30<sup>th</sup> 2008, the 50:50 mixture of Jet fuel A-1 and methyl ester *jatropha curcas lin* was successfully used in the flight test of Boeing 747 from Auckland [8].

The following experiment was conducted on April 1<sup>st</sup> 2011 by Interjet completed the first Mexican aviation biofuel. The experiment was executed using Airbus A320 with the 70:30 mixture of traditional fuel biojett with methyl ester jatropha curcas lin Erin Veogale for methyl ester Magazine, 2011, accessed on October 13<sup>rd</sup>, 2013. Furthermore, in October, 28<sup>th</sup> 2011, China successfully conducted the flight using Boing 747-400 surrounding Beijing airport. The 50:50 mixture of the conventional jet fuel with the methyl ester was used in that flight.

Nonetheless, those experiments were merely focused on the characteristic of diesel engine with methyl ester as fuel, yet only limited studies have been carried out investigating the quality of methyl ester from vegetable. Thus, the purpose of this study is to analyze the quality of methyl ester jatropha curcas lin oil.

## Method

Methyl ester from jatropha curcas lin is obtained through the process of transesterification by catalyst of H<sub>2</sub>SO<sub>4</sub>. The method is employed to examine the physical and chemical properties of methyl ester jatropha curcas lin oil, meanwhile, the counted standart of ASTM: D1298, D445, D93, D2500, D 613, D1796, D6584, D6584, D 4530, D664, D1266, AOCs Cd. 1-25 and calculated, were employed to examine the density, kinematic viscosity, flash point, cloud point, cetan number, water contain, free glycerol, total glycerol, carbon residue, acid number, sulfur, iodine number, and alkyl esters contain.

## Result and Discussion

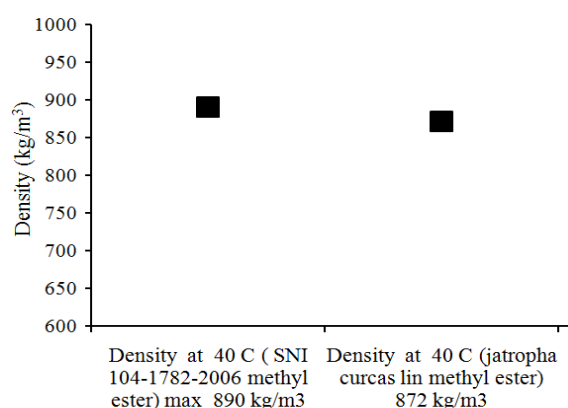
### 1. Yield of Methyl Ester Jatropha Curcas Lin

The process of transesterification using catalyst of H<sub>2</sub>SO<sub>4</sub>, which was executed to produces methyl ester, resulted 89,7% yield of methyl ester. The process of methyl ester production was able to be performed without the process of esterification. This is due to the experiment result showing that only 1.05% of free fatty acid (FFA) contained in jatropha curcas lin oil, while the maximum standard of transesterification process is FFA 2%. Therefore the production process of methyl ester can be directly executed by the process of transesterification.

The production process of methyl ester through the process of tranesterification using catalyst of H<sub>2</sub>SO<sub>4</sub> produces 89.7 % yield of methyl ester. It proves that the raw material influences the result of methyl ester, in which the newer the seed of jathropha curcas lin is, the better the quality of methyl ester will be. Besides the yields will also decrease. On the contrary, the longer the period of keeping the seed of jathropha curcas lin, the worse quality of the oil will be obtained.

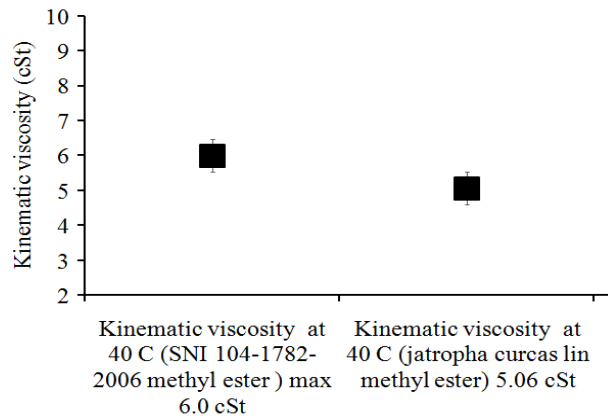
### 2. The Physical and Chemical Properties of Methyl Ester Jatropha Curcas Lin

The results of laboratory experiment of physical and chemical properties of jatropha curcas lin methyl ester are shown in the Figure 1 to 13.



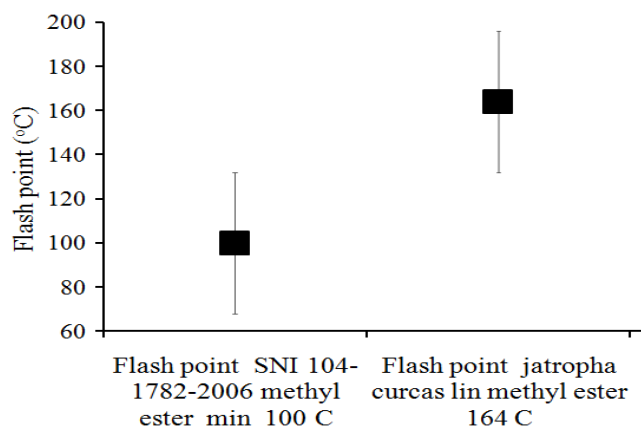
**Figure 1:** Density of jatropha curcas lin methyl ester and the standard of SNI of 04-1782-2006

Figure 1 shows the result of density experiment of jatropha curcas lin oil methyl ester. It indicated that the density of jatropha curcas lin oil methyl ester on the temperature of 40°C is 872 kg/m<sup>3</sup>. Meanwhile based on the SNI 04-7182-2006, the density of jatropha curcas lin methyl ester on the temperature of 40°C is 850-890 kg/m<sup>3</sup>. It shows that the methyl ester obtained from jatropha curcas lin oil is qualified as the fuel of diesel oil. A bigger density will require bigger mass of injection. The density of methyl ester will improve as the increasing of the number of the double linkages and the decreasing of the chain length [3].



**Figure 2:** Kinematic viscosity of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

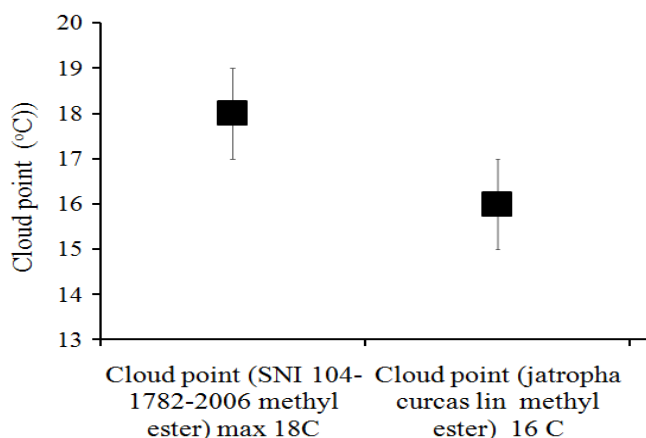
Figure 2 shows the viscosity of methyl ester jatropha curcas lin. The laboratory result experiment shows that the viscosity of methyl ester jatropha curcas lin on the temperature of 40°C is 5.75 cSt. Meanwhile based on the SNI 04-7182-2006, the viscosity of methyl ester on the temperature of 40°C 2.3-6.0. Thus viscosity of the methyl ester is qualified to be applied in as the fuel in the diesel engine. Viscosity is the most essential properties of methyl ester, since it influences the operation of injection fuel apparatus especially in the low temperature. This is due to the fact that in the low temperature, the increase of viscosity impacts the fuel fluidity.



**Figure 3:** Flash point of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

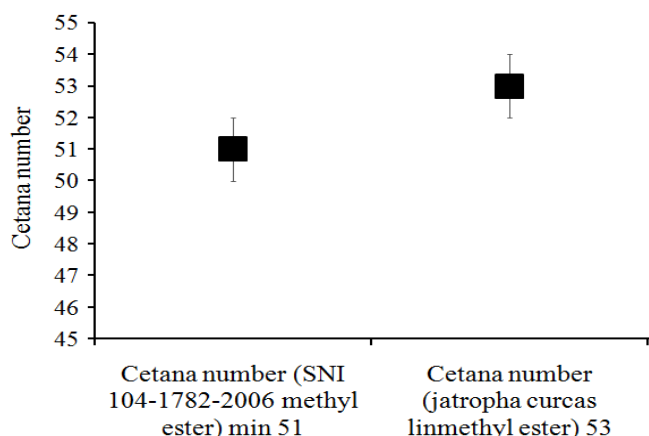
Figure 3 shows the flash point of jatropha curcas lin methyl ester. It indicates that in the gas phase, the flash point of methyl ester is 164°C, which is higher compared to that of diesel oil. In other word, when being heated in the same temperature, methyl ester will burn faster due to its shorter molecule containing methyl on each of the edges. Besides, it is also caused by higher oxygen and hydrogen contain and reactive characteristic of the molecule which is flammable when heated. Meanwhile, based on the qualification of SNI 04-7182-2006, the minimum number of flash

point of methyl ester is 100°C. Hence jatropha curcas lin methyl ester is qualified to be applied as the diesel fuel.



**Figure 4:** Cloud point of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

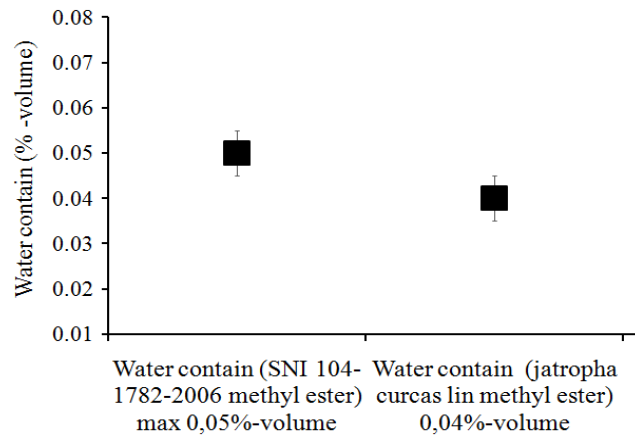
Figure 4 shows the cloud point of jatropha curcas lin methyl ester. It shows that the cloud point of methyl ester jatropha curcas lin oil is 16°C. Meanwhile the qualification of the standard of SNI 04-7182-2006 is 18°C maximally. Thus methyl ester jatropha curcas lin oil is qualified to be applied as the diesel oil. For the fuel, the low cloud point indicates that in the process of injection, the cloud or tiny particles, which will react easily with oxygen and heat, will be easier to be formed.



**Figure 5:** Cetan number of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

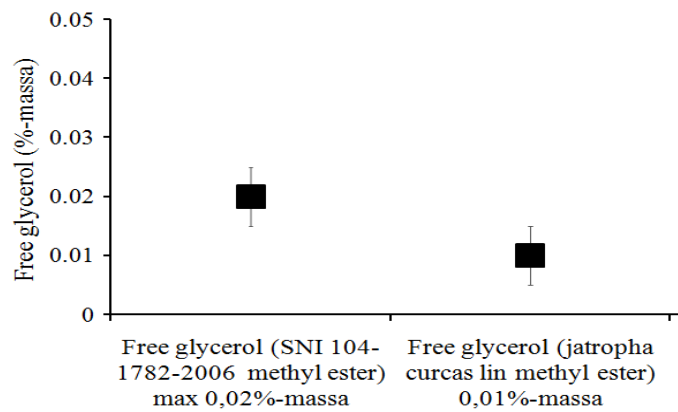
Figure 5 shows the cetan number of methyl ester jatropha curcas lin oil. Cetan number indicates the quality of the fuel, in which the higher cetana number is, the better the quality of the fuel will be. Cetan number is a number indicating the quality of the combustion of diesel engine fuel. It is required to avoid the knocking or the sound of explosion in the diesel combustion process. The higher cetan number, the easier the combustion will be. As the result of it, the knocking sound in the diesel engine will be reduced. However, the cetana number should not be too high since it will trigger the premature combustion. Furthermore, for the high rotation diesel engine, fuel with high cetana number is required, and vice versa. Additionally, compared to that of diesel oil, the cetana number of methyl ester is higher. This is due to the length of carbon chain contained in methyl ester (fatty acid of alkali ester) causing the high number of the cetana number.



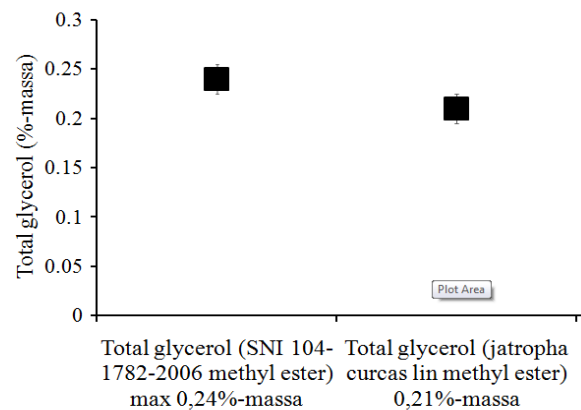


**Figure 6:** Water contain of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

Figure 6 shows the water contain of jatropha curcas lin methyl ester. the laboratory experiment result showed that the water contain of jatropha curcas lin methyl ester is 0. 04%-volume. Meanwhile based on the standard of SNI 04-7182-2006 the maximum water contain is 0.5%-volume. Therefore the water contain of jatropha curcas lin methyl ester is below the standard level. Due to this fact, methyl ester jatropha curcas lin is qualified to be applied as the fuel of diesel engine.

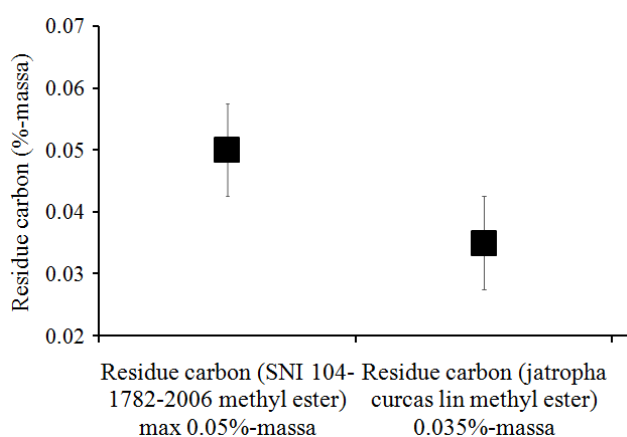


**Figure 7:** Free glycerol jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006



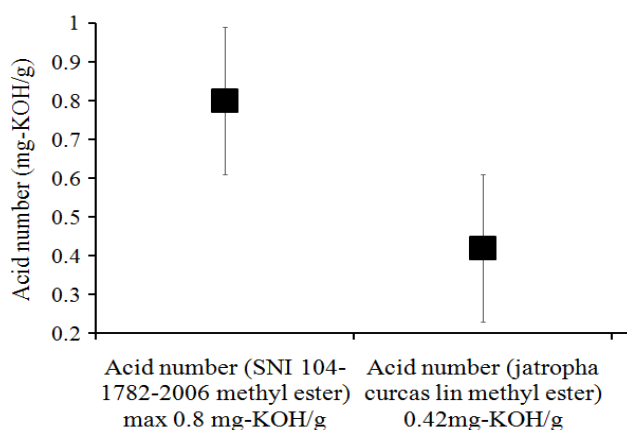
**Figure 8:** Total glycerol of jatropha curcas lin methyl ester and The standard of SNI 04-1782-2006

Figures 7 and 8 show the free glycerol and total glycerol. The figures show that the degree of free glycerol in jatropha curcas lin methyl ester is 0.01%-mass. Meanwhile, based on the standard qualification of SNI 04-7182-2006 is maximally 0.02%-mass. Therefore, the degree of free glycerol of jatropha curcas lin methyl ester is qualified to be applied as the diesel fuel. Furthermore, as shown in figure 8, the degree of the total glycerol is 0.21%-mass, which is qualified based on the standard of SNI 04-7182-2006, since the maximum number according to it is 0.24%-mass. The excessive degree of the free and total glycerol will increase density and viscosity of the fuel. As the result of it, the process of atomization will be disturbed and the combustion process will be longer. This is due to the unstable characteristic of glycerol, unreactive and high flash point.



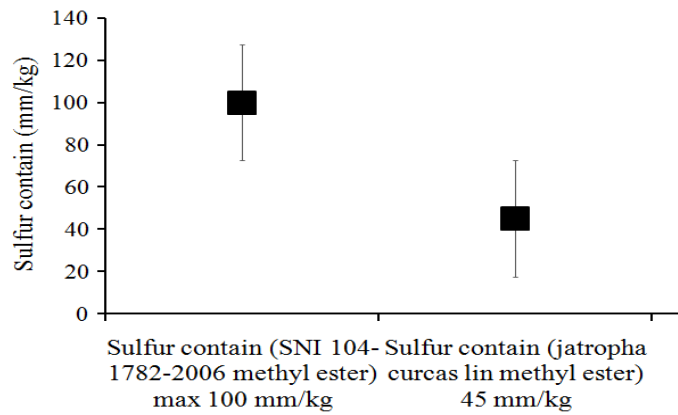
**Figure 9:** Carbon residue jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

Figure 9 shows the degree of carbon residue of jatropha curcas lin methyl ester which is 0.035%-mass. According to the standard qualification of SNI 04-7182-2006, the maximum degree of carbon residue is 0.05%-mass. Since it is still below the standard level, the jatropha curcas lin methyl ester is still qualified to be applied as the fuel of diesel engine. The excessive carbon residue level will result dirty fuel.



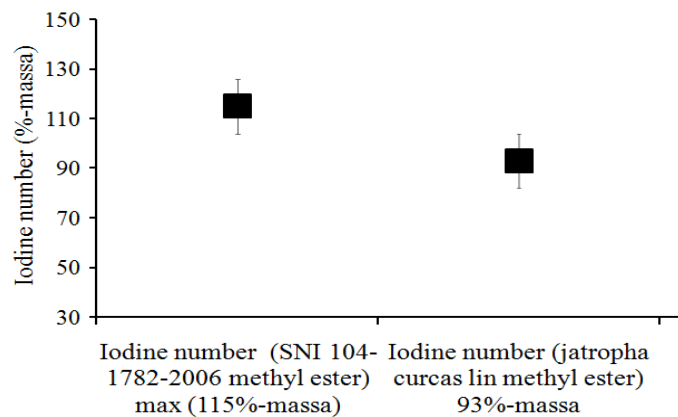
**Figure10:** Acid number of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

Acid number of jatropha curcas lin methyl ester is shown in figure 10. Based on the quality standard of SNI 04-7182-2006, which the maximum number is 0.8 mg-KOH/g, the acid number of methyl ester is qualified since it contain only 0.42 mg-KOH/g.



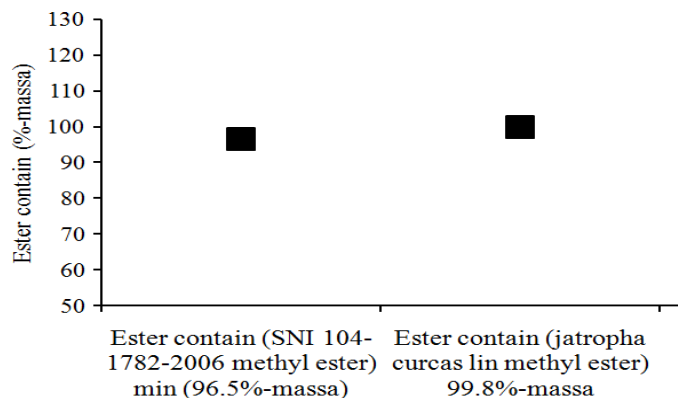
**Figure 11:** Sulfur contain of jatropa curcas lin methyl ester and the standard of SNI 04-1782-2006

As shown in the Figure 11, the sulfur degree of jatropa curcas lin oil is 45 mm/kg. Thus it is still qualified to be applied as the fuel of diesel engine since according to the standard of SNI 04-7182-2006 regarding sulfur, is maximally 100 mm/kg. The excessive number of sulfur can increase the emission



**Figure 12:** Iodine number of jatropa curcas lin methyl ester and the standard of SNI 04-1782-2006

According to the standard of SNI 04-7182-2006 the maximum number of iodine is 115%-mass. Meanwhile, as shown in figure 12, the iodine number of jatropa curcas lin methyl ester is 93%-mass. Therefore, based on that fact, it is still qualified to be applied as the fuel of diesel machine.



**Figure 13:** Ester contain of jatropa curcas lin methyl ester and the standard of SNI 04-1782-2006

The degree of ester of jatropha curcas lin methyl ester is shown in the picture 13. The minimal standard of SNI 04-7182-2006 regarding the degree of ester is 96.5 %-mass while in the jatropha curcas lin methyl ester, the degree of ester is 99.8 %-mass. Therefore the degree of ester of jatropha curcas lin methyl ester is qualified as the fuel of diesel engine.

## Conclusion and suggestion

### Conclusion

Based on the purpose, analysis, and discussion of the study, it can be concluded as follows:

1. The process of transesterification of jatropha curcas lin oil using catalyst of  $H_2SO_4$  resulted 89,7% yield of methyl ester.
2. Based on the standard of SNI 04-7182-2006 the physical and chemical properties of methyl ester jatropha curcas lin (density, kinematic viscosity, flash point, cloud point, cetan number ) full fill the quality standard of as biodiesel (methyl ester).
3. The chemical properties of jatropha curcas lin methyl ester (water contain, free glycerol, total glycerol, carbon residue, acid number, sulfur, iodine number, and alkyl esters contain, based on the SNI 04-7182-2006, qualify the standart quality of biodiesel (methyl ester).

### Suggestion

It is expected that a further research on the other vegetables oil source will be carried out. Thus, better quality of methyl ester can be invented.

## References

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# The Quality of the Production of Methyl Ester from *Jatropha Curcas lin* Using Catalyst of $H_2SO_4$

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## Abstract

The purpose of this study was to elucidate (1) to investigate the yield of methyl ester *jatropha curcas lin* oil, (2) to analyze physical and chemical properties of methyl ester *jatropha curcas lin* oil. In this research, transesterification was conducted using catalyst of  $H_2SO_4$ . Meanwhile, the counted standard of ASTM: D 1298, D 445, D 93, D 613, D 2500, D1796, D 6584, D6584, D 4530, D664, D1266, AOCS Cd. 1-25 and calculated, were employed to examine the density, kinematic viscosity, flash point, cloud point, cetan number, water content, free glycerol, total glycerol, carbon residue, acid number, sulfur, iodine number, and alkyl esters content. The results of the research show that (1) the process of transesterification using catalyst of  $H_2SO_4$  produces yield of 89,7% methyl ester (2) the physical and chemical properties analysis of methyl ester *jatropha curcas lin* fulfill the requirement of the SNI (Indonesia National standard) of 04-1782-2006.

**Keywords:** methyl ester, *jatropha curcas lin*, transesterification, catalyst of  $H_2SO_4$

## Introduction

As the consequence of the rapid development of technology and industry, the demand of the fuel, especially the fossil fuel, which is unrenovable energy, decreases. The constant massive consumption of fossil fuel will lead to the energy crisis. Besides, the emission of CO and  $CO_2$  gasses resulted from the use of fossil fuel could harm the human and even animal health. Furthermore, the current issue of global warming is also attributed to the use of the fossil fuel. Those are the main reasons of the scientist in conducting a research both to investigate the global impact of the use of fossil fuel toward environment and to discover the new renewable energy sources.

Recently, the development of a new technology has a tendency to improve efficiency and energy management, as well as replacing the fossil fuel usage with renewable energy. This is attributed to the fact that renewable energy shows a more environmentally friendly. Thus, it can contribute to the reduction of global warming issues. One of the most significant renewable energy is a vegetable oil. The vegetable oil is converted to be biodiesel (methyl ester) through the process of transesterification.

Vegetable oil is chosen to be one of the most efficient renewable source since it offers several advantages. Compared to that of diesel oil, methyl ester has higher burning efficiency, lower sulfur and aromatic content. Besides, it also has high flash point, and better lubrication [1, 2]. In the higher level, the domestic use of methyl ester is decreasing the national budget allocation as well as reducing the dependency on the fossil fuel [1,3]. Furthermore, methyl ester is sulfur and carcinogenic free, safe, and renewable [4]. Besides, methyl ester contains more oxygen thus the combustion is cleaner and more environmentally friendly [5]. A high cetana number as well as flash point of methyl ester also contributes in decreasing the pollution and the cancer risk [6,7].

However, the direct applications of this oil causes many problems in engine due to its higher density, lower heating point, slower nebulization and lower engine performance [6]. Technically, the main disadvantage of the methyl ester and its mixture is the lower density triggering the fuel degradation as. It also contribute to the formation of deposit layer in the lower part of the tank. As the result of it, the fuel filter can get dirty more easily.

In spite of those facts, in December 30<sup>th</sup> 2008, the 50:50 mixture of Jet fuel A-1 and methyl ester *jatropha curcas lin* was successfully used in the flight test of Boeing 747 from Auckland [8].

The following experiment was conducted on April 1<sup>st</sup> 2011 by Interjet completed the first Mexican aviation biofuel. The experiment was executed using Airbus A320 with the 70:30 mixture of traditional fuel biojett with methyl ester jatropha curcas lin Erin Veogale for methyl ester Magzine, 2011, accessed on October 13<sup>rd</sup>, 2013. Furthermore, in October, 28<sup>th</sup> 2011, China successfully conducted the flight using Boing 747-400 surrounding Beijing airport. The 50:50 mixture of the conventional jet fuel with the methyl ester was used in that flight.

Nonetheless, those experiments were merely focused on the characteristic of diesel engine with methyl ester as fuel, yet only limited studies have been carried out investigating the quality of methyl ester from vegetable. Thus, the purpose of this study is to analyze the quality of methyl ester jatropha curcas lin oil.

## Method

Methyl ester from jatropha curcas lin is obtained through the process of transesterification by catalyst of H<sub>2</sub>SO<sub>4</sub>. The method is employed to examine the physical and chemical properties of methyl ester jatropha curcas lin oil, meanwhile, the counted standart of ASTM: D1298, D445, D93, D2500, D 613, D1796, D6584, D6584, D 4530, D664, D1266, AOCs Cd. 1-25 and calculated, were employed to examine the density, kinematic viscosity, flash point, cloud point, cetan number, water contain, free glycerol, total glycerol, carbon residue, acid number, sulfur, iodine number, and alkyl esters contain.

## Result and Discussion

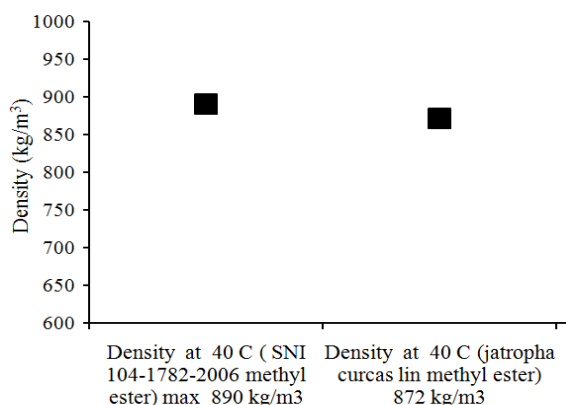
### 1. Yield of Methyl Ester Jatropha Curcas Lin

The process of transesterification using catalyst of H<sub>2</sub>SO<sub>4</sub>, which was executed to produces methyl ester, resulted 89,7% yield of methyl ester. The process of methyl ester production was able to be performed without the process of esterification. This is due to the experiment result showing that only 1.05% of free fatty acid (FFA) contained in jatropha curcas lin oil, while the maximum standard of transesterification process is FFA 2%. Therefore the production process of methyl ester can be directly executed by the process of transesterification.

The production process of methyl ester through the process of tranesterification using catalyst of H<sub>2</sub>SO<sub>4</sub> produces 89.7 % yield of methyl ester. It proves that the raw material influences the result of methyl ester, in which the newer the seed of jathropha curcas lin is, the better the quality of methyl ester will be. Besides the yields will also decrease. On the contrary, the longer the period of keeping the seed of jathropha curcas lin, the worse quality of the oil will be obtained.

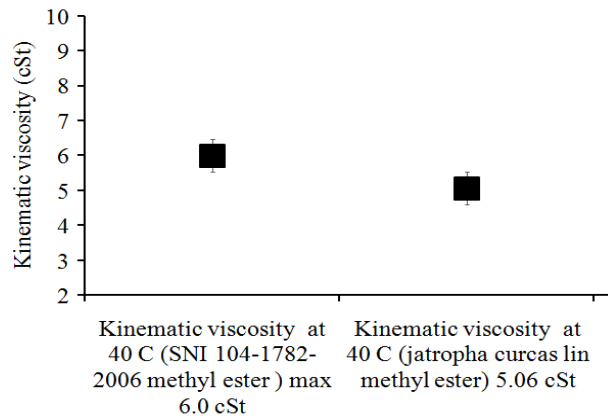
### 2. The Physical and Chemical Properties of Methyl Ester Jatropha Curcas Lin

The results of laboratory experiment of physical and chemical properties of jatropha curcas lin methyl ester are shown in the Figure 1 to 13.



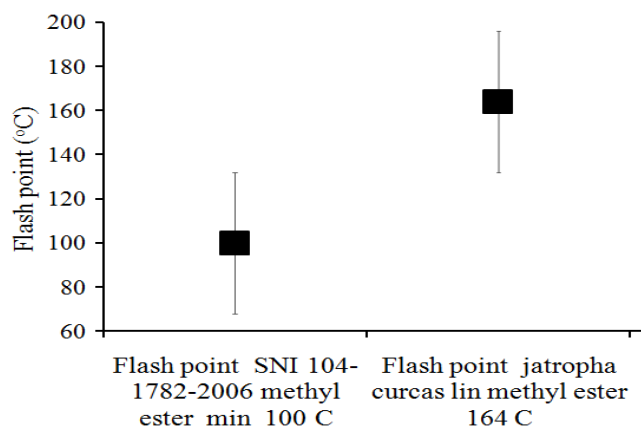
**Figure 1:** Density of jatropha curcas lin methyl ester and the standard of SNI of 04-1782-2006

Figure 1 shows the result of density experiment of jatropha curcas lin oil methyl ester. It indicated that the density of jatropha curcas lin oil methyl ester on the temperature of 40°C is 872 kg/m<sup>3</sup>. Meanwhile based on the SNI 04-7182-2006, the density of jatropha curcas lin methyl ester on the temperature of 40°C is 850-890 kg/m<sup>3</sup>. It shows that the methyl ester obtained from jatropha curcas lin oil is qualified as the fuel of diesel oil. A bigger density will require bigger mass of injection. The density of methyl ester will improve as the increasing of the number of the double linkages and the decreasing of the chain length [3].



**Figure 2:** Kinematic viscosity of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

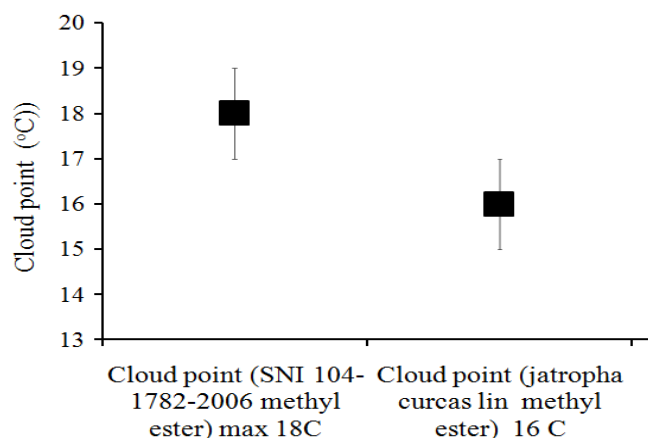
Figure 2 shows the viscosity of methyl ester jatropha curcas lin. The laboratory result experiment shows that the viscosity of methyl ester jatropha curcas lin on the temperature of 40°C is 5.75 cSt. Meanwhile based on the SNI 04-7182-2006, the viscosity of methyl ester on the temperature of 40°C 2.3-6.0. Thus viscosity of the methyl ester is qualified to be applied in as the fuel in the diesel engine. Viscosity is the most essential properties of methyl ester, since it influences the operation of injection fuel apparatus especially in the low temperature. This is due to the fact that in the low temperature, the increase of viscosity impacts the fuel fluidity.



**Figure 3:** Flash point of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

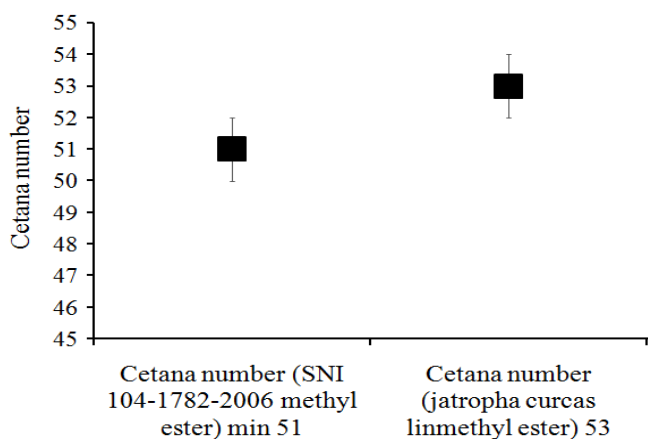
Figure 3 shows the flash point of jatropha curcas lin methyl ester. It indicates that in the gas phase, the flash point of methyl ester is 164°C, which is higher compared to that of diesel oil. In other word, when being heated in the same temperature, methyl ester will burn faster due to its shorter molecule containing methyl on each of the edges. Besides, it is also caused by higher oxygen and hydrogen contain and reactive characteristic of the molecule which is flammable when heated. Meanwhile, based on the qualification of SNI 04-7182-2006, the minimum number of flash

point of methyl ester is 100°C. Hence jatropha curcas lin methyl ester is qualified to be applied as the diesel fuel.



**Figure 4:** Cloud point of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

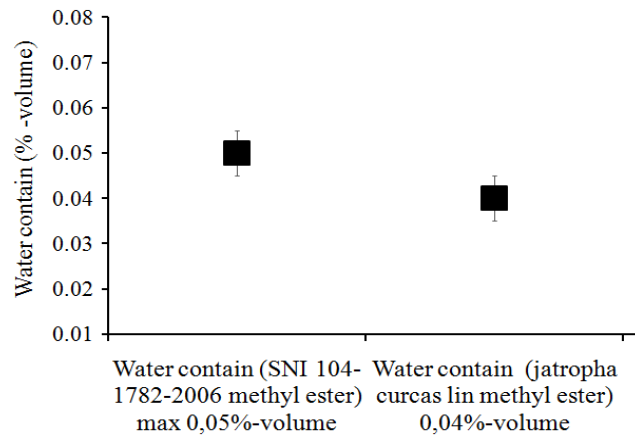
Figure 4 shows the cloud point of jatropha curcas lin methyl ester. It shows that the cloud point of methyl ester jatropha curcas lin oil is 16°C. Meanwhile the qualification of the standard of SNI 04-7182-2006 is 18°C maximally. Thus methyl ester jatropha curcas lin oil is qualified to be applied as the diesel oil. For the fuel, the low cloud point indicates that in the process of injection, the cloud or tiny particles, which will react easily with oxygen and heat, will be easier to be formed.



**Figure 5:** Cetan number of jatropha curcas lin methyl ester and the standard of SNI 04-1782-2006

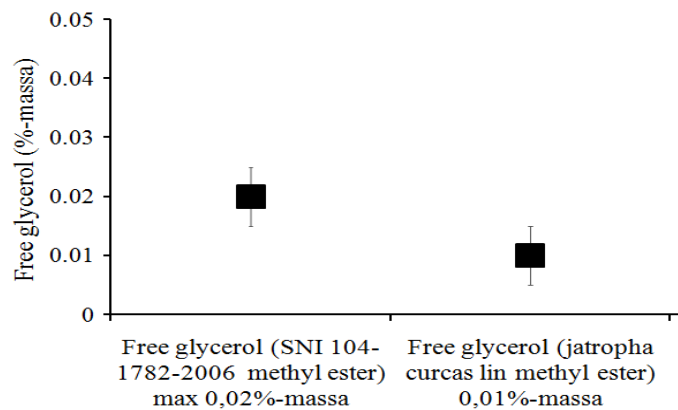
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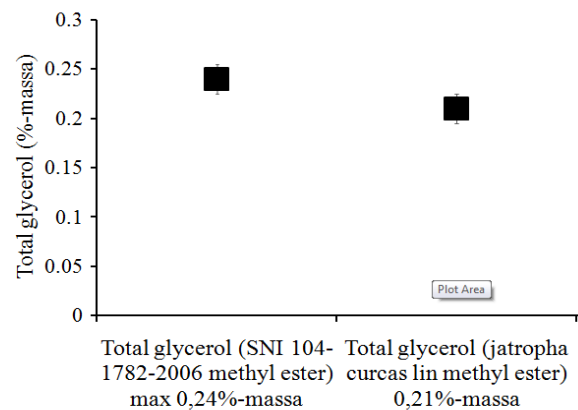


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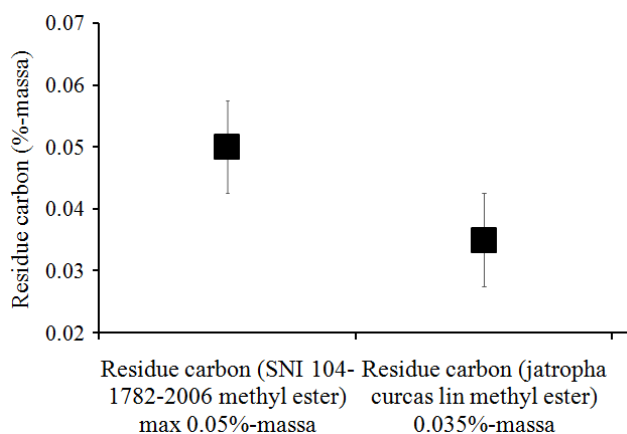


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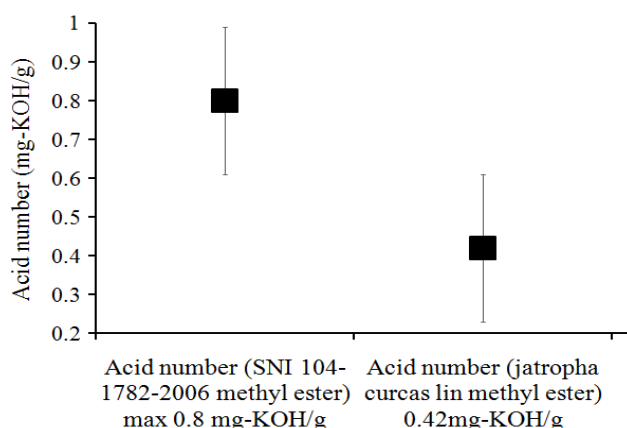
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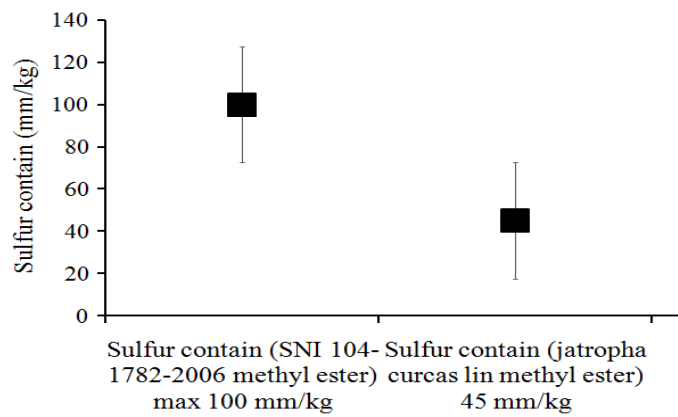
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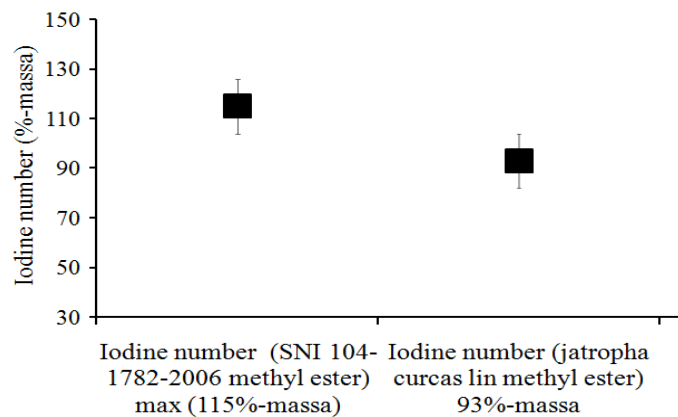
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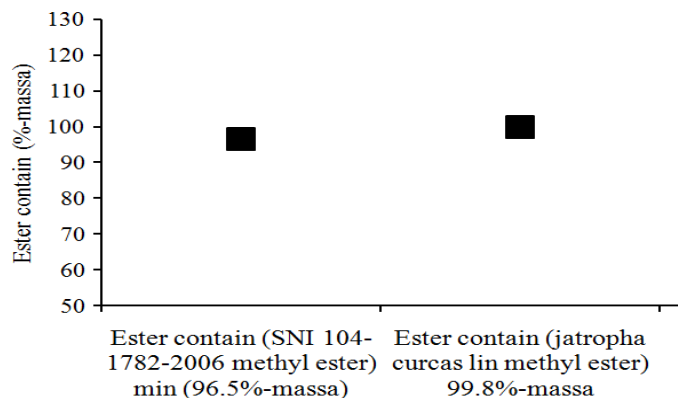
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## Conclusion and suggestion

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### Suggestion

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## **Dormitory Teachers Education System: Improving the Education Quality of Students Teacher in Indonesia to Answer the Challenges of Asian Economics Community (AEC)**

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### **ABSTRACT**

This writing aims to study in greater depth about the effort to improve the quality of education students through Dormitory Teachers Education System (DTES) organized by Education Institution of Teaching Staff (Lembaga Pendidikan Tenaga Kependidikan (LPTK) in order to respond to challenges of AEC through the study of literature. Dealing with the realization of the Asian Economic Community that next abbreviated AEC, education institutions in Indonesia prosecuted able to overcome the various problems of education relating to the development of the quality of human resources and the system of teaching, particularly students teachers on campus, to enable them to compete in a healthy with staff from abroad and able to adjust themselves against changes that occurred in various fields of community life, especially the field of communications technology and information systems. Addressing this, students are provided with teachers need to 4 (four) basic competences as set out in law of Indonesian Government (UU) No. 1/ 2005, Government Regulation (PP) No. 19/ 2005, and No. 74/ 2008, namely competence pedagogical, competence personality, social competence, and professional competency. Because of that, there needs to be an effort to improve the quality of education students teachers, whether academic pedagogic sharpening competence and professional through learning campus, as well as through education in the dormitory to bolster personal and social skills of them. Thus, this study is expected to be as a reference to implement the dormitory program for Students Teacher in Indonesia effectively and efficiently.

**Keywords:** Dormitory Teachers Education System (DTES), Students Teacher, Personal Competence, Social Competence, Asian Economics Community (AEC)

## **I. INTRODUCTION**

Responding to the realization of Asian Economics Community next abbreviated AEC education institutions in Indonesia are required to cope with problems education concerned with the development of the quality of human resources and system teaching and is expected to face the challenges age growing rapidly. One of a fairly significant impact of actual AEC was raise of foreign workers, including the insides were educators or better known as teachers.<sup>2</sup> This phenomenon will be new problems in Indonesia, especially in the sectors of basic education, medium, and colleges. Why? Until now, could not denied that the Indonesian Government still struggling with problems educational world complex. Similar thing also expressed by Azyumardi Azra in his article, that the problem education world was still going on in Indonesia in macro is:

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<sup>2</sup> Humphrey Wangkey, "Peluang Indonesia Dalam Masyarakat Ekonomi Asean 2015", *Info Singkat Hubungan Internasional DPR RI: Kajian Singkat Isu-Isu Terkini*, Vol. VI, No. 10/II/P3DI (Mei 2014): 8.

The opportunity have education limited, national education policy very centralized and stressed uniformity, education funding inadequate, accountability that concerned with the development and maintenance system and the quality of education still crippling, professionalism teachers and staff who are inadequate, and relevance still limp with community needs and the world of work.<sup>3</sup>

Statement above shows that professionalism teachers in Indonesia are still inadequate is one of the problems educational world need to look for a solution, that they are able to compete with exertion master of foreign. Statement relationship was also raised by Darmin Nasution, AEC will demand for competition in the services sector that requires professionals reliable.<sup>4</sup>

On the same occasion, Faisal Basri express improve the quality of human resources to compete in the face of mea 2015 to start from the process of education, for the ability community knowledge Indonesia are low than Singapore, Malaysia, Vietnam, and Thailand, so that education is a sector most important in the face of competition economic Southeast Asia next year, remember education is escalator of socioeconomic a nation.<sup>5</sup>

Reference on exposure various the fact above, real challenge to be faced by teachers is how they able to compete in healthy and conform of the changes that occurred in various sectors community life, especially a field of communications technology and information system. Change has an amount of impact real against the system learning to all formal educational institutions in Indonesia. It is characterized by of facility utilization the internet and various media audio-visual in the teaching and learning process in the class formally. The facilities promised a ease and comfort for the practitioners of education (teachers and students) in search of reference matter learning and do update information on symptoms natural happened, studies development knowledge and several research in the field of global education overall.

On the other hand, of various study that is, until now, the quality of teachers is suspected still unsatisfactory, both in terms of substance of science and competence in runs classes who educates.<sup>6</sup> Thus, to comment on the importance of increased professionalism teachers against a challenge real to be faced the, the Indonesian government in law (UU No. 14/ 2005) define teachers as professional educators with the main task educate, teaching,

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<sup>3</sup> Azyumardi Azra, *Paradigma Baru Pendidikan Nasional: Rekonstruksi dan Demokratisasi* (Jakarta: PT Kompas Media Nusantara, 2002), 15-16.

<sup>4</sup>Raymundus Rikang , “Hadapi MEA, Kualitas SDM Indonesia Harus Ditingkatkan.” *Kompas*, Juni 25, 2014, accessed May 14, 2015, <http://www.kompas.com/2015/05/14.html>. Pernyataan tersebut disampaikan dalam Seminar Nasional Peningkatan Peran Indonesia Menghadapi MEA 2015 di Hotel Pullman, Rabu, 25 Juni 2014.

<sup>5</sup> Raymundus Rikang , “Hadapi MEA, Kualitas SDM Indonesia Harus Ditingkatkan.”

<sup>6</sup> M. Hosnan, “Masa Depan Guru Profesional sebagai Ujung Tombak Peningkatan Kualitas Sekolah Unggul Dalam Era Globalisasi,” *ISQAE Proceeding*, (October 7-10, 2013): 60.

guiding direct, train, judge, and evaluate school tuition.<sup>7</sup> This means role of teachers as professional worker should apply the principle of professionalism who always held in high esteem and run in any process learning with an emphasis on the qualification important, competence, and certification, so that the it is hoped that teacher able to face the changes that occurred in various fields community life, especially for the education sector.

Follow up the problems have described above, the provision of professional teachers of course started with the process of education what they need to do as a student teachers in an Education Institution of Teaching Staff (LPTK) accredited the government. To comment on this, M. Nuh ever suggested that the government considered it important renew system the recruitment of education students teachers to capture seeds superior in number in accordance with planning program needs teachers in national; this policy must synergize program all the main unit associated with the planning needs, preparation, procurement, and insurance quality of teachers, including coordination with stakeholders education in the region.<sup>8</sup>

This statement will translate that education system in the LPTK play an important role to produce teachers who quality through improvements pattern selection and a means of supporting education as facilities to prepare college students professional teachers , as set out in Indonesia Government Law (UU No. 14/ 2005) article 23 paragraph 1 of what the models the preparation of teachers the future .Statement set out in the law are government developing system teacher training ties dormitory agency in an institution education of teaching staff (LPTK) to ensure efficiency and the quality of education.<sup>9</sup> So that, through Dormitory Teachers Education System (DTES) organized by LPTK, it is expected that the students teachers can obtain education has been able to meet standard professionalism as a teacher soon, especially in scope development competence personality and social competence. This competence is in line with the message of government regulation (PP No. 19/ 2005, PP No. 74/ 2008), said that teachers must having competence of pedagogical, competence of personality, social competence, and professional competence.<sup>10</sup>

Based on the background the problem that has been described above, then the discussion in this article will be focused on an in-depth study of the program implementation of Dormitory Teachers Education System (DTES) organized by LPTK to improve the quality

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<sup>7</sup> Prof. Dr. H. Sofyan Sauri, M.Pd, "Membangun Bangsa Berkarakter Iman dan Takwa Dalam Pembelajaran", *Proceeding Blog UPI*, July 28, 2010, accessed May 14, 2015. <http://file.upi.edu>.

<sup>8</sup> Dirjen Dikti, "Menyiapkan Guru Masa Depan", *Dikti Blog*, July 2013, accessed May 13, 2015, <http://dikti.go.id/blog/2013/07/05/membangun-generasi-menyiapkan-guru-masa-depan/>

<sup>9</sup> Dirjen Dikti, "Menyiapkan Guru Masa Depan".

<sup>10</sup> Dirjen Dikti, "Menyiapkan Guru Masa Depan".

of teachers education students in Indonesia for meet the challenges of AEC 2015. The program referred to the boarding that indeed aims to improve personal and social competence, while competence and professional pedagogical will be more effective if carried out in the campus.

This relationship with a statement put forward by Djohar that the establishment of competence personality started with experience someone in the environment where he lived (insight ecology), because when someone socializing with its environment (dormitory) directly will formed way of thinking, way to exercise restraint, way to comment on the state of including humans out of itself, way to comment on work, way to comment on problems, and how to solve problem<sup>11</sup>. Thus, pattern Dormitory Teachers Education System can be considered as the alternative solution to improve the quality of education Students Teachers in Indonesia.

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<sup>11</sup> Djohar, *Menggagas Paradigma Baru Pendidikan*, ed. Sindhunata (Menggagas Paradigma Baru Pendidikan: Penerbit Kanisius, 2000), 118.



## II. DISCUSSION

### 2.1 The Definition of Dormitory Teachers Education System

Definition of dormitory according to Indonesian Language Dictionary (KBBI, 2015) are building a residence for groups of people for a while, consisted of some room, and presided over by a head dormitory.<sup>12</sup> While education is the process of transformation attitudes and behavior person or group or effort to build the grown mature of man through the effort to teaching and training.<sup>13</sup> Understanding other expressed by Maksudin, that Dormitory Teachers Education System is a form of a school where their students learn in total the vicinity of the school, so that all kinds of the needs learn provided by school.<sup>14</sup> So, we can be concluded Dormitory Teachers Education System is teaching or training done in the meantime time to a particular group of people and on a particular place for the purpose change attitude and administration department someone to become mature .In the now, this system had been applied in several levels schools in Indonesia, from the basic education to medium-sized even college, although in practice not all education institutions in Indonesia using the Dormitory Teachers Education System.

### 2.2 Historical Review of Dormitory Teachers Education System

The Dormitory Teachers Education System in Indonesia has historical review held since the days of civilization Hindu-Buddha and thrived until now. In the Kingdom of Sriwijaya era, this system has done through the studied in a Monastery (Wihara) with discipline strict.<sup>15</sup> The Dormitory Teachers Education System in an Islamic Dormitory School (Pesantren) that has been growing on strong and positive impact in society of Indonesia up to now. In terms of the definition is, Writer Team from Department of Religious Affairs Indonesia in the Book of Pesantren Education System, define that Islamic Dormitory School is an education and Islamic teaching any it happened interaction 24 hours between Islamic religious leader (Kyai or Ustadz) as a Teacher and the Islamic Students (Santri) as an

<sup>12</sup> “KBBI,” Google Online Dictionary, last modified January, 2015, accessed May 18, 2015, <http://www.kbbi.web.id/>.

<sup>13</sup> KBBI, <http://kbbi.web.id/>

<sup>14</sup> Maksudin, “Pendidikan Nilai Sistem Boarding School di SMP IT Abu Bakar” (Disertasi, Program Pasca Sarjana UIN Sunan Kalijaga Yogyakarta, 2006), 8.

<sup>15</sup> Anonim, “Sistem Pendidikan Pada Masa Hindu-Buddha,” *Febasfi Blog*, November 2012, accessed May 19, 2015, <http://febafsi.blogspot.com/2012/11/sistem-pendidikan-pada-masa-hindu-budha.html>.

apprentice, by taking place in a mosque or in Islamic dormitory (Pondok), to study and discuss about books a religious text work divines.<sup>16</sup>

Pattern of Dormitory Teachers Education System were then develop into religious institutions dormitory schools, namely Madrasah (Islamic School), that is divided into 3 (three) level, namely first Madrasah Ibtidaiyah, which later abbreviated MI, is one form of a unit of formal education in under the jurisdiction of the religious minister that are implementing public education to the peculiarities of Islamic at the level basic education. Secondly, Madrasah Tsanawiyah, which later abbreviated MTs, is one form of a unit of formal education in under the jurisdiction of the religious minister that are implementing public education to the specificity of Islamic at the level of junior fundamentals as continuation of primary school, mi, or other forms of equal rank or continuation of study results recognized equal or at the primary or MI. Third level, namely Madrasah Aliyah, which later abbreviated MA, is one form of a unit of formal education in under the jurisdiction of the religious minister that are implementing public education to the specificity of Islam in secondary education as continuation of junior high school, MTs, or other forms of equal rank or continuation of study results recognized equal or equivalent junior high school and MTs.<sup>17</sup>

Pertaining to review above, the same pattern is applied to education seminary. Education seminary stressed the importance of togetherness in the life of community, for seminary having a system of education requires all their students stay in a boarding house.<sup>18</sup> Education system this will translate as a form of fellowship live together, in which it implying relation which is understand each other, learning each other, say hello to each other, to serve, and mutual giving in togetherness and solidarity brotherhood. The ideas about this condition show that the role of dormitory in seminary will teach the participants students that we were beaten competence of personality and social competence well. So, after seeing study of historical above, shows that education system give the benefit to every those who students in it. This is further strengthened with a view Aulia Reza Bastian suggested that the success

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<sup>16</sup> Tim Penulis Departemen Agama RI, *Panduan Madrasah Tsanawiyah Bakti Edisi No. 147-TH XIII* (Jakarta: Depag, 2000), 19-20.

<sup>17</sup> Isna Effendi, "Pembaharuan Madrasah," *Gudang Ilmu Blog*, May 4, 2011, accessed May 20, 2015, <http://gudangilmu.blogspot.com/2011/05/pembaharuan-madrasah.html>.

<sup>18</sup> AK Murti, "Seminari Berasrama," *UAJ Journal* (March 10, 2011):9, accessed May 20, 2015, <http://e-journal.uajy.ac.id/2221/3/2TA12497.pdf>.

of the program education is strongly influenced by environment (dormitory) in which students learn.<sup>19</sup>

### 2.3 The Effectiveness and Efficiency Analysis of Dormitory Teachers Education System

Looking at the challenge of AEC in education sector as detailed in the introductory section, efforts to improve the quality of education Students Teachers professional have to get special attention from the Indonesian government. The concrete steps of a discourse this is like released by a number of national newspapers, the national rector forum ask the government to provide support allocated for development education dormitory for Students Teacher. The rector of Jakarta State University Djilil, stated that dormitory are the instruments important in forming soul educator a teacher, for not all teachers can controls the science also hold soul educator in him.<sup>20</sup> This means dormitory had a role as the vehicle to train the Students Teacher be a professional teacher in the future, is not just transfer about knowledge, but also transfer various values positive concerned with the development of competence personality and social competence. Therefore, in this section will review deeply about how design systems more effective and efficient to improve the quality of students teacher education in the challenges of AEC. Why we need Dormitory Teachers Education System more effective and efficient? The word of effective in Indonesian Language Dictionary (KBBI, 2015) translates as the act of who brings about a result superior or useful, as an efficient having meaning able to perform their task properly and careful, without throw time and money in vain.<sup>21</sup>

Refers to the sense of both words, the effectiveness and efficiency of Dormitory Teachers Education System is a system built to accommodate boarding students teachers during their on-campus LPTK attended with the goal of producing quality graduates who Excel at, so it is able to run errands with precise, meticulous, and capable of being characterless comply personal hope is the Government in law (UU RI No. 14/ 2005 article 23 paragraph 1). Views were expressed by Azyumardi Azra in his book, *The New Paradigm of National Education* (2002), if we are talking about the future, campus was responsible for not just in higher scoring in science and technology, but also in character and personality through a role model in the campus environment (dormitory).<sup>22</sup> It means education in LPTK not only serves as the only institution empowered learners, in this case the student teacher, on aspects

<sup>19</sup> Aulia Reza Bastian, *Reformasi Pendidikan*, 61.

<sup>20</sup> Icha Rastika, "Rektor LPTK Minta Rp 2 Triliun untuk Bangun Asrama Guru," *Kompas*, May 7, 2015, accessed May 19, 2015, <http://www.kompas.com/2015/05/07/20594601/Rektor.LPTK.Minta.Rp.2.Triliun.untuk.Bangun.Asrama.Guru.html>.

<sup>21</sup> KBBI, <http://kbbi.web.id/>

<sup>22</sup> Azyumardi Azra, *Paradigma Baru Pendidikan Nasional: Rekonstruksi dan Demokratisasi*, 176.

of intelligence and skills, but should be aware of the importance of keeping morality (character) in order to develop the social personality and competence with regard to the ability of rational considerations when taking important decisions, along with their colleagues in real social life and at the moment directly participate in education in the future. So, it needs to be an emphasis of the parties on the establishment of the emphasis of LPTK direction, ethical sublime, faith and piety, insightful far forward, have integrity and independence, as well as having the skills and the mental skills for lifelong learning.<sup>23</sup> Thus, the system is the need for boarding LPTK nature urged to quickly followed up by LPTK to not only stop at the level of ideas or discourses that are not implemented according to expectations.

Depart from study on the effectiveness of Dormitory Teachers Education System as referred to above, pattern the LPTK with dormitory system with financing fully to university students teachers or full scholarship in Indonesia has been applied over the past 11 years (since academic year 2006 at now) by one of private universities in Tangerang, namely Pelita Harapan University (UPH). This campus facilitate students teachers the Faculty of Education (FIP) in the form of education scholarships students teachers, covered the cost of education, the cost of daily needs, the cost of transportation, and accommodation for field experience program (PPL) 1, 2, and 3, and the provision of dormitory in the campus area. The following will be presented the profile about Dormitory Teachers Education System a complete as a reference for the LPTK other to provide program the Dormitory Teachers Education System who insists on competence personality and social competence in the life of students teachers daily in the campus dormitory:

The Faculty of Education UPH dormitory built in July 2006 with the environment boarding that green, surrounded garden tidy and clean, insightful modern, education and characterless, devoted to the students of teachers from different regions who received scholarships to college in the campus. This hostel is designed to support preparations the prospective teachers that will bring transformation to the education sector. The program focuses for teaching intensive which can complement the Students Teachers to be the active agent in the education sector. This dorm lies inside campus environment to facilitate direct access to an area of campus. Boarding this provides experience life and living in a community centered on teaching and practice of religious character. As part of the process of growing, the staff student dormitory and the supervisor boarding participate life support the transformation of the occupant. The main purpose of this dorm, namely the transformation of education in holistic in all aspects of life in various activities religious activities and development character, as study deepening religious study and agenda routine meetings with staff student dormitory and supervisor dormitory.<sup>24</sup>

Referring to the study at over, the Dormitory Teachers Education System it turns out that it has been proven to have a positive impact to the development of competence personality and competence social students the teacher in they followed learning active in

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<sup>23</sup> Aulia Reza Bastian, *Reformasi Pendidikan: Langkah-Langkah dan Pemberdayaan Pendidikan Dalam Rangka Desentralisasi Sistem Pendidikan Indonesia* (Yogyakarta: PT Lappera Pustaka Utama, 2002), 60.

<sup>24</sup> "UPH Web," FIP-UPH Scholarship Program, last modified March 31, 2015, accessed May 20, 2015, <http://fip.uph.edu/>

campus. In other words, efforts to improve the quality of Students Teacher education through planting values character relevant with both the competence will be more effective and efficient if continue to be held in environment dormitory, where students teachers live. Why? For the formation and character education, cannot be done only s through knowledge in campus, but also through planting values in a dormitory.<sup>25</sup> There is at least 5 (five) positive value of dormitory education system that can be applied to the Dormitory Teachers Education System, associated with increasing competence of personality and competence of social as follows:

1. Capable of forming personal the fear of God through guidance religious activities dormitory, for example agenda reflection daily and musing along before rest at night or start the day before setting their experiences in the campus, facilitated by nanny dormitory.
2. Accustom life style honest, behave manners, and godly character generous environment in dormitory to students so they can built the good relationship in healthy with the community in everyday life, good in the neighborhood campus and outside campus pertaining to devotion to the people or while they were undertaking the task of field experience program. Opinion same thing expressed by Asyumardi Azra, that the school tuition, in this case students teacher, often are forced to make values intercommunication who often contradictory set of values, where in one hand teach them in religious education to be acting and behaving good, honest, frugal, diligent, discipline, and so on, but at the same time, there were several members of the vicinity of the school campus other conducting the act of opposite.<sup>26</sup> It is expected that through the honest behavior, manners, and develop fear of God attitude a noble in the dormitory community, students teacher can minimize deviate behavior or behavior as opposed to rule ethical or moral land in the general public.
3. Develop the habit of healthy living through nutritional food balanced and hygienic provided collectively by dormitory supervisor. Through these behaviors are, the health condition of students can remain maintained and growth properly, hopefully with a health students teachers who prima the, so students can follow the process learning academic on campus in full. This statement in accordance with the idea of Indonesia Education and Culture minister Anies Baswedan, that one of the material in

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<sup>25</sup> Azyumardi Azra, *Paradigma Baru Pendidikan Nasional: Rekonstruksi dan Demokratisasi*, 175.

<sup>26</sup> Azyumardi Azra, *Paradigma Baru Pendidikan Nasional: Rekonstruksi dan Demokratisasi*, 180.

learning in campus is educate the school tuition to live healthy, for components education and its campus institutions including education with dormitory system in it, can serve to make campus as a learning healthy life .<sup>27</sup>

4. Encourage every students teacher are productive and performed well in academics and non-academic. Dormitory Teachers Education System made time learn on campus had been more effectively and efficient, for students teachers are easy to access of various facilities and literature that available relating to the process of learning, without having to wasting charge for transportation, accommodation, and power from their home to campus, only to complete a task college. Thus, if supporting facilities as referred to above sufficient, the more open an opportunity for students a teacher, to expand their self and accomplishment they have.
5. Pattern of Dormitory Teachers Education System can develop the ability of cooperation, attitude tolerance, and cares for fellow-student teachers who derived from the background tribe, religion, social status and a different economy. Life in dormitory actually educate students develop independence, discipline, and able to regulates every activity daily well. This means dormitory education train students teachers to accustom itself into personal mature and responsible, for examples awake much morning to prepare go to campus, do their tasks college with the initiative without the need to repeatedly, such as may he had done previously while living with the old man, and still many more positive things that may be developed by they are related with competence personality. So that it can be said in dormitory life, students training for mutual care, having independence, discipline, one another in good, and do not divide between social status and economic in intercourse daily in a dormitory.<sup>28</sup>

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<sup>27</sup> Azyumardi Azra, *Paradigma Baru Pendidikan Nasional: Rekonstruksi dan Demokratisasi*, 180.

<sup>28</sup> Anonim, "Pola Asrama," *Pasca Undiksha Blog*, accessed May 19, 2015, <http://pasca.undiksha.ac.id/media/1241.pdf>.

### **III. CONCLUSION**

Based on the analysis have been written down in the above, so can be concluded that Dormitory Teachers Education System organized by Education Institution (LPTK) it has been proven to improve the quality of education students teachers in Indonesia effectively and efficiently, particularly in terms of the competence personality and social competence. Thus, it is hoped all the LPTK in Indonesia to follow up the dormitory education programs, so that the Students Teachers able to face the challenges of Asian Economic Community (AEC) in the holistic education sector.

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# Social Studies Teacher Role in the Development of Pattern Learning System Facing AEC 2015

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## ABSTRACT

ASEAN Economic Community 2015 entered into force. This condition has an impact on the economic sector, not least education as capital to build a competitive human resources. Asean Economic Community challenges in education are the proliferation of foreign educational institutions, educational standards and orientation of the increasingly pro-market, as well as labor flooded foreign labor. This is where teacher's role should be able to change the condition towards a more advanced education, especially social studies teacher is to show the development of the system to learn patterns of the ASEAN Economic Community as the year of 2015. This can be achieved if the teachers professional development refers the constitution No. 14 Year 2005 on Teachers and Lecturers, who are associated with pedagogical, personality, social and professional. This research uses a descriptive method, the method of research that aims to describe an event as well as provide analysis and solutions to a problem. Thus the role of professional Social studies teacher can be expected to be able to make graduates that able to compete with the best foreign graduates, face the Asean Economic Community (AEC), which will held on December 2015 to come.

**Keywords:** Social Study Teacher, Pattern Learning Systems Development, AEC 2015

## A. INTRODUCTION

Asean Economic Community 2015 is a Economic integration to face free trade among ASEAN Countries. All Countries ASEAN members have agreed this agreement. Asean Economic Community MEA designed to realize ASEAN insight 2020. In face competition during this MEA, ASEAN Countries have prepared human resources who are skilled, smart, and competent.<sup>2</sup> Looking towards this Indonesia learner to face this Asean Economic Community. The challenges faced big enough to face this AEC, are natural resources and human resources. The challenge natural resources in Indonesia is the amount of natural resources that still managed by the foreigners. Meanwhile human resources in Indonesia not well prepared yet to compete in ASEAN context.

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<sup>2</sup> Kompasianan, (2015.) [http://www.kompasiana.com/fitri-kompasiana/asean-economic-community-aec-2015-peluang-dan-tantangan-indonesia-are-you-ready\\_54f](http://www.kompasiana.com/fitri-kompasiana/asean-economic-community-aec-2015-peluang-dan-tantangan-indonesia-are-you-ready_54f)

Education in Indonesia must prepare human resources ready to face this MEA, by preparing students to able in communicate by using international language (English), as well as prepare them to have the skills that are needed as the others those in ASEAN. With the MEA is certainly there will be an impact for the Indonesian people to pursue a standard of competence as expected.

In addition, to improve the intellectual, of course, character skills must also be strengthened. Indonesian human during a week had received the "arrival of foreign nations" to the motherland. Do not let Indonesia then controlled by the foreign nations in all fields, that may course lost of Indonesian identity and became a stranger in its own home. The role of education is actually very great, especially the method of learning in social studies. As well as the role of professional social studies teacher that is highly expected as the creator of the human resources that would become actors in AEC.

## **B. RESULT AND DISCUSSION**

Teachers in the era of AEC 2015, should be ready to compete with faculty from outside of Indonesia, because of free market, workers from outside will be free to seek work between cross-country, including a lecturer in Indonesia. Therefore, teachers in Indonesia must be prepare by improve the quality as a professional educator to prepare for the competition among the countries of Southeast Asia. Because today's special concern for teachers that Indonesia as a country that is almost a third of the population is under 15 years, they should invest more and empower youth generation in order to maintain economic growth and social well-being of the future, and be able to compete with other nations, namely by equipping them in the teaching and learning process, especially how to build the system and the learning patterns to support the readiness of students for AEC 2015.

### **Students Reality**

The condition and reality today, there are many students who do not have good personal, have no manners when talking with the teacher, even directly dared to resist or refute the advice of the teachers. It is ironic that needs to be completed up to the roots. The role of the parents also should support, that in the home students should be taught good manners, courtesy, and gentle in there. To date, 2015 students' awareness of the manners wane. It is

ironic to we see the character of the students. Could it be that they are prepared for a life full of the competition?.

From year to year, science and technology are growing and keep on the progress. Indonesian state should be able to compete with other countries. We need to know a country is said to be advanced if education in the country also advanced. Currently, the students' awareness about their obligation to learn is more missed. They just want something instantly without trying diligently. As a result when you view the value of the new semester is completed, most of them would have to do remedial to correct their value. Previous this homework should be done both by parents and teachers at the school if you want the Indonesia is not lagging behind other countries.

Conditions such students, the authors propose to use contextual learning method (CTL, Contextual Teaching and Learning), addressed to the students in toward AEC 2015 that related to the learning model of Social Study. Contextual Learning (Contextual Teaching and Learning/CTL) is an education process that is holistic and has aims to motivate students to understand the significance of the subject matter that learned by linking the material in the context of their day-to-day (personal context, social, and cultural) so that the students have knowledge/skills that are flexible can be applied (transferred) from one problem/context to the issues/other contexts.<sup>3</sup>

### **Contextual Learning**

Contextual learning with constructivism approach is seen as one of the strategies that is approach the principles of competency-based learning. With five contextual learning strategies (contextual teaching and learning), namely Relating, experiencing, applying, cooperating, and transferrini expected learners are able to achieve the maximum competence.

In the contextual class, the teachers task is to help students to achieve their goals. More teachers to deal with strategy rather than giving information. The task of the teachers manage the class as a team which work together to find something new to the class (students). Something new comes from finding themselves instead of what the teacher said. That's the role of the teacher in the classroom run by a contextual approach.

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<sup>3</sup> Ariszudirismawan, (2015) Kondisi Pendidikan Indonesia saat Ini ([ariszudirismawan.blogspot.co.id/2012/12/kondisi-pendidikan-di-indonesia-saat-ini.html](http://ariszudirismawan.blogspot.co.id/2012/12/kondisi-pendidikan-di-indonesia-saat-ini.html). diunduh 11-11-2014)

Contextual learning is a learning that begins with a dish or a question and answer orally (friendly, open, negotiation) related to the real world of student life (daily life modeling), with respect to atmosphere of facing the Asean Economic Community in 2015, so the response for the students will be felt the benefits of the material that will be presented such are, the motivation to learn appears, world student's mind becomes concrete, and be a conducive atmosphere comfortable and enjoyable. The principle of contextual learning are student activities, students perform and experience, not just watch and take notes, but to development of social skills.<sup>4</sup>

Relating to the contextual learning, students are taught to understand about global education which is an attempt to instill a vision of the world to the students by focusing that there are interconnections between culture, humanity and today's world. In general, the purpose of education on each subject to the condition nowadays emphasized on students' ability to think critically. Global education's goal is to develop the knowledge, skills, and attitudes that needed to live effectively in a world of dwindling natural resources and is characterized by ethnic diversity, cultural pluralism and increasingly interdependent. The need to improve the orientation of students in the international outlook increasingly recognized. Nevertheless, the particular Indonesia, still efforts to improve and expand global understanding on primary and secondary education institutions still need to be empowered.

Advances in technology, abroad trade, cultural exchanges, tourism, environmental awareness, market competition, scarcity in natural resources is the image of the condition of international community is increasingly in complexly. The interdependence between nations and states give rise to create of cooperation in all fields which also give rise to a variety of competition and conflict, specially in face Asean Economic Community 2015. As a result of development in technology which is accompanied by the emergence of problems, realized or not will cause any contact or cultural allusions among nations.

Events or occurrences in the above process called globalization which influence the educational process. The American Association of Colleges For Teacher Education (AACTE, 1994) suggest that 'globalization is said to necessitate changes in teaching, such as more attention to diverse and universal human values, global system, global issues, involvement of

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<sup>4</sup> Dedi, (2013) Pengertian Pembelajaran Kontekstual (<http://dedi26.blogspot.co.id/2013/06/pengertian-pembelajaran-kontekstual.html>. Diunduh 11-11-2015)

different kinds of world actors, and global history. From this statement the indicates that the era of globalization requires a change in strategy and teaching methods, among others, with put more attention to diversity and universal human values, systems and global issues and linkages with the global community and global history. How characteristic of the process of globalization? National Council for the Social Studies (NCSS, 1982) suggests some symptoms or the phenomenon of the globalization process as follows:

1. The evolution in global transportation and communication systems
2. The incorporation of the local economy, regional and national into the global economy
3. The increase in the intensity of the interaction between the people who created the culture of local, regional, national and religious
4. The emergency of an international system that erodes the boundaries of traditional international politics and national politics
5. The increase of the impact of human activities on the ecosystems on earth
6. The increase of global awareness on growing awareness of the position of man on earth as a member of society, as the inhabitants of the earth and a member in the global system.

Human life in the era of globalization has brought in a stream that requires us to change the perception of our own self and the perception of others. Views of a nation or a state that is turning away from the global outlook will only isolated the state or nation. In the era of globalization Takada of a nation or country in the world that can hide or isolate themselves from the influence of globalization, especially the most special is the interaction with the Asean Economic Community in 2015.

Thus, the relationship or dependency living in this society has caused an increase in the importance of mastery a knowledge and professional skills of the citizens of the world are a require to have a better understanding of the phenomenon of global dimensions of politics, economy, and culture. Every nation either individually or in groups facing competitors in all aspect. Thus globalization has demanded every citizen of the world to improve the quality of human resources (HR) to face the competition because in this era of highly qualified only man who will be able to survive or continue to exist.<sup>5</sup>

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<sup>5</sup> Sapriya, (2009). Pendidikan IPS (Konsep dan Pembelajaran). P.T. Remaja Rosda Karya : Bandung

By understand the statement above, it is appropriate to prepared the characteristics of contextual learning in order to face the MEA 2015. Here are seven characteristics of contextual learning components :

a. constructivism

- a) Develop an understanding of students based on new experiences as knowledge initially
- b) Learning to be packaged as the process of constructing, not only to receive the knowledge

b. inquiry

- a) The process of moving from observation to understanding
- b) Students learn to use critical thinking skills

c. asking

- a) For teachers: encourage, guide and assess students' thinking skills
- b) For students: an important part in inquiry-based learning

d. cooperative learning

- a) A group of people involved in learning activities
- b) Working with others is better than learning alone by themselves
- c) Share the experiences
- d) Sharing ideas / ideas

e. modeling

- a) The process of the appearance of a sample to enable students to think, work and study
- b) Work on what the teacher wanted

f. reflection

- a) How to think about what they have learned
- b) Take note of what has been learned
- c) The tasks that are relevant and contextually

g. the actual assessment

- a) Measure the knowledge and skills of the students
- b) Product assessment/performance
- c) The tasks that are relevant and contextually

Learning the characteristics of these CTL emphasizes cooperation, mutual support, fun and not boring, passionate learning, integrated learning, using a variety of sources, which

students are active, sharing between friends, critical students, creative teachers, and hallway is full of students' works. Reports to parents not only in the form of a report card but also students' work. Thus, students will feel graded in the teaching and learning process, and the attention of parents will be supported to see academic progress as well as the character of their children.

This problem is more serious when confronted with the fact that during learning process Social Study one received less attention indeed. Yet, by understanding the Social Study will guide the students to face the reality in a social environment and can face social problems that occur with more wise and prudent. Toward challenge for this change, in fact the teachers who should guide the students to open up horizons of social knowledge, the teachers are required professionals. Teachers no longer play as a transmitter of information, but they should to be mentoring the students in developing knowledge and acquire learning fun, meaningful and has quality. Teachers are required at all times to improve their competence through a variety of reading material, seminars, and research done to improve the quality of learning in class. It will all increase the knowledge and creativity of their students.

### **Role of Social Studies Teacher**

Teacher-related role in facing the challenges of teaching for the 21<sup>st</sup> century, several trends are likely to continue, and some aspects of education also teaching will remain the same, while others may change dramatically. On the one hand, major changes occur in the way of storing and accessing information with a computer and digital technology will change many aspects of education. At present and in the future, the Internet has the potential to connect students to the resources that were previously unavailable. Internet will be the media and information that will substantially change the shape of the mold and visual publications. This means that teachers, especially Social Study Teachers have to define a lot of lessons and tasks that they provide to students<sup>6</sup>. Therefore, the role of social studies teachers should always be up to date on the latest information and technology in preparation for teaching and learning process in the face of AEC 2015.

One container expected to develop the professionalism and competence of teachers are the various program activities that can realize programs to improve the quality of education

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<sup>6</sup> Arends RI, (2008). Learning To Teach (Belajar Untuk Mengajar). Pustaka Pelajar : Yogyakarta



and spirit of education it self. Social Science Teachers was formed to develop the competence and professionalism suit the demands of the rapidly evolving world of education. For that demanded creativity of teachers so that teachers can foster character who is able to develop themselves and jointly responsible for the advancement of the teaching profession and learning process.<sup>7</sup>

### **The character value**

But no less important that a teacher in the learning process needs to practice cultivation character values that are necessary to face AEC 2015. We as a teacher should be able to develop the character of the students as citizens, while the stages are through the stages of knowledge, acting and toward habits. This means that the character is not limited to the knowledge. The characters more deeply, reaching the area of emotions and habits themselves. Thus, the necessary three components of good character (components of good character) are knowledge of the moral, moral feeling or sense of morals and moral action. These are necessary so that students students would be able to understand, feel, and work at the same time good values.

Character education should be imparted to the students later. Due to the requirements in the world of work will not only emphasized on intellectuality and students creativity, but also emphasis on character, behavior and attitude of students in order to create students who are resilient in facing the formidable AEC 2015. Students are those who have quality as an agent of change who are ready to anticipate various changes is the impact of AEC 2015 and has a positive character that include intellectual abilities, skills and trained in work ethic.<sup>8</sup>

he world of education is now more emphasis on improving the intellectual abilities and skills simply being offset by the planting of ethics. Much less commendable behavior performed by the students, as the student brawls in various regions. Various mental fights students show these students still can not be said to be qualified. Because the quality of students who are students that character. Seeing such conditions, the need for character education to students to create students who are qualified and resilient in the face of the AEC 2015. In order to compete if not promote muscle but a smart brain but prudent in its use.

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<sup>7</sup> Ahmadi IK, Amri S, ( 2011). Mengembangkan pembelajaran IPS Terpadu. Prestasi Pustaka: Jakarta

<sup>8</sup> Sapriya, (2009). Pendidikan IPS (Konsep dan Pembelajaran). P.T. Remaja Rosda Karya : Bandung

As stated in the National Education Law No. 20 2003 Chapter 1 Article 1 that education is a conscious effort and planned to create an atmosphere of learning and the learning process so that learners are actively developing the potential for him to have the spiritual power of religion, self-control, personality, intelligence, noble morality and skills required him , community, nation and state (Act No. 20 of 2003 on National Education System). While developing education with reference to a wide range of theories about education. Such as Rousseau's theory which is one of the leading education states that education is natural produce and spur the development of such qualities of happiness, spontaneity, curiosity. Pestalozzi believes that the way to learn to recognize a variety of concepts is through a variety of experiences such as by counting, measuring, feel and touch. Teachers have more time in school, have ample opportunities to instill character values.<sup>9</sup>

Human soul, ranging from fantasy to incarnate as a power way of thinking and behaving that is characteristic of each individual to live and work, both within the family, society, nation and state; set of attitudes (attitudes), behavioral (behaviors), motivation (motivations), and skills (skills); character, temperament, character, or personality are formed from the internalization of various virtues (virtues) who believed and used as the basis for perspective, think, behave and act. It is highly supported by pengampu education policy in Indonesia, namely the Ministry of Education and Culture has published a book of training and educational development of the nation's cultural character which are prepared by the Research and Development of Curriculum Centre Ministry of National Affairs. The book is composed of eighteen character education cultural character of the nation that is religious, honesty, tolerance, discipline, hard work, creative, independent, democratic, curiosity, the spirit of nationalism, patriotism, cherish the achievements, friends / communication, love peace, likes to read, as well as environmental care and social responsibility.<sup>10</sup>

Therefore the learning patterns based contextual balanced with character education, students are expected to be ready to face the Era of the Asean Economic Community 2015.

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<sup>9</sup> Tetty Tanoyo (2014), Sudah Siapkah Kita Menghadapi MEA 2015 (<http://www.tettytanoyo.com/2014/09/sudah-siapkan-kita-menghadapi.html>. Di unduh 3/11'2015)

<sup>10</sup> Wibowo, A. (2013). Pendidikan Karakter di Perguruan Tinggi – Membangun Karakter Ideal Mahasiswa di Perguruan Tinggi, Pustaka Pelajar, Yogyakarta.

### C. CONCLUSION

ASEAN Economic Community (AEC) in 2015 (English: the ASEAN Economic Community (AEC) is an ASEAN economic integration in the face of free trade between countries of ASEAN countries. All ASEAN members have agreed to this agreement. AEC is designed to realize the ASEAN Insight 2020. In the face competition is very tight during this AEC, the ASEAN countries must prepare the human resources (HR) is skilled, intelligent, and competitive.

Contextual Learning (Contextual Teaching and Learning/CTL) is an education process that is holistic and aims to motivate students to understand the significance of the subject matter learned by linking the material in the context of their day-to-day (personal context, social, and cultural) so that students have knowledge / skills that are flexible can be applied (transferred) from one problem / context to the issues / other contexts. Especially in the face of the Asean Economic Community 2015.

In this study the role of the teacher guides the students open up horizons of social knowledge. Teachers no longer function as a transmitter of information, but should be a mentor students in developing knowledge and acquire learning fun, meaningful and quality. Similarly, Guru task in facing the challenges of teaching for the 21st century, it is expected always up to date on the latest information and technology in preparation for teaching and learning process in the face of AEC 2015. But no less important that a teacher in the learning process necessary to practice the cultivation of character values that are necessary in the face of competition between these Asean Economic Community. The need for character education imparted to the students, because the requirements in the world of work not only emphasizes on intellectuality and ketrampilam students, but also emphasis on character, behavior and attitude of students who are resilient in facing the formidable AEC 2015. Students are those who have quality as an agent of change that ready to anticipate the changes that resulted from the AEC 2015 and has a positive character that include intellectual abilities, skills and trained in work ethic.

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## ACTUALIZATION OF PARENTING EDUCATION PROGRAM TO ENCOURAGE THE OPTIMIZATION OF NON FORMAL EDUCATION

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A successfulness of an education, particularly non-formal education, is a contribution of the environment of family, government, and society. This 'responsibility' is much more dominant in the environment of the family. One of the functions and responsibilities of parents as a prominent part of a family is the function of education where the parents are the first and the primary educators for children. 'The first educators' stated that parents are the first person who gives the foundation of the essence, principles, and purposes of education through referrals, guidance, discourses, and advices that is necessary to children before their formal education outside their home. Therefore all parents ought to have 'adequate provision' to be educators in order to provide the best primary education to children.

Furthermore, 'the primary educators' stated that parents are expected to be dominant educators for children. Education from parents is an absolute education that means any others educations are merely a support and complement. Therefore, it is pivotal for parents to have sufficient time to educate their children through properly parenting program to minimize any 'contamination' of bad influence that is not appropriate with the parent education.

Recently research, based on a limited survey data, showed that the majority of parents are less able to do a proper parenting program because of their lack of understanding about it. Therefore it is necessary to train the parents as a support for formal and non-formal education.

The purpose of this paper is to give a brief overview of the efforts actualization parenting program education in order to support the optimization of non-formal education program. Furthermore, the method used in this paper is a conceptual analysis which is supported by the limited observations and interviews.

Finally, the methods of preparation for the actualization of parenting education by planning, organizing, implementation, and evaluation. The planning step describes the determination of the theme, determination of participants, determination methods, and determination of the facilitator; the organizing step includes the determination of the responsible and implementing activities; the implementation step includes pretest, exposure of the material, discussion, and closing and ending with post-test; the evaluation step includes an assessment of the planning and assessment of the implementation and evaluation of the attitude of the participants.

Keywords: Actualization, Parenting Education, Non-Formal Education

## INTRODUCTION

Along with the development of science and technology, our society is also being presented with the bad influence of the environment, such as drugs abuse, teenagers brawl, goon squad, theft, robbery, sex crimes, and any other violence which becoming more increasing nowadays. One primary factor of these problems is the lack of family education, because a family states the smallest community of a society which have an important role in the perpetuity and successfulness of a society.

Parents play an important role in a family, since parents have a function and responsibilities in providing some aspects such as educational, biological, welfare, social, and resilience aspects in families. The educational aspect determines the formation of the child's personality as well as the improvement of knowledge and skills competency. Furthermore, the responsibilities of parents on children in biological aspect includes physical development and health security of each member of the family. The welfare aspect covers physical well-being that includes children's primary, secondary, and tertiary requisites as well as psychological well-being, including fun and comfort in the home. The social aspect includes both among members of the family, families and the environment, and families with the larger community. Finally, the resilience aspect relates to the robustness and resilience of household security from threats both internal and external threats households. The discussion of this paper is focused on parents' functions and responsibilities in education aspects.

The functions and responsibilities in education aspect defines as parents as the first educators for children. It means that parents are the first person who gives the foundation of principles and purposes of education through referrals, guidance, discourses, and advices that is necessary to children. Parents shows the children what the good and bad thing, right and wrong, what should be done and should not be done as well as everything related to education that is useful in the formation of children personality before the their education from outside, either from his grandmother, maid, or other person. Therefore all parents ought to have 'adequate provision' of sufficient to be able to provide education to children.

Parents are also the primary educator of the children, which means parents are expected to be dominant educators for children. Education from parents is an absolute education that means any others educations are merely a support and complement. Therefore, it is necessary for parents to have a desire, capability, opportunity to educate their children in order to minimize undesirable influence from outside home that is not appropriate with the parent education.

Some cases are quite prominent in the context of the functions and responsibilities of parents in children education in Gorontalo province, according to the results based on the author's research, are: (i) the minimum understanding about the role of parents inside the family, (ii) the tendency of parents handed parenting to other person such as baby sister and (iii) the case of marriage at

an early age. These cases are assumed to be the opportunities that brings the negative phenomena in the society today.

In addition, non-formal education is a way of education that has unique characteristic compared to the formal education. for example, the non-formal education gives opportunities for dropout student from formal education as well as the unemployed person. Many dropout students for various reasons should be sought for taking education in non-formal way. Similarly, the number of residents who are unemployed then moved to non-formal education. There had been assumption that if these people didn't success in non-formal education, they were likely to do negative action such as crimes to survive.

Handling the dropout students and unemployment people is not simple, since they need to be motivated to learn. Motivation is required to improve their competence, and it is not simply gotten by tutor or teachers of non-formal education, but from the parents. Therefore, we need an adequate provision for parents on the role of motivating and encouraging to start to learn for these students. This method is expectable will minimize the bad influence from the society. It is based on the assumption that if children have enough education from their family, they will not be easy to accept and be involved in bad influence. Therefore, the basic idea of this paper is about parenting education, which further will be discussed about strategy of the actualization of parenting education.

The aim of the discussion of this article is to give a brief overview of the actualization parenting education to encourage the optimization of non-formal education. Furthermore, the method used in this paper is a conceptual analysis which is supported by the limited observations and interviews.

## **METHOD**

Discussion method in this paper is using conceptual analysis. Furthermore, the methods of preparation for the actualization of parenting education by planning, organizing, implementation, and evaluation. The planning step describes the determination of the theme, determination of participants, determination methods, and determination of the facilitator; the organizing step includes the determination of the responsible and implementing activities; the implementation step includes pretest, exposure of the material, discussion, and closing and ending with post-test; the evaluation step includes an assessment of the planning and assessment of the implementation and evaluation of the attitude of the participants.

## DISCUSSION

Parenting education is carried out in the family by utilizing available resources within the family and the environment in the form of self-learning activities. Parenting, as a continuous process of interaction between parents and children, includes some activities such as nourishing, guiding, and protecting.

Furthermore, the aim of parenting program is to increase the parents' knowledge and skills in carrying out maintenance, upbringing, and education of children inside the family with the basic of good character. Moreover, parenting education is a development for parental proficiency in character education inside the family, prevention the risk of maternal mortality and infant, prevention of negligence and violence of children, and protection for marginalized and neglected children, also education for management family economy.

Parenting in the family is one focus of parenting education. The family, as a natural-social society for children, have an important role in maintaining the continuity of the children's life. The family implied the existence of children and parents, who need each other to live. Parents in a family have a central role to help nurture the growth and the development of the children. There are two main tasks of parenting, which are to develop the potential of the children character and competency. Character is an aspect of personality that shows a sense of responsibility to control impulses and face the challenges. Character implies the positive social responsibility, moral commitment, and self-discipline, which will give internal awareness, mindset and desire of action. Meanwhile, the children competency is related to the specific ability of individuals to accomplish specific tasks and to achieve personal and social purpose.

There are certain principles to encourage a good parenting. Sugito (2008) states that there are some principles of parenting with regard to character development. It includes: (i) the self-example, (ii) the realization of moral values, attitudes democratic, open and honest attitude with the children, and (iii) the ability to live of a child, and (iv) the unity of word and action. The application of these principles will generate confidence and authority of parents to children, that will bring the appreciation of the children to the parents and the appearance of the value of self-discipline from children.

In other way, lack of trust and authority will caused the appreciation value of discipline. Logically, there is no trust and authority will caused the appreciation value of self-discipline instinctively. Maccoby (1980: 16) argues that there are two main dimensions of parenting behavior, which are responsiveness and demands. Responsiveness describes as the attitude of parents to foster the individuality of the child by giving encouragement and adjusting the needs and demands of children. Responsiveness includes the expression of love and empathy of parents to children, the mutual communication that is necessary in aligning or adjusting in the process of interaction, the close relationship by mutual affection relationship and a desire to maintain closeness. The demands describes as the action to integrate children of parents in the family and



community through behaves like grow up, supervision, discipline, and a confrontation with the children. The application of these dimension methods produce different pattern. High responsiveness and high demands behavior will produce an authoritative parenting style. High responsiveness and low demand will produce permissive parenting style. Low responsiveness and high demand will produce authoritarian parenting style. Low responsiveness and low demand will produce indifference parenting style. Parenting has an influence on children's development. (Maccoby 1980: 371-375). The results from Maccoby shows an information of the effect of parenting on children's development. The variables studied is the development of self control, approach - avoidance tendencies, self-reliance, subjective mood, and peer affiliation of the parents.

In his study, Maccoby classified the children into three categories, which is: (a) competent group; which consists of children that are high in happiness, confidence, self-control, tend to be calm in the face of problems, (b) Attractive group, which illustrates the authoritarian parenting parents tend to form, to control themselves, composed of children who are having relationships with peers, less happy, tend to be careless in dealing with problems. (c) immature group, which consists of children who have self-control and low self-esteem and lack of calm in dealing with problems. The groups are then tested with each of the four dimensions of parenting behaviors that are believed to have an influence on children's development. The results showed that children who are competent, have parents who tend to apply implementing parenting with well self-control. Parents demanded responsibility and behave independently. Parents give explanations, discussion, and emotional support in better way rather than with the attractive and immature children.

Braumrid in Sugito (2008: 18) classified parenting style into three (Authoritarian - Authoritative – Permissive) and evaluate the attitudes and behavior of children using absolute rigid standards. Parents' emphases on obedience, respect, authority, tradition, and maintaining order and less establish verbal communication. More extremethat the parents refused the presence of children for various reasons. Parents with authoritarian parenting style tend to produce children who are less independent and less social responsibility. Parents with authoritative parenting style tend to direct the children into rational action-oriented or deed, encourage oral communication, to give an explanation on the wishes and demands are given to children, but also use the power if necessary. The parents expect children to adjust to the expectations of parents, but also to encourage children to be independent, flexible set standards of behavior. This parenting style resulted the development of children who tend to have the independence and high responsibility. Parents with permissive parenting style showed that parents tend to accept and have a positive attitude towards the wishes, attitudes and behavior of children, little use of punishment, not demanding children involved in chores and responsibilities. Parents often let children regulate their own behavior, to avoid control and rational use in achieving a goal. This parenting style causes independence behaviour on children so that the children tend to have less social responsibility. Parenting behavior and its influence on the development of children caused by

parenting beliefs and attitudes that parents have. Beliefs and attitudes as a guidance for parents with children. The process of interaction is the mediator of the influence of faith in the children development. Many parents alleged to have had a director and mediator to encourage the development of children through the establishment of experience through informal education. At this model of education the parents learn parenting through culture that surrounded him, including how values, norms and any other behaviour. This process takes place in a sustainable manner without critical thinking as if it is natural. This parenting conditions of parenting acquisition tends to encourage unoptimal development of children, so they tend to be insane by having characters that naive or mystical. This theory delivered us to reflect what had happening to us as educators and future educators of children. We all certainly hop to give a strong, solid, faithful and cautious character of children. Children will be children tehir potential. Developing the potential of the children is a life choice for every parents. A lot of sources would improve the provision of the ability to become parents in parenting that affect the independence of children who have a high social responsibility. The real problem relies on the desire and concern to enrich themselves with the scientific practical parenting can be applied to the care of children in the family, as part of the responsibility of education.

The methods of preparation for the actualization of parenting education by planning, organizing, implementation, and evaluation. The planning step describes the determination of the theme, determination of participants, determination methods, and determination of the facilitator; the organizing step includes the determination of the responsible and implementing activities; the implementation step includes pretest, exposure of the material, discussion, and closing and ending with post-test; the evaluation step includes an assessment of the planning and assessment of the implementation and evaluation of the attitude of the participants.

## CONCLUSION

Based on the discussion, it can be concluded that education is very important parenting implemented in order to support non-formal education. Furthermore, parenting education can be presented by planning, organizing, implementation, and evaluation.

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# Environmental Approach with Science Kit Seqip to Enhancing Students' Scientific Process Skills, Learning Motivation, and Cognitive Learning Outcomes

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## ABSTRACT

This classroom action research was motivated by the students' low scientific process skills, learning motivation, and cognitive learning outcomes in natural science. One of the reasons is the lack of teachers' ability in choosing appropriate learning approach and using of Kit or learning science equipments in natural science learning. Thus, the implementation of Environmental approach with science Kit Seqip to students of class V at SD Negeri 13 Salak Sawahlunto city is one of the ways to solve this problem. The objective of this research is to describe the improvement of the students' scientific process skills, learning motivation and cognitive learning outcomes in natural science at class V at SDN 13 Salak Sawahlunto by using Environmental approach with science Kit Seqip. The instruments of this research were the observation sheets of students' scientific process skills and teachers' activities, the test sheets of students' cognitive learning outcomes, and the questionnaire sheets of student' learning motivation. The results showed that there was a significant improvement of students' scientific process skills, cognitive learning outcomes and learning motivation in natural science class V by using Environmental approach with science Kit Seqip from the first cycle to the second cycle. words.

**Key Words:** *Environmental Approach, Science Kit Seqip, Scientific Process Skills, Cognitive Learning Outcomes, Learning Motivation*

## 1. Introduction

Education extremely plays important roles in building capacity and improving the quality of generation of our nation. Thus, our government formulates the regulation regarded to national education as an effort to improve this nation's human resources. The published regulation is named as The Regulation of National Education System No. 20 Year 2013 [1] which clearly states the objections of education. It is obviously mentioned that every child in Indonesia has their right to access good quality education that they may develop their potentials toward a better progress. Education can be defined as a process of changing learners' behavior and attitude to become independent human beings and part of a community who can adapt with their environment. Qualified education will involve children to actively learn from any resources. Teachers are functioned to facilitate learners in teaching process that they possess good learning outcomes and life skills needed by the students in their life settings. The children's potentials, skills and creativity can be well-developed when teachers realize that using varied teaching approach may motivate learners to study. Learning outcomes will be obviously improved when contextual teaching and learning process is conducted and the availability of teaching media is guaranteed.

Natural Science belongs to a compulsory subject taught in Elementary School aimed at developing students' potentials that students might be motivated, active, and joyous in maximally obtained needed skills and learning outcomes. Natural science is related to finding and understanding the surrounding scientifically and systematically through observations. This subject is not merely about mastering factual knowledge, concepts, or principles but also finding process that it will develop learners' scientific concepts, skills and attitude. Further, this subject is expected to become a vehicle for the students to learn themselves and their physical surroundings. It is also objected that learners' are able to implement their knowledge in their real life.

Learning process is emphasized on giving direct experiences that the expected competencies can be developed. There are some objectives of subject of natural science in elementary schools determined by National Education Assurance Board in KTSP [2]. It is to develop learners' knowledge and understanding of scientific concepts which are beneficial and applicable in daily life basis. Moreover, it is expected that learners' curiosity, positive attitude and awareness are elevated that they understand that science is mutually related to learners' environment, technology, and community. It is objected that learners' are able to expand their scientific skills to study their physical surroundings, to solve scientific problems and to find the solution of problems. This subject is targeted to improve students' awareness and roles in preserving their environment and overall nature and its regularity as one of God's creation. Last, but not the least, it is expected that learners will possess the knowledge, concepts and skills of Natural Science as one of the basis for their advanced level of education (SMP/ MTs).

To achieve the objectives of the subject, it is highly recommended that teachers should pay a massive attention to appropriate approaches and learning strategies, learning environment, learning medium and infrastructure and to recognize learners' intellectual, psychological and biological development that must support teaching and learning processes. Moreover, it is expected that teachers are able to motivate students that they can be very active and enjoy their learning process that their potentials can be optimally developed.

When the real condition of teaching and learning process of the subject is observed, it can be admitted that the learning outcomes does not achieve the prior stated objectives. Teachers skills and knowledge still does not meet the expectation that students cannot complete the learning objectives stated in learning instruction. Pursuant to observation conducted in grade V of SD Negeri 13 Salak Sawahlunto, the implemented approach is regarded conventional. Teaching learning process is centralized by the teachers. Students are passively listening to the teacher, taking their notes and waiting for teachers' further instruction. Teachers rarely provide an opportunity for the students to do learning activity independently that the process becomes monotonous. The lack of teachers' control makes students in chaos that some of them start playing or bothering their other classmates. Monotonous learning process is the result of teachers who keeps asking students to read the textbook without giving further explanation that students have lack of understanding of the concepts of what they are learning. Another issue is that the teachers mostly do not make use of teaching and learning kit or media. There are some reasons why this happens; teachers' lack of understanding and skills in using the kits and teachers' reluctance to train themselves in using the media. Another reason is that teachers feel complicated in using the kits in their teaching and learning process. Further, teachers' anxiety to benefit the kits becomes another reason. They are mostly afraid that the students will broke the kits while students are not able to replace them due to the kits' high costs. Teachers rarely provide the opportunity to the students to questions and to conduct a research or observation of scientific phenomena through experiments and report writing. As a matter of fact research activities conducted by the students are extremely vital in the subject to train learners' scientific process skills. It can be concluded that the existed teaching and

learning process has not yet made the learners active, motivated, challenged, enjoyable and meaningful for the students.

Pursuant to an initial observation, it is found that students' motivation in learning natural science is low. It is showed that some of the students are reluctant to learn; they do not take into an account when they are assigned to do the tasks, they feel shy to ask the teachers some questions when they are confused, learners' are afraid that their friends will laugh and bully them. Learners' capacity in conducting the observation, writing the report of the findings of their research or observation, and conducting the experiment is regarded low. All of these obviously affect the learners' scientific process skills and learning outcomes. This can be observed from the result of their third daily exams that of 26 students, only 15 (57,69%) whose grade above the standard while other 11 students are below the minimum standard score determined by SD Negeri 13 Salak Sawahlunto. The minimum standard score in SD Negeri 13 Sawahlunto for the subject of natural science is 75.

Based on the observation it can be concluded that learners' low motivation and learning outcome in subject of natural science might be caused by the lack of optimality of learners scientific process skills. The teachers should stimulate the students to actively use their scientific process skills in learning process through making use of the kits or media in their science class. One of the approaches that might improve learners' scientific process skills and elevate their motivation and understanding of scientific concepts and principles is Environmental approach through Science Kit Seqip. This approach is believed to be motivating and enjoyable that all concepts and materials will be saved in learners' long term memory or in other words, the learners will always remember the concept taught by the teachers through the use of science Kit Seqip. Environmental approach belongs to an approach that is conducted outside the classroom that it will energize learners' motivation in learning. Learners' interest is usually determined by learning environment factors. This approach is expected to reduce students' boredom of learning their classroom. This will be a factor that might influence learners' learning outcome which has been determined in the objectives of teaching.

Murni [3] states that "Environment plays important roles in constructing learners' concept. It stimulates learners' respond. Learners' skills are developed through their interaction with the surrounding." Further, Murni [3] says that the environment will presents learners with concrete situation and will improve learners' appreciation toward scientific concept and their environment.

The Ministry of National Education (in Uno and Mohammad [4] proposes that " Learning through the environment will enable learners to find out the meaningful correlation between abstract notions and practical concept in real life context. The concept will be understood through findings, utility and correlation process." Husamah [5] also states that there some steps implemented in making use the environment as learning sources and media, namely: (1) determining the object, (2) conducting the observation, (3) inquiry, (4) classifying the result of the observation, (5) composing the report, (6) presenting the findings , (7) reflecting, (8) evaluating.

Science Kit Seqip is making used that the teaching and learning process through environmental approach enable to motivate learners that they actively use their scientific process skills in conducting an experiments and observation. Kit of Natural Science is a box contained some tools to help learners to learn science. A set of the kits will be used continuously. The kits is designed and similarly manufactured like experiment kits in scientific experiment in Natural Science subject. Science Kit Seqip relates to scientific kits designed and produced as the result of bilateral cooperation between both governments Indonesia and German. The project is aimed at improving the outcome quality of natural science subject matter. Scientific process skills are some steps used by scientists in conducting their researches. A scientist should possess some skills that enable him/her to

conduct a research namely: observation, measurement, questions, making a hypothesis, classification, guessing, presentation, experiment, etc.

Related to effort of the development of learners' potentials, the study of the implementation of Environmental approach by using Science Kit Seqip to improve learners' scientific process skills, motivation and cognitive learning outcomes on grade V is relevant and crucial. An action research is conducted to find out whether and how Environmental approach by using science Kit Seqip enable to improve learners' scientific process skills, motivation and cognitive learning outcome on grade V in SDN 13 Salak Sawah Lunto. The research is limited on learners' cognitive learning outcomes in knowledge and understanding levels, learners' motivation, reward in learning and the availability of conducive learning environment and learners' scientific process skills obtained when they are conducting an observation, questioning, experimenting, and presenting their findings (communicating) in the subject of natural science by using Environmental approach in grade V.

## 2. Research Method

The method of the study is class action research of two cycles in which each cycle consists of some steps, namely planning, action, observation and reflection. The location of the research is SDN 13 Salak Sawahlunto West Sumatera. Subject of the research is 26 learners of grade V. Of 26 learners, thirteen are girls and the rests are boys. The research was conducting within six meetings collaboratively in Jnauary 2014. The resources of the data are teachers and students which directly involved in teaching and learning process. Data of the research was obtained through the observation of Natural Science teaching and learning process by using Environmental approach though the use of science Kit Seqip, data of observation result of learners' scientific process skills, learners' cognitive learning outcomes and students' learning motivation. The data was collected through observation, test and questionnaire. The data was analyzed through qualitative and quantitative models.

The procedure of the action research is described as the followings. In Planning steps, discussing with the teachers and principle of the school regarding to the time allocation, determining that Forces as materials included in the research, composing a lesson plan, preparing the science Kit Seqip, teaching materials and media (concept mapping related to Forces), teaching practicing by using Environmental approach, preparing test cycles and explaining the use of observation instrument and questionnaire related to students' learning motivation. The researcher explained the use of the observation instrument to the teachers and the observer. He and the observer were also in charged to arrange the learners' name, making group work and tasks, writing learners' working sheets, composing observation sheets, creating a test and the key answer of the test ad well as composing a questionnaire. Moreover, the researcher also prepared the camera to document the process of the research and explaining the use of observation instruments to the teacher and observer.

The conducting of actions relates to the implementation of the designed lesson plan that use Environmental approach through using science Kit Seqip which was started by motivating and appreciating the learners that they were interested in learning, then stimulating learners' background knowledge by presenting the concept map related to the targeted materials at the beginning of the class activities. Teachers related the teaching and learning materials to learners' experiences or their real life with an interesting and enjoyable ways as an initial activity. Teachers requested the learners to observed and research related to the expected materials in the meeting by using their working sheets and science Kit Seqip which were provided collectively. Teachers actively helped the learners to find out and obtain the knowledge as well as to use scientific process skills through various ways. After all groups finished their work in conducting the observation, the teachers asked them to discuss and to clarify their findings. They were also asked to write their observation report and present their

work in front of the class. Other groups actively responded and questioned the presenter. The teacher will conclude the teaching materials and gave the reinforcement for what they had learned. Reward was addressed to the group that had good achievement. During the teaching and learning process, the teachers facilitated, directed, and guided the students. Learners' cognitive learning outcomes were obtained through test and answering the questionnaire by the end of each cycles.

Observation was conducted by two observers who checked the learners' scientific process skills and the implementation of Environmental approach in teaching and learning process of natural science subject matter. The implementation of the approach was recorded in an observation sheets by the observers. The observation was intensively, objectively and systematically conducted. In this observation step, the researcher and the observers tried to identify and note whether the action and result of changing activity occurred on the teachers and the learners during the teaching and learning process using environment approach by making use of science Kit Seqip was improving or not. Regarding to learners' scientific process skills, the observers checked the learners ability in conducting the observation, questioning, experimenting, and presenting their findings. The observation was continuously conducted started from Cycle I to Cycle II. The observation done in Cycle I could influence the arrangement of the action in the following Cycle. The result of the observation was discussed with the observer and reflection was conducted for further planning. By the end of the cycle, a test was conducted to find out the learning cognitive learning outcome on knowledge and understanding levels.

Reflection was conducted when each action was done. In this step, the researcher and the observer discussed the further action that would be implemented. Analysis of teachers' activities, learners' scientific process skills, learners' cognitive learning outcome as well as learners' motivation after the action was implemented were those which were discussed by both the researcher and the observers. Moreover, their discussion and explanation was also related to the differences between the plans and the implementation of the research that had been conducted as well as conclusion of the obtained data. The result of the reflection was benefited as an input for the following action. Reflection was conducted by the end of the teaching process. Reflection was aimed at to check to what extent the expected indicator was fulfilled. When the succeeding indicators have been achieved, the cycle was limited to the Cycle I. If the indicators have not been achieved, the action was needed in the next cycles and so on. In discussion parts, the researcher would describe the weaknesses found in teaching and learning process during the first cycle and efforts that should be done to overcome the weaknesses in the next cycle. The discussion was based on the result of observation and the evaluation.

The data of learners' test result was analyzed qualitatively by counting the means of the class and the percentage of the students who already achieved the expected minimum score, namely 80% of the students obtained 75 or more out of 100. The data related to teachers observation, learners' scientific process skills and learners' motivation were analyzed by counting the score, means and percentage of the indicators out of the overall indicators which were observed or the number of students with succeeding indicator was 75%.

### **3. Findings and Discussion**

#### **A. Cycle I**

In cycle I, the learning materials were about the Force. The materials delivered in the first and second meeting of cycle I were Magnetic Force. They were taught to the students by using Environmental approach assisted with Science Kit Seqip. The time allocated for each



meeting was 2 x 35 minutes. The results of the observation on the treatment given were as follows.

### 1. The Result of the Observation on the Students' Scientific Process Skills

The result of the observation in Cycle I toward the development of learners' scientific process skills during the teaching and learning process through Environmental Approach by using science Kit Seqip is described in Table 1.

**Table 1.** The Students' Scientific Process Skills in Cycle I

No	Indicators of Scientific Process Skills	Meeting		Average
		1	2	
1	Observing	47.83%	50.00%	48.91%
2	Asking	43.48%	54.55%	49.01%
3	Doing/Experimenting	56.52%	72.33%	64.62%
4	Communicating	39.13%	59.09%	49.11%

The Table 1 indicates that:

1. The students' scientific process skills in doing observation increased slightly from cycle 1 to cycle 2. The percentage of the students who were able to do this activity was 48.91% or 11 students in the second meeting. It's showing that almost half of the students were able to do observation in groups based on the tasks given. However, there were still many students who were not able to do observation (on observation and inquisition phase), they instead looked confusedly at the activities done by their friends. This was caused by the students who did not understand about what should be observed and they were not accustomed to Natural Science learning process of Environmental approach assisted with science Kit Seqip. In addition, the students had lack of understanding on the assignments contained in the Student Worksheet. The teacher also gave less guidance and motivation to the students to do observation on experimenting Magnetic Force and Magnets Properties required in the Student Worksheet.
2. The development of the students' scientific process skills in asking questions in the two meetings was not yet satisfactory (this could be seen in initial activity, core activity, and end activity). The percentage of the students' who were able to do this activity was 54.55% or 12 students in the second meeting. In the first cycle, the students had been willing to ask questions during the learning process about Magnetic Force and Magnets Properties, and the application of magnet in daily life. Some students, however, were still ashamed, unwilling and did not understand about the task and the materials given. In this cycle, the teacher seemed unable to stimulate the students to ask questions about the materials taught and the activities in the Student Worksheet about Magnet and it's properties. The teacher gave less motivation to the students to ask questions about the activities they did not understand.
3. The improvement of the students' scientific process skills in the indicators of practicing or doing experiment in the second meeting was also still low. The number of the students who were able to do this activity was 64.62% or 16 students in the second meeting. The students' lack of understanding on the instructions given in the Student Worksheet was assumed as the cause of the problem. Many of the students also felt afraid of doing experiment of magnetic force and properties. Furthermore, some of them used the learning props as toys. Meanwhile, the teacher also given less guidance and motivation to the students doing the experiment for the learning process.

4. The students' scientific process skills in communicating the learning activities in cycle I was also still low. This result showed that many students did not understand about the learning materials and the activities being done. The number of the students who were able to do this activity was 49.11% or 13 students in the second meeting.. This number suggests that there were only a half of the students who were able to deliver or write the result of their observation on the Student Worksheet, and there was also similar number of students who were able to draw conclusion. A large number of students were also unable to see the application of magnet in their daily life.

In cycle I, it seemed that many students were not able to perform scientific process skills as the learning approach applied by the teacher was different from the previous ones. They were not accustomed to such approach and did not understand the meaning of concept map posted by the teacher. The students were also not accustomed to their new teacher. They felt also not yet comfortable learning outside of their class.

## 2. The Students' Cognitive Learning Outcome

The result of the test in cycle I at third meeting revealed about the students' learning outcome, the number of the students who were able to achieve the Minimum Standard Score, the number of the students who were not able to achieve the Minimum Standard Score, the students' average score and the percentage students' learning mastery classically. The results were presented in Table 2.

**Table 2.** The Students' Cognitive Learning Outcome in Cycle I

No	Description	Total
1	The number of students who were able to achieve the score above the Minimum Standard Score	16
2	The number of students who were not able to achieve the score above the Minimum Standard Score	8
3	The students' average score	74.37
4	The percentage of the students who were able to achieve the score above the Minimum Standard Score	66.67%
5	Target	80%

From Table 2, it was revealed that the students' cognitive learning outcome in cycle I was still low, and there were many students who were not able to achieve the score above the Minimum Standard Score. The number of the students who got score above the Minimum Standard Score was 16 indicating that the target of 80% students achieving the standard score was not yet achieved. This problem was triggered by the students who were not familiar to the learning process of Environmental approach with Science Kit Seqip. The teacher was less skillful in explaining the learning materials by making use of clues contained in concept mapping so that the students could not memorize the materials longer. In the initial activity, the teacher rarely correlated the learning materials to the students' real experience which was concrete and easy to be understood. In the end activity, the teacher did not yet verify thoroughly whether the students had understood the materials or not. The students' scientific process skills which were low in asking questions, doing observation and communicating the learning materials had made the students got low mastery/understanding on the materials being learned. Many of them were not able to answer questions in the test of the cycle I. The students' low learning outcome was also caused by the teacher who was not good at managing

the time and class, stimulating the students to actively use their scientific process skills in the learning process. In addition, the teacher was not fully proficient in applying the steps suggested in Environmental approach with Science Kit Seqip.

### 3. Students' Learning Motivation

Based on the result of questionnaire data analysis in cycle I, it was concluded that the students' motivation in learning Natural Science with Environmental approach with Science Kit Seqip was still low in which their average score was 73.55%. The use of Environmental approach assisted with Natural Science props and reward that was given to the most active group and students at the end of learning were not yet able to increase the students' learning motivation. Shortly, in cycle I, the students had less concern and lack of interest in learning.

After the action stage and observation were done, reflection activity with the teacher and observers was carried out to discuss the results of the observation. The results of the observation revealed that the teacher was still awkward/less proficient in conducting the steps suggested in Environmental approach with Science Kit Seqip. The teacher's performance should be more fun so that the students felt eager to learn. The teacher was not yet able to raise the students' learning motivation to make them more active in using their scientific process skill in the learning process. The teacher needed to improve her ways of teaching in initial activity, in core activity, in end activity. In order to increase the students' understanding and their learning motivation, the teacher should explain the lesson more clearly by using concept map and giving concrete examples to the students. The teacher was also required to stimulate the students to work actively by making use of Natural Science props provided for groups, and challenge them to ask questions. The teacher could give some helps especially to those who were shy and quiet. The teacher was also expected to guide the students in doing observation through the Student Worksheet which had been revised (accompanied by better pictures and instructions). In the next cycle, the teacher was expected to be more skillful/effective in making use of the time provided and to be able to explain the lesson more clearly by using concept mapping pictures. She was also demanded to give reinforcement in verification stage. By doing such improvement, it was expected that there would be many students who were able to answer the questions in the test. The teacher was demanded to guide her students to think about the application of the learning materials in their daily life. To the two observers, it was expected to do observation well and carefully during the learning process.

#### B. Cycle II

Based on the reflection result in cycle I, a better planning was remade regarding the way the teacher taught by using the Environmental approach with the Natural Science props and elected the environment where the students will learn. The teacher was asked to do better classroom management and instructional time. She was also asked to be more delighted by building positive relationships with her students in a way to greet and call the name of each student in the beginning of the class to make them feel safe physically, mentally, and emotionally, and feel that they were parts of the whole learning process. She was also asked giving more motivation to students at the beginning of learning. The improvement was also made by making concept map pictures with symbols, colors, and attractive words in order to create meanings for the students and help the teacher in explaining the concept map to enable students to understand more easily and remember the material that they studied longer. A better planning on how the teacher explained the material was also done in the initial and end activity by connecting the material to be taught with real-life experiences. It was helpful because the brain learned best from concrete experiences. The teacher guided and motivated

the students better in order to improve their will to observe, ask during the core activity as well as when they performed inquiry activities. The teacher also intensively guided and facilitated the students who wanted to try and to be able to communicate what they had learned. After discussing with the teacher, it was found that other aspect that needed to be improved in cycle II was the worksheets. It was hoped that the worksheets would help the students to understand easily and be active in doing the observation. The way the teacher provided reinforcement to the students towards learning in the end activity was also improved. She checked whether the students were already familiar with the material they had learned or not, so that it was expected that a lot of them obtained satisfactory learning achievement in the final test. She also provided good and exciting rewards for students who got good grades.

In the implementation of the natural science learning activities in cycle II, the material being taught was the Gravitation Force in the first meeting and the Friction Forces in the second meeting by using the Environmental approach with Science Kit Seqip. The observation was carried out by two observers using observation sheets. The result of the observation showed that the teacher was successful in motivating and building a positive relationship with the students, in implementing the Environmental approach, in presenting the subject matter by using the concept map and giving concrete examples. She was also successful in motivating and guiding the students to observe the activities and things learned by using available worksheets and Natural Science props as well as guiding them to ask questions in a group and communicate about their activities in the worksheets. She also succeeded in motivating and guiding groups of students in making observations and asking them to consider the applications of Friction Forces in daily life by giving few clues. In addition, she checked her students' understanding about the material that had been taught and reminded them to read more material about Gravitation Force and Friction Forces at home at the end of the second meeting. Thus, the students would be able to pass the cycle II's final test. She also gave rewards to the active group and students who got good marks in the test. The full descriptions of students' increased activities in cycle II were as follows:

### 1. The Result of the Observation on the Students' Scientific Process Skills

Based on the data obtained, it could be observed that the development of students' scientific process skills in cycle II was as follows:

**Table 3.** The Students' Scientific Process Skills in Cycle II

No	Indicators of Scientific Process Skills	Meeting		Average
		1	2	
1	Observing	81.82%	86.95%	84.38%
2	Asking	68.18%	82.61%	75.40%
3	Doing/Experimenting	81.82%	82.61%	82.21%
4	Communicating	72.73%	78.26%	75.49%

The data in Table 3 could be interpreted as follows:

1. There were 84.38% or 20 students who had been actively involved in doing observation at the end of the second meeting of Cycle II. They were able to describe the forms and the functions of gravitation force and friction forces. The students got much guidance from the teacher to actively observe experiment and investigation activities by using balls, papers, rocks, plasticine, steels, plastic base, wooden beams, plastic wheels and as it was required in the Student Worksheet. The students were motivated, pleased and highly interested to do observation during the learning process outside the class.
2. There were 19 students or 75.40% of them who were able to perform scientific process skills of asking questions in which they could ask questions either about gravitation force

and friction forces or about the materials they did not understand in initial, core, and end activities. There were also some students who asked questions to other groups during elaboration stage about the application of gravitation and friction forces. The teacher also had been proficient in motivating and stimulating the students to ask questions by using questioning technique.

3. The students' scientific process skills in doing experiment also increased at the end of the second meeting of cycle II in which 19 students were motivating and willing to do experiment by using balls, papers, rocks, plasticine, steels, plastic base, wooden beams, plastic wheels and doing experiment about the use of gravitation and friction forces in daily life. The students were guided by the teachers and they were able to apply gravitation and friction forces during the learning process so that they could answers very well the questions contained in the Student Worksheet.
4. The scientific process skills of communicating was done by 18 students at the end of the cycle II. It could be done actively by the students because they were guided by their teacher so that they were able to communicate the results of their investigations on the applications of the gravitation and friction forces on the Student Worksheet and presented the result of their observations in front of the class. This skill needed to be taught to the students so that they could think the examples of the gravitation and friction forces applications in everyday life. The teacher also helped the students to draw conclusion appropriately. In the future, students will need to be left alone to think about solving the problem or answering the question asked in the learning activities.

From these results, it can be concluded that all of the scientific process skills of students studied in this research had corresponded to the indicators set out. It could be concluded that the use of the Environmental approach assisted with Natural Science props could increase the fifth grade students' scientific process skills.

## **2. The Students' Cognitive Learning Outcome**

Cycle II test was conducted after second meeting. The students' learning outcome was shown in Table 4. From the table, it could be seen that the students who passed were 83.33%, or 20 people. The percentage exceeded the specified passed score indicators. Learning science by using the Environmental approach and the Science Kit Seqip successfully improved the students' natural science learning outcome. This could not be separated from the teacher's corrective action efforts taken on the cycle II so that the students became more motivated and active in using their scientific process skills and understood about the lessons more easily. The improvement of the students' scientific process skills and learning motivations in the cycle II helped them to get better learning outcome. It could also not be separated from the number of students who motivated and got involved in the spirit of trying to use the Science Kit Seqip in the learning activities of cycle II, who were good at observing the activities performed, and who were active in asking questions. They could easily answer the cycle II's final test because they had observed well, had understood the material being taught, and they were motivated and pleased with the way their teacher taught also with the rewards that they were received from the teacher so that they became eager to follow the lessons. The test's questions were related to what they did in the activities of the first and second meeting in cycle II.

**Table 4.** The Students' Cognitive Learning Outcome in Cycle II

No	Description	Total
1	The number of students who were able to achieve the score above the Minimum Standard Score	20
2	The number of students who were not able to achieve the score above the Minimum Standard Score	4
3	The students' average score	84
4	The percentage of the students who were able to achieve the score above the Minimum Standard Score	83.33%
5	Target	80%

### 3. Students' Learning Motivation

Based on the analysis of the questionnaires filled out by the students at the end of cycle II, it could be concluded that the use of Environmental approach with the Science Kit Seqip successfully increased the students' motivation in learning science with the percentage of 83.33%. The teacher implemented the Environmental approach with the Science kit Seqip well so that the students became motivated and excited in learning, became active in using scientific process skills, and understood the material well. As a result, the questionnaires' average score achieved the target score (75%). The students' big attention, motivation, interest, and pleasure in learning in cycle II proved that the Environmental approach succeeded in catching their motivation since their teacher improved her teaching style compared to that in cycle I.

Reflection was done after the observation activities. From the results obtained in cycle II and a discussion with the teacher, it was found that it was not necessary to continue the actions in the next cycle because the indicator of success for the scientific process skills, cognitive learning outcomes and students' motivation had been reached.

### 4. Conclusion

Based on the findings and the discussions of the research, it was revealed that the Environmental approach with the Science Kit Seqip was successfully implemented in the fifth grade of SDN 13 Salak Sawahlunto through which it could improve the students' scientific process skills, their cognitive learning achievement, and their learning motivation in Natural Science. Based on the results of the research, it was concluded that: (1) the fifth grade students' scientific process skills in doing observation increased from 48.91% in cycle I to 84.38% in cycle II, (2) the fifth grade students' scientific process skills in asking questions increased from 49.01% in cycle I to 75.40% in cycle II, (3) the fifth grade students' scientific process skills in doing experiment increased from 64.62% in cycle I to 82.21% in cycle II, (4) the fifth grade students' scientific process skills in communicating increased from 49.11% in cycle I to 75.49% in cycle II, (5) the fifth grade students' cognitive learning achievement increased from 66.67% in cycle I to 83.33% in cycle II, and (6) the fifth grade students' learning motivation increased from 73.55% in cycle I to 81.80% in cycle II.

### 5 Acknowledgement

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## IMPROVING SOFT SKILLS BY APPLYING MODEL CENTERED LEARNING THE STUDENTS FOR STUDENTS TO SMK KARTIKA 1 SURABAYA PROGRAM ACCOUNTING EXPERTISE

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### ABSTRACT

The era of globalization is a challenge for education in producing quality graduates indicated by not only the hard skills but also soft skills are good. Quality of soft skills such as the skills to make the main requirement to be accepted in the world of work. Once the importance of soft skills education for quality graduates who are ready to work, then the efforts made by educators in developing appropriate learning models. The purpose of this study was to determine: (1) the application of the model-based learning student centered learning in improving the soft skills of students of SMK Kartika 1 Surabaya, (2) the important role of soft skills education for students of SMK Kartika 1 Surabaya. The method in this research is action research. Data was collected with achievement test and questionnaire. The conclusion of the study provide important meaning teachers provide learning models centered to student in accounting subjects in order to have the skills in preparation for working life in the future and be able to compete with the Asean Economic Community (AEC).

Key Words: Words: Soft Skill Education , Learning , Student Centered Learning

### I. INTRODUCTION

#### A. Background Research

The era of globalization presented a challenge to human life to take hold of the best decisions in life. Enforcement of the Asean Economic Community (AEC) into a new round of the commencement of the relationship between ASEAN as a single market and single production base covering free trade area, the removal of trade tariffs among ASEAN countries, the labor market and capital, as well as provide facilities in inflows out procedures between countries ASEAN. It is a challenge for Indonesia to create quality human. Related to that, to make the necessary quality human quality education anyway. Many of the challenges to creating quality human in this case is a professional educator. So it is necessary for efforts to be made in encouraging the improvement of the quality of education, especially teachers factors and other factors that educational problems.

No doubt that the challenge for education is to produce output / quality of graduates that could be accepted in the world of work in accordance with the needs of the working world. The graduates are also faced with the condition of the Asean Economic Community when looking for a job that will not only compete with other graduates from within the country but also other nationalities who wish to work in Indonesia. Given these conditions, encouraging the academic community, including institutions Vocational High School (SMK) improve the hard skills and soft skills of their students. Hard Skill is the ability of academic /technical, a mastery of science, technology, and technical skills related to the field of science. While Soft skills are non technical capabilities that are not visible but very necessary. Soft skills according Berthhall (Diknas, 2008)



is the behavior of personal and interpersonal skills to develop and maximize the performance of the human (through training, development of teamwork, initiative, other decision-making. Skills This software is a basic capital learners to thrive optimally fit each individual. Broadly speaking the soft skills can be classified into two categories: intrapersonal and interpersonal skills. intrapersonal skills include: self-awareness (self confident, self-assessment, trait and preference, emotional awareness) and self skill (improvement , self-control, trust, worthiness, time / source management, proactivity, conscience). While interpersonal skills include social awareness (political awareness, developing others, leveraging 6 diversity, service orientation, empathy and social skills (leadership, influence, communication, conflict management, cooperation, teamwork, synergy) Soft skills are skills of a person in touch with other people (including himself). Attributes soft skills, thereby covering shared values, motivations, behaviors, habits, character and attitude. Attribute these soft skills possessed by each person at different levels, are influenced by the habits of thinking, say, act and behave.

Based on the facts on the ground, many examples prove that people who have brain intelligence alone, and has a high degree, not necessarily successful in the working world berkipral. Often that lower educated people a lot of success. Along with the Asean Economic Community is, precisely the role of hard skills and soft skills are preferred so that it can compete with the current environment. Learning model given by the teacher was instrumental in increasing the hard skills and soft skills of students. Model interesting learning is one of the factors that determine the success of the learning process. Models to student-centered learning (student centered learning) is the model suggested in the curriculum in 2013 in order to improve the quality of the students are not only hard skills but also soft skills of the students. The teaching model to student-centered learning model include problem-based learning (PBL), Discovery Learning, Project Based Learning, and various other types of cooperative learning. With the learning model centered on the students, the students are invited to learn actively, independently, creatively and critically berikir. Teacher directs students to improve all the abilities and skills that exist on students, explore ideas, solve problems and the solution of existing problems. In addition, the impact on students is that students can apply the knowledge-knowledge gained in the real world.

In this study, researchers conducted a study in SMK Kartika 1 Surabaya with sample class XII student of Accounting in the material prepared a report on the cost of the product. To increase the hard skills and soft skills of students, teachers apply the model-based learning to students that learning model Problem Based Learning. According to Duch (1995), Problem Based Learning (PBL) is a learning model that challenges students to "learn how to learn", work in groups to find solutions to real-world problems. This problem used to bind the students curiosity in learning in question. Meanwhile, according to Arends (Trianto, 2007), Problem Based Learning (PBL) is a learning approach where students are exposed to the problem of authentic (real) so hopefully they can draw up his own knowledge, to develop high-level skills and inquiry, make students more independent, and increase confidence himself. Sherlita, et al (2012) explains that the learning model used to enhance soft skills is Problem Based Learning (PBL) and Quantum Teaching. There are several studies that model problem based learning can improve students' soft skills. Research results Yulita (2013) that Problem Based Learning has a significant influence on Softskill. The better the model PBL is used it will be able to increase Soft skills for students. Darmawati and Mahadi (2014) explains that there is an increased ability to apply soft skills student with the learning model problem based learning. Based on the above, researchers interested in conducting research in improving the soft skills of

students by applying the learning model based on the student (Student Centered Learning) is a learning model problem based learning. This is done as a detection result of the treatment model of learning as preparation for students not to compete in the future, especially in the face in the face of the Asean Economic Community. Based on this, researchers interested in conducting a study entitled "Improving Soft Skills By Applying Model-Centered Learning The Students For Students To SMK Kartika 1 Surabaya Program Accounting Expertise"

#### B. The Problem Research

The formulation of the problem in this study are as follows:

1. How does the application of the model-based learning student centered learning in improving the soft skills of students of SMK Kartika 1 Surabaya?
2. How important role of soft skills education for students of SMK Kartika 1 Surabaya in the face of the Asean Economic Community?

#### C. The Purposes Reseach

The purpose of this study are as follows:

1. To determine the application-based learning model student centered learning in improving the soft skills of students of SMK Kartika 1 Surabaya.
2. To find out the important role of soft skills education for students of SMK Kartika 1 Surabaya in the face of the Asean Economic Community.

## II. RESEARCH METHODS

The approach in this research is action research. The data source of this research is the primary data, namely: (1). Teachers who perform application-centered learning models to students in this case is a problem based learning model Learning. (2). Students who receive treatment application of learning models are students of class XII program accounting expertise SMK Kartika1 Surabaya on managing learning materials Cost of products totaling 34 students. Secondary data sources are also required in this study were derived from interviews with principals and students as well as the documentation to obtain additional data during the study. Parameters measured include: (1). Creative ability, (2). Analytical ability, (3). Communication skills, (4). Problem solving ability, (5). Management capabilities, (6). Independent capability, and (7). Ability to cooperate. Meanwhile, according to Arikunto (2008) research procedure consists of four main stages in the action research, consists of the preparation phase, the implementation phase of action, the stage of observation/evaluation and reflection phase. The data collection techniques done is (1). observation sheet, interview with the principal, classroom teachers, and students. Observations done using observation sheet to observe the integrative learning process in the classroom, the acquisition of data taken by observation class actions carried out several cycles of learning. In addition, the researchers also tested the validity and reliability of the questionnaire that will be given test item statement application of learning models problem based learning.

To measure mastery criteria residual soft skills are grouped into:

Table 1.1 Criteria Ability of Soft Skills Students

Interval	Category
1-2	Not to have the soft skills.
3-4	have the soft skills.

While soft skills to assess the skills of the students, can be interpreted as follows:

Table 1.2 Criteria skill of Soft Skills Students

Interval	Category
81-100	Very Good
71-80	Good
61-70	Enough
51-60	Less
<51	Very less

(source: Syahza, 2006)

### III. RESULTS AND DISCUSSION

#### 1. Application of Model-Based Learning Student Centered Learning for Vocational Students Skills Program Accounting class XII SMK Kartika 1 Surabaya.

##### a. Learning Implementation Accounting with Model-Based Learning Student Centered Learning

Accounting learning subject Generating Reports Cost of XII class products with the implementation of Problem Based Learning learning model implemented by following five steps PBL by weight or depth of each step tailored to the subjects concerned.

##### 1). Basic Concept

Teachers provide basic concepts, instructions, references, or links and skill required in learning. It aims to make learners more quickly into the atmosphere of learning and getting a 'map' accurate about the direction and purpose of learning. Furthermore, it is necessary to ensure learners acquire primary key learning materials, so there is no possibility overlooked by learners as can happen if students learn independently. The basic concept of matter prepared a report on the cost of the product given in outline form only, so that learners can develop independently in depth.

##### 2). Defining the Problem

In this step the teacher presents a scenario or problems and in groups, the students do various activities. One, brainstorming carried out by means of all the group members express their opinions, ideas, and responses to scenarios prepared a report on the cost of production freely, so it is possible appears a wide variety of alternative opinions. Each group member has an equal right to provide and convey ideas in discussions and document in writing their own opinion in the working paper. In addition, each group had to look for unfamiliar terms in the scenario and try to discuss the purpose and meaning. If there are students who know what it means, immediately explained to friends the other. If there is a part that can not be solved

within the group, written in the problem group. Furthermore, if there is a part that can not be solved within the group, written as an issue in the problem group.

Two, selecting alternatives to choose the opinion that more focus.

Third, determine the problem and do the distribution of tasks within the group to seek references settlement of the issue of the problems to come. Teacher validate the choices taken learners. If the desired goal by Guru has not been touched on by the student, the teacher suggested it to give reasons. At the end of step the students are expected to have a clear picture of what they know, what they do not know, and knowledge of what is required for bridging. To ensure each learner to follow suit, then the definition of the problem is done by following the instructions.

### 3. Self Learning

After finding out his duties, each student find different sources that could clarify the issues that are being investigated. Source is in the form of written articles can be stored in the library, web page, or even an expert in the relevant field. Investigation phase has two main objectives, namely: (1) so that learners seek information and develop an understanding relevant to the problems that have been discussed in class, and (2) information collected for one purpose that is presented in the classroom and that information must be relevant and understood.

Outside the meeting with the teacher, students are free to hold meetings and carry out various activities. During the meeting students will exchange information it has collected and the knowledge they have built. Students also need to organize the information discussed, so that other group members can understand the relevance to the problems faced.

### 4. Exchange Knowledge

After getting the source material for the purposes of compiling reports deepening cost of the product in independent learning step, then at the next meeting to discuss the group's learners to clarify their achievements and formulate solutions to the problems of the group. This knowledge exchange can be done by peserrta students gather appropriate groups. Each group determines chairman discussions and each student present the results of independent learning by integrating independent learning outcomes for the conclusion of the group. The next step results in a plenary presentation (large class) to accommodate input from the plenary, determine the final conclusions and final documentation. To ensure each learner follow this step it is done by following the instructions.

### 5. Assessment

Assessment is done by combining the three aspects of knowledge, skills and attitude. Assessment of the skills can be measured from the mastery of learning aids, either software, hardware, and the ability to design and testing. While mastering soft skills assessment emphasis on that creative, analytical, problem solving komunikasi, management, independent work together, and active.

During the implementation of learning activities with problem based learning model, if the evaluation of the assessment results are still not successful, then proceed to the next cycle with reference to the four stages of action research. Based on the research results, then there are 2 cycles of learning. The results of each soft skill abilities of students learning cycle with the application of Problem Based Learning teaching model looks as follows:

1). The ability of the soft skills of students in cycle 1

Results siswa soft skill abilities at each meeting of cycle 1 can be seen in table 1.3 as follows:

Table 1.3 Ability Soft Skills students at each indicator in preparing the material cost of the product with the application of problem based learning model learning Cycle 1

No.	Indicators	Meeting to			Criteria	Average	Category
		1	2	3			
1.	creative	62,13	63,2	70,34	3-4	65.22	Enough
2.	analytical	65,24	75,72	80,15	3-4	73.70	Good
3.	Communication	69,12	75,18	78,72	3-4	74.34	Good
4.	Problem solving	62,43	70,75	74,15	3-4	69.11	Enough
5.	Management	63,56	80,24	82,15	3-4	75.31	Good
6.	Independent	68,12	74,32	83,15	3-4	75.19	Good
7.	Work Together	70,21	78,4	84,72	3-4	77.77	Good
8.	Active	63,14	75,17	80,72	3-4	73.01	Good
	average each meeting	65.50	74.12	79.26	3-4	72.95	Good

Based on Table 1.3 shows that the ability of the soft skills of students in cycle 1 was obtained on average in two categories: 2 with sufficient category and 5 in both categories. Ranging from meeting to meeting to 1 to 3, increased average. This is caused because the students have high motivation for learning and learning to respond to problem-based learning well. At the first meeting, the average ability of the soft skills of students with enough categories, this is because students have not been accustomed to working on the problems compile reports product cost. The matter set forth in the MFI and the students were asked to resolve the case by conducting an investigation through the study of literature and practical. In cycle 1, it appears that although the results have been good ability of soft skills in the second and third meetings, but the need for improvement of learning in the next cycle. From each of these indicators still need to develop the ability of the soft skills of students so that the ability of the hard skills and soft skills of students can be increased.

2). The ability of the soft skills of students in cycle 2

Results siswa soft skill abilities at each meeting of the second cycle can be seen in table 1.4 as follows:

Table 1.4 Ability Soft Skills students at each indicator in preparing the material cost of the product with the application of problem based learning model learning Cycle 2

No.	Indicators	Meeting to				Criteria	Average	Category
		5	6	7	8			
1.	Creative	70.90	71.20	72.20	78.15	3-4	73.85	Good
2.	Analytical	68.75	77.28	78.25	82.17	3-4	79.23	Good
3.	Communication	75.28	84.15	86.17	88.90	3-4	86.40	Very Good
4.	Problem solving	70.23	72.33	75.84	80.35	3-4	76.17	Good
5.	Management	75.47	85.84	86.14	84.16	3-4	85.38	
6.	Independent	72.65	88.72	90.25	90.92	3-4	89.96	Very Good

7.	Work Together	80.22	85.73	95.14	95.25	3-4	92.04	Very Good
8.	Active	74.22	74.56	76.80	82.15	3-4	77.83	Good
	average each meeting	73.46	79.97	82.59	85.25	3-4	82,61	Very Good

Based on Table 1.4 shows that the ability of the soft skills of students in the second cycle of the average obtained in the two categories with category 4 good and 4 with very good category. Ranging from meeting to meeting to 5 to 8, increased the average. This is caused because besides the students have high motivation for learning and learning to respond to problem based learning well, students have also been familiar with the application of a given model of learning. Students are used to develop ideas, imagination, visualization of the task given. Creative ideas, concepts analytical, communication runs smoothly. Students are not shy to develop and express their ideas with better communication than ever before. In solving the problem, / material cost of the product cases, students' critical thinking independently and discuss and work together with the group. All matter in the MFI solved by the students with an investigation through the study of literature as well as practical without the assistance of the teacher directly, but teachers always facilitate and motivate the students. Teachers observe each of their activities. In cycle 2, the ability to have good soft skills and in accordance with the desired learning objectives. This is consistent with what was said by Herman (2006) that learning Problem Based Learning has several benefits for student learning, that learning is an effective teaching to enhance students' critical thinking skills rather than the usual learning.

When compared with the average of soft skills in cycle 1 and cycle 2 after the application of PBL, which showed an increase from an average of 72.95 into 82.61. This suggests that the learning model student-centered that problem based learning (PBL) is able to improve the soft skills of students in creative ability, analytical, communication, problem solving, management, independent, working and active on the subject matter prepared a report on the cost of the product. The teacher's role in this case is as a guide and facilitator of learning so that students are capable of learning and thinking to solve problems based on their ability and desire to learn.

2. The important role of soft skills education for students of SMK Kartika 1 Surabaya in the face of the Asean Economic Community.

Based on the results of a questionnaire distributed to students and teachers training eye Accounting SMK Kartika 1 Surabaya, the important role of education soft skills are as follows:

- 1) It enhances the values contained in students' soft skills include the ability of creative, analytical, communication, problem solving, management, independent, working and active.
- 2) Education soft skills have an impact on student character change for the better so that the cause of good behavior in work, act and work at the time of his education and useful for the future
- 3) Improving Interpersonal intelligence (interpersonal intelligence) is the ability to understand and be sensitive to the feelings, intentions, motivations, character, and temperament of others.

- 4) Increase the intrapersonal intelligence (intrapersonal intelligence) is the ability to understand ourselves and act adaptively based on knowledge of self. The ability to reflect and balance of self, self-awareness is high, and bold initiatives.
- 5) Provide awareness to students that soft skills are very significant capabilities for continuity of work in the future.
- 6) Increase the confidence of students to compete and survive in the era of the ASEAN Economic Community.

#### IV. CONCLUSION

Based on the results of research and discussion, makadapat concluded three terms as follows:

1. The application of the model to student-centered learning is problem-based learning learning model with 2 cycles, lead to the conclusion that the ability of the soft skills of students of class XI AK 1 produces an average of 72.95 with good category, while the soft skill abilities of students in the second cycle yield an average of 82.61 with very good category This means that the application of student-centered learning model that is problem based learning can improve students' soft skills SMK Kartika 1 Surabaya in preparing the material cost of the product.
2. There are six important role of soft skills education for students of SMK Kartika 1 Surabaya in the face of the Asean Economic Community.

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# DEVELOP LEARNING EQUIPMENT USING CTL (*CONTEXTUAL TEACHING AND LEARNING*) MODEL ASSISTED BY PHET SOFTWARE

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## Abstract

The purpose of this research is to develop learning equipment using CTL (*Contextual Teaching and Learning*) model assisted by PHET software . syllabus, lesson plans, student's worksheet, assessment sheet on component material lesson of passive and active electronic resistors, capacitors, diodes, transistors.

This research wanted to know whether learning achievement and students response using CTL instruction by Simulations Phet with MPL. then researcher conducted researching by combined CTL instruction model with simulations phet method which conceptualize meaningful learning correlated with the daily activities students, while simulations PHET is a simulations training combined with instruction aimed to provoke students activities.

The research was conducted in four stages, the first stage is the preliminary study, the second stage is to design the learning equipment by referring Research and Development (R & D). The research finding results is learning device validation results showed that well-categorized syllabus with reliability coefficient amount 0.862, well-categorized lesson plans with reliability coefficient amount 0.8667, weel-categorized students' worksheet with reliability coefficient amount 0.8947, well-categorized assessment sheet with reliability coefficient amount 0.9524. Classical completeness percentage of cognitive learning product reached 90.625%. In the sign test obtained for Z values is -5480 and a significance of 0.00 therefore concluded that there are significant differences between the cognitive learning product of students before and after exerts cooperative learning model type Group Investigation.

**Keywords:** learning equipment, Contextual teaching learning , PHET software.

## 1. INTRODUCTION

Grounded Education Law No. 20 of 2003 that was organized by providing an exemplary education , willingness to build and develop the creativity of learners in the learning process ( Asmani , 2012: 91 ) . Based on these opinions can be said that teachers as educators is not only

required to have skills in theoretical experience but also must have the practical ability to generate interest and develop the creativity of learners . One way that teachers should be sejeli possible to adjust the learning model with the characteristics of the subject matter and the direction of the goal of the subject matter that will be delivered . Therefore , the use of the learning model that does not comply will be an obstacle in achieving the learning objectives that have been formulated .

Based on data from the Central Statistics Agency ( BPS ) August 2013 , registered vocational graduates are not absorbed world of work amounted to 538,000 people. Furthermore , many businesses or industries that refuse the applicants who come from vocational school graduates because they do not meet the qualifications required by the industry. It is a fact that there are still many students who are not able to master the competencies expected

Based on preliminary observations made by researchers, student achievement Industrial Electronics Engineering at SMK Negeri 2 Arosbaya. the academic year 2012/2013 has not been entirely achieve optimal results. Mastery of Basic Competency Vocational subjects have not yet reached the optimum performance in accordance with the minimum completeness criteria (KKM) that have been determined by the teachers based on school curriculum at 75. Further on the competence of such expertise, quality learning device needs either a medium of learning and teaching materials ( syllabus, lesson plans, worksheets and evaluation sheets) as a tool in the delivery of material. Availability of diverse learning and quality needed to help students achieve competency was determined. This is in accordance with the Ministerial Regulation No. 65 Year 2013 on a standard process in which for every unit of education planning for learning, the implementation of the learning process as well as evaluating the learning process to improve the efficiency and effectiveness of the achievement of the competence of graduates

Therefore we need a model of innovative learning, one Learning Model CTL (Contextual Teaching and Learning) Learning Contextual Teaching and Learning approach contextual learning into experience more meaningful learning CTL helps students students in building the knowledge that they will apply in lifelong learning. Thus, the subject matter will be added meaningless if students learn the material presented in the context of their lives, and find meaning in the learning process, so that learning will become more meaningful and enjoyable. So it is clear that the use of contextual learning will create classrooms in which

students will be active participants not just passive observers, and is responsible for appropriate learning curriculum in 2013 that students actively seek out. Results of research conducted by Taroreh (2013) showed that the results of the two tests the average value of the difference between pretest-posttest experimental classes are 77.18 and 69.86 in the control class inferential analysis showed the value = 2,218 dan = 2,018 meaningful statistical tests fall in the area of criticism. It can be shown that there was insufficient evidence to refuse, because the value > then reject so accepted. There can be summed influence learning model CTL for basic electronics student learning outcomes. Therefore this model suitable for use in the In the field of education technology utilization of information and communication is very related to use of hardware and software. Technology examples of the use of information and communication related to use of hardware and software in the field of education is a virtual laboratory, which is one example of an experiment is usually performed in a laboratory but is converted into a form of animation or computer applications. This laboratory can be used as a medium of interactive learning that helps students understand the material. Further use of the software on the learning process is able to provide improved student learning outcomes. Research conducted by Rosayanti (2013) showed that by using the software on learning in class in get results; that there are differences in learning outcomes of students in a class experiment by learning media EWB and Circuit Maker with student learning outcomes in grade control without the provision of instructional media EWB and Circuit Maker. The value of learning outcomes classroom experiments using instructional media better than the control class student learning outcomes without the use of instructional media. With an average grade of learning outcomes of experiments (X-TAV 1) is 84.686 and the average value of the control class (X-TAV 2) is 83.371. And obtained  $t = 1,807 > t \text{ table} = 1.671$ . This shows the electronic learning using simulation software can improve student achievement. One software that can be used as an interactive learning media is PHET. PHET software is shown

Based on the above problems, formulated the research problem, namely (1) how is the quality of the learning device (syllabus, lesson plans, worksheets, LP) implement cooperative learning model CTL yang refers to the curriculum in 2013?; (2) how the cognitive achievement of students after being given the product of cooperative learning Group Investigation?

The purpose of this study, namely (1) to describe quality pembelajaran device (syllabus, lesson plans, worksheets, LP) applying the learning model CTL yang refers to the curriculum in 2013; (2) determine the learning outcomes of students after being given the product of cognitive learning device CTL learning with the help of software

Learning Model CTL (Contextual Teaching and Learning) Learning Contextual Teaching and Learning approach contextual learning becomes more meaningful experience baCTL students in building the knowledge that they will apply in lifelong learning. Thus, the subject matter will be added meaningless if students learn the material presented in the context of their lives, and find meaning in the learning process, so that learning will become more meaningful and enjoyable. So it is clear that the use of contextual learning will create classrooms in which students will be active participants not just passive observers, and responsible for the study. Steps penenerapan Contextual Teaching and Learning in the classroom as follows: Rusman (2012: 200) (1) Konstrutivisme: Developing students' thinking to do keCTLatan learning more meaningful if by working alone, find themselves and construct their own knowledge and skills that should be owned. (2) Ask: Developing nature inCTLn know students through raises questions. (3) inquiry: Carry out as far as possible keCTLatan inquiry for all the topics taught. (4) Community learning: Creating a learning society, as do keCTLatan group discussions , frequently asked questions, and so forth. (5) Modeling: Bringing the model as an example of learning. (6) authentic assessment: Allowing children to keCTLatan reflection of the learning that has been done. (7) Conducting subjective assessment. Point advantage Contextual Teaching and Learning as follows: Asmani (2012: 54) (1) The interaction of learning, motivation is given, (2) Understanding (3) Relationship of lessons with the real world, (4) In accordance with the circumstances. ( 5) Critical thinking.

## 2. METHOD

Type of method used in this research is the Research and Development ( R & D ) . According to Borg and Gall (1983 : 772 ) , that the procedure of the research and development basically consists of two main objectives : ( 1 ) product development , ( 2 ) test the quality and effectiveness of the products in achieving its objectives .

Research and development procedure consists of four stages , namely ( 1 ) a preliminary study ; ( 2 ) designing the learning device implementing cooperative learning model with reference models CTL development Research and Development ( R & D ) ; ( 3 ) validation and revision of the learning device ; ( 4 ) tested the learning device

According to Ibrahim (2005 : 40 ) a matter that has been written , then tested , to see its characteristics . The research design used in this study testing the device is a One- group pretest - posttest design . ie research in which there is a group who were given a pretest before being treated. Furthermore, the observed results. The goal is to be able to compare the situation before and after treated ( Sugiyono , 2010: 110 ) . The design of these studies are shown in Figure 2 below.

Picture 1. Metode quasy eksperiment (Sumber: Sugiyono, 2010: 111)

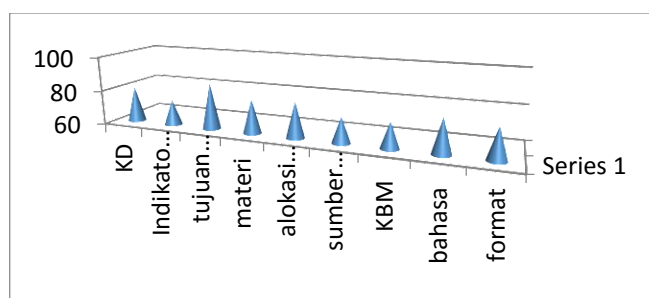
### 3. HASIL DAN PEMBAHASAN

Stage 1 Preliminary Study :Learning devices SMK Negeri 2 Arosbaya study by an expert in the field of education in Electrical Engineering . Based on the assessment and review of the validator decided not to adapt tools in the learning SMK Negeri 2 Arosbaya . This is due to several reasons including , namely , ( 1 ) The teaching materials are not accompanied by a list of learning objectives ; ( 2 ) the purpose of learning is very ambiguous and too broad ; ( 3 ) the condition of the material that is used is the latest ; ( 4 ) The learning objectives are not using the ABCD format ; etc .

Phase 2 Study Design Tool Design: Based on data from the preliminary study , researchers make learning device by mentioning some aspects , namely ( 1 ) the development of the learning device refers kurikulum , 2013; ( 2 ) the use of language that is not teralu complicated so that students easily understand the material given by the teacher ; ( 3 ) provide a real picture of the material that is taught in the form of drawings or simulations using the software so that the students' understanding can not abstract ; ( 4 ) the presentation of the material with images of attractive and clear so that students interested in learning the material

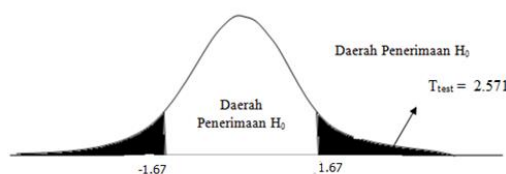
Stage 3 Validation and Revision and Phase 4 Trial Empirical and Revision learning device , validation of student questionnaire responses , validation of teaching materials , and validation of the results of the research point of this development is a learning device that is used to Influence Learning Model CTL With Software multisim On Competence Standard Electronics Against Student Results . At this stage presented a description of the research data is data about the validation device validation study carried out by experts . In this study consists of 3 Lecturer in Electrical Engineering , State University of Surabaya . From the results of the validation that has been filled by the experts , and then analyzed by calculating the rating of each indicator that will be categorized according to the results of the rating scale assessment criteria

$$\frac{\text{rata - rata hasil}}{\text{jumlah aspek}} = \frac{81+75+87,5+80+81,25+75+75+80+78}{9} = 80$$



Gambar 3. Grafik validasi Perangkat

will be proving the hypothesis , so it can be concluded that H0 stating learning outcomes of students with learning model CTL with software multisimsama with student learning outcomes with MPL , was rejected . H1 stating priority so that student learning outcomes with CTL learning model with software multisimlebih better than student learning outcomes with MPL , is accepted



From Figure 3 it can be seen that the ttest contained in the rejection of H0 as the value of t test > t table, so that the priority H0 rejected and H1 accepted. Ttest showed positive value, then there is a significant difference between the learning outcomes of students who are taught using instructional model teaching model CTL with software multisimpada experimental class with student learning outcomes using MPL models in the control class. So that the learning outcomes of students who are given the learning outcomes of students with learning model learning model with software multisimlebih CTL better than student learning outcomes with MPL models, in terms of learning outcomes experimental class better than the control class learning outcomes.

From the data it is known that the average value of the experimental class is 85, while the average value control class is 79. The results of student learning using learning model learning model with software multisimkelas CTL X-TEI 1 is greater than the results of student learning using learning model MPL X-TEI 3.

#### 4. KNOT

Based on the research that has been done can be deduced as follows : There is a comparison of the results of student learning in the classroom experiments using CTL learning model with simulation multisimdengan student learning outcomes in grade control using MPL . The value of learning outcomes Experimental class better than the control class student learning outcomes . With an average grade of learning outcomes of experiments ( X - TEI 1 ) was 85 and the average value of the control class ( X - TEI 3 ) is 79. And obtained t = 2,571 > t table = 1.67 . From the results of students' response to all aspects of the student questionnaire responses

categorized sheet psitif . Because it can be seen in all aspects to the average response of the students who answered strongly agree 41 % disagree 54 % dancukupsetuju 5 % , so that the students' response to pembelajaranpembelajaran dengansnowball throwing CTL models can be said to be positive

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The Analysis of Multimedia Elements in PowerPoint Presentation  
(a study towards student teachers of Economics Education)

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Abstract

One of Information and Communication Technology (ICT) key competencies is ability to use ICT features and applications for presentation. PowerPoint as one of the common presentation application software could be used to create multimedia presentation that integrate text, graphics, animation, audio, video, links, and interactivity. This research aims to investigate the integration of multimedia elements in student teachers' PowerPoint presentation. The subject of this research is the first year student teachers from Economics Education program. They haven't taken the PowerPoint presentation lesson in ICT subjects. The type of the research is a qualitative descriptive research. Qualitative data such as interviews with student teachers, observation of their PowerPoint presentation skill, and their PowerPoint presentation documents were analyzed. The result of this research will be presented in a descriptive narrative conduct explaining the integration of multimedia elements in student teachers.

*Keywords: ICT, presentation, multimedia, and PowerPoint.*

## A. Introduction

The ability of teachers to use ICT becomes a very important part in teaching. Siemen & Tittenberger (2009, p.15) stated that through an ongoing cycle of personal research, theory and practice, teachers are able to create an approach to technology that fits within the scope of their discipline, and the expectations of learners. As we know, nowadays learning environment is already filled with a variety of digital media devices, such as computers, smart-phones, personal digital assistants (PDAs), and Tablet PCs. Students can expend hours in front of screens of these digital media devices to watch videos, listen to music or play a computer program. Shelly, Cashman, Gunter, & Gunter (2006, p.7) stated that learning environment has been starting to change from simply relying on a single sensory be multisensory input, from the text-based first became digital and graphic first, of work oriented to play oriented, and from conventional speed become twitch speed.

Teachers should consider accommodating these changes into their learning media design. They could design their learning media for teaching in their classroom based on multimedia concept. Many multimedia-based learning media spread out nowadays. They could be downloaded from the internet.



They are also available in CD format at bookstores. Teachers can adopt these ready-made learning media and apply them in the classroom (Jatmika, 2005). But, sometimes this is not in accordance with the needs and expectations of teachers' classroom conditions. Therefore, teachers should have a plan to develop their own learning media according to the needs and the purpose of the message. The message content that will be displayed should organize images, fonts, colors and so on (Setiawan, Pribadi, Suroso, & Andayani, 2007).

Most of learning institutions such as: schools, college, and university today have a variety of multimedia applications. One of the most common applications is Microsoft PowerPoint. PowerPoint is an excellent tool for creating excitement, interest, and motivation in learning. It is one of the programs that have been known more widely than others authoring multimedia software. It allows teachers and students to develop multimedia presentations that can incorporate text, graphics, animation, audio, video, links, and interactivity (Shelly, Cashman, Gunter, & Gunter, 2006, p.305). The features of PowerPoint can be used to develop powerful multimedia learning that can affect student learning (Nouri & Shahid, 2005).

## **B. Multimedia Presentation**

The term of multimedia refers to the use of various media formats in a presentation or program is taught herself sequentially or simultaneously (Heinich, Molenda, Russell, & Smaldino, 2002). According to Mayer (2005), multimedia presentation in a more simple definition is words and images. Words presentations include the spoken and written words. Image presentation may include illustrations, pictures, animation, or video. Through these words and images presentation, learners build their knowledge. The learners obtain information and instruction how to construct it into their knowledge (Mayer, 2009, pp.20-21).

Multimedia learning can be divided into two based on his control, namely: linear and non-linear (Vaughan, 2008, p.2). Linear multimedia learning means the presentation is started from the beginning and continued till the end. In the linear multimedia learning, students can only browse the contents sequentially, from one frame to the next frame. Examples of multimedia learning multimedia learning are a linear form of film or video.

Non-linear multimedia learning means an interactive presentation of the content. Students are given the control navigation. They can browse the contents of each section in accordance with their wishes and not necessarily sequentially. Examples of non-linear multimedia learning are multimedia learning games.

Multimedia learning role is to immerse students in a multi-sensory experience in order to enhance student learning (Heinich, Molenda, Russell, & Smaldino, 2002). This is because the multimedia allows a person to be like a real experience without the need to be there experiencing the real. Things that need to be considered by the teachers is to understand clearly the learning objectives and the needs of the student experience (auditory, visual, or tactile) so it can be decided to determine the correct media to facilitate learning and how best to carry it.

We have to be detailed and careful in integrating these multimedia components. Vaughan (2008, p.2) stated that determining how a user will interact with and navigate through the content of a project requires great attention to the message, the scripting or storyboarding, the artwork, and the programming. You can break an entire project with a badly designed interface; also lose the message in a project with inadequate or inaccurate content.

### **C. Multimedia Elements in PowerPoint Presentation**

The research of multimedia elements in PowerPoint presentations that are discussed in this paper is a qualitative research using a case study approach. The subjects are the first year of economics education students at the Faculty of Education, University of Pelita Harapan. They're taking Computers and Learning Media subjects, but they have not received the PowerPoint lesson. The data was taken from their presentation on Religion 1 subject. There were four PowerPoint presentation files. The multimedia components inside these four PowerPoint presentations were evaluated. The results were confirmed in a group discussion. Discussion on individuals was carried out if there was a need to collect data more deeply. Observations were carried out by asking the groups to act their presentation like they had done in the classroom. Observations were also done by testing the ability of individuals who develop their group PowerPoint Presentation with multimedia elements inside it. The results will be delivered below.

#### **Text**

Text element become into a very important element. According to all group, this element was first determined in the preparation of the presentation. After each member of the group read the material of the topic, they will discuss together to decide the key points to be shown in their PPT presentation. They started with sentences. Then, they shorted the sentences into key words. Generally, when they sat together and discussed, one person scribbled on the results in the paper. Microsoft Word was used to create a draft text to be displayed. This first process was done in a quite long duration.

They had to think how to present the life of one of the characters of scripture. They desired to deliver it completely but also interesting within 8-10 minutes only. The selection of stories and choice of words became a very critical process. After all group members agreed, they could continue to the next step of PowerPoint presentation development.

### Image

Image becomes the next important element after text element. They used to select image after the text element was selected. Generally, image selection was searched through Google image. Mostly of the image selection process was done by one person in the group. This person was appointed by the other group members. This person had more freedom to determine the image to be presented. If other members have no objections, his or her image will be selected to be shown. So, the nuance of the presentation image was more like this person characteristic not the group one.



Figure 1: Butterfly and Bird Animated Image inside Slide

### Animation

Animation was selected after the text and images had already been arranged in the slide. There were two kinds of animation they used inside their PowerPoint presentation. The first was object animation inside the slide. The second was slide animation cross over the slide or we called it as slide transition. They used to use more than two kinds of object animations inside in each slide. They also used more than two kinds of slide transition in their presentation. Though selected animation followed the grand narration of the story, it mostly was influenced by the cool type of animation option from the PowerPoint program. Mostly of the image selection process was done by one person in the group. So, the nuance of the presentation animation was more like this person characteristic not the group one.

### Video and Audio

Not all groups inserted a video in their PowerPoint presentations. Only two of four groups used video in their presentations. Video could allow participants understand the presented material better. They used to search the video from YouTube. After they found the appropriate one, then they inserted it directly inside their presentation. They didn't edit the content and sound.



Figure 2: Video of Cain and Abel Story

### Hyperlink and Interactivity

Only one of the four groups used hyperlinks and interactivity. Mostly of the hyperlink and interactivity selection process was done by one person in the group. There are difficulties using hyperlink in their presentation in front of the class. For the rest of group members, hyperlink was new. They thought that there should be an early first simulation especially for operators, so that hyperlinks can be effectively used to keep the interactivity of presentation.



Figure 3: Main Menu and Sub Main Menu using Hyperlink

### Integrating Text and Image

Each group presentation used at least text element in their slide. They used to integrate text and image in one slide. There were three kinds of image and text integration. The first type was text on top of image. The text was not eligible enough to read.




**Figure 4:** Text is on Top of Image

The second type was image on top of text. As we see in figure 5 below, the whole text behind the image could not be noticed well. Actually, the text was shown first. Then, the image was animated later.

**REKA**

- Mordekhai : saudara sepupu Ester yang benar dan yang telah mengadopsidan membesark putrinya sendiri.



**Figure 5:** Image is on Top of Text

The third type was text and image separated. As we see in figure 6, the whole image and the whole text could be noticed well. Though animation was used, the content message still could be delivered very well.

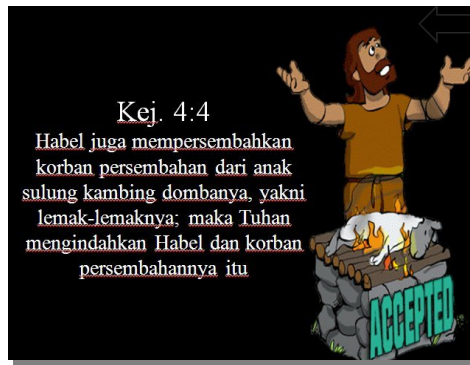


Figure 6: Text and Image is separated

PowerPoint could separate text and image easily. One of four groups used remove background facilities from Picture Tools Format ribbon menu to edit image. Figure 12 shows the remove background format tool.

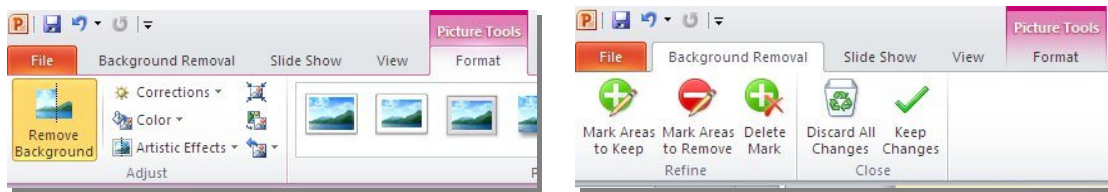


Figure 7: Remove Background Format

The result was so wonderful. The text and image could be integrated very nice but still separated each other. Figure 8 shows the result of before and after process remove background.



Figure 8: The Process of Remove Background

## D. Conclusion

Based on the result of this qualitative research using case study approach to the first year economics education student, we can conclude a few points. First, text becomes the main element to develop PowerPoint presentation. It could be written text or oral speaking. The narrative story is developed first through text element. Text and image element should be integrated very well. The students could use remove background tool. Second, animated text and image should not too vary. The animation should follow the narrative story of the presenter. The main point of the presentation is not the animation or the transition, but the message story is. The animation and transition should support the way of message delivery.

Third, video and audio could be used to make the presentation more interesting. But, the video and audio will be better to be edited first. So, the content will be in accordance with the whole presentation. Fourth, hyperlink and interactivity should be design very carefully. If one group students are going to develop an interactive presentation, they should discuss about the interactive design first. Then, they have to have a simulation PowerPoint presentation using the interactive navigation button.

Fifth, it will be better if the person, who is appointed to design the presentation, thinks very seriously in the selection of image and text. The theme of image and text should describe the content of message not describe about their preferences in design PowerPoint presentation.

The subject of this research study could be continued to other students from different major or to be compared with other students who have already taken the PowerPoint lesson.

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# ***USE OF PROJECT BASED LEARNING MODEL TO IMPROVE CREATIVITY CLASS XI SUBJECT TO THE INSTALLATION OF ELECTRICITY 5 SMKN IN SURABAYA***

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**Abstract:** The research background is a learning model that can construct the knowledge and skills of students is project-based learning. Project-based learning is a learning model that provides the opportunity for teachers to manage learning activities in the classroom to engage students in a project work. Hopefully, through this model, the creativity of students will increase. For the purpose of this study to determine the effect model of project-based learning to creative thinking ability of students on the subjects of power installations. This research is classroom action research. the population is students of class XI TL sebayak 3 with a sample of 28 students. The results of the study observations of student creativity during three cycles has risen in the first cycle of creativity to come percentage of 61.71%. In the second cycle students' creativity percentage increase of 7.83%, which became 69.54%. While the third cycle the percentage of student creativity increased 7.05% from the second cycle was increased to 76.59%. In the third cycle the percentage of student creativity has exceeded the index of success of 75% in the amount of 76.59% and included in either category.

**Keywords :** project based learning , creativity , power installations

## **PRELIMINARY**

Project Based Learning has shown that such an approach could make learners experience the learning process meaningful, ie learning developed by the schools of constructivism. Learners are given the opportunity to explore their own information through reading various books directly, making presentations to others, communicate the results of its activities to others, work in groups, provide suggestions or ideas to others and various other activities. Everything describe how adults should learn to be more meaningful.

Subjects power installations is a discipline of technology that aims to make students able to master the installation of three-phase power installations associated with motor control. This competence is given to the students of class XI 2nd semester Electrical Engineering Department (TL) SMK Negeri 5 Surabaya. Subjects of electric power installation consists of four basic competency,

namely: (1) Understanding the installation of three-phase electricity; (2) Plan a circuit panel 3 phase power installations; (3) memasangan circuit panel 3-phase power installations; and (4) Install a box-contact 3 phase. This basic competency subjects intended to prepare students to be able to master the installation of electric power 3-phase and 3-phase motor control which will be useful when entering the world of industry. On these subjects the students are also prepared to understand the design of the electrical power installations will also be useful when entering the world of industry.

Creativity is an area that is very interesting to study but it is quite complicated, causing a variety of different views. Slameto (2010: 145) states that the definition of creativity associated with the discovery of something, the thing that generates something new by using something that already exists. Something new this may be an act or behavior, buildings, and others.

Creativity is the ability to create new combinations of elements, data, variables preexisting (ating Tedjasutisna, 2004: 26). Creativity is a new idea which, combined with the results of pre-existing and transformed into something different than before. Creativity can be changed and developed of each individual because each person is different in its development. These capabilities can appear in all areas of human activity in the form of talent, art, science and technology and the environment is not limited to age, gender, ethnicity and culture.

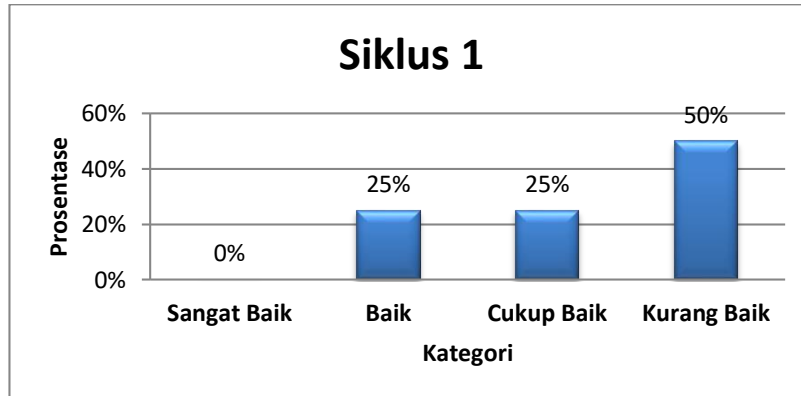
## **METHOD OF COLLECTING DATA**

Data collection technique is very important in the study because the purpose of the study was to obtain data. According Sugiyono (2005 : 63 ) there are several data collection techniques are observation , interviews , documentation . Observations or observation of developments in the understanding and creativity of students in the subjects of electric power installations . These observations were made using the observation sheet which has been prepared by giving a score if it is observed appear . The grating can be seen in the observation sheet grating research instruments.

## **RESEARCH RESULT**

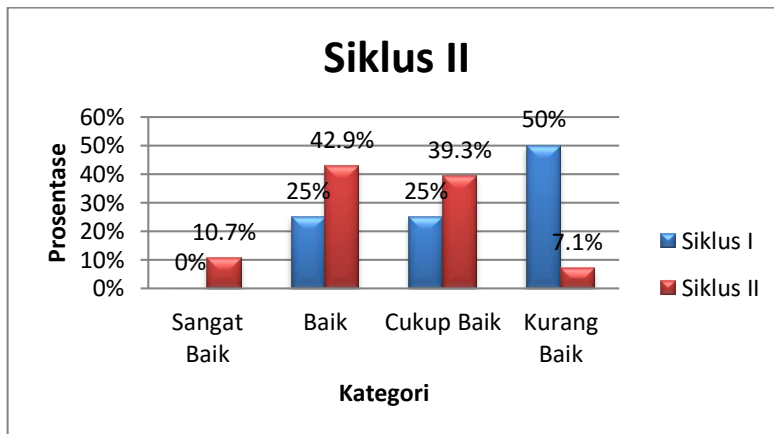
At this stage presented a description of the initial capabilities of students and classroom action research results description of each cycle . Data dalam research results as follows :

1. Cycle I



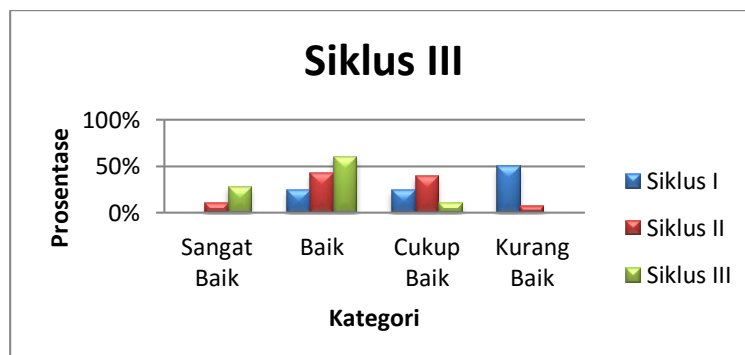
Categorizing Gambar1.Histogram Student Creativity Cycle I

2. Cycle II



Categorizing 2.Histogram picture Student Creativity Cycle II

3. Cycle III



Categorizing 3.Histogram picture Student Creativity Cycle III

## DISCUSSION

After the presentation of data related to research first cycle , second cycle and third cycle will be conducted discussions about students' creativity and psychomotor abilities of students .

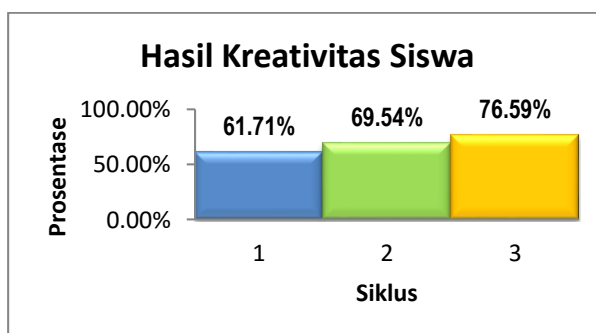
### 1. Creativity students in learning using project based learning models

Recapitulation of the observation skills of the student by using model -based learning project for three times siklus presented in Table 1 as follows :

**Tabel 1. Rekapitulasi Hasil Pengamatan Kreativitas Siswa**

Siklus	Prosentase	Kategori
I	61.71%	Cukup Baik
II	69.54%	Cukup Baik
III	76.59%	Baik

Based on Table 1 observations creativity of students for three cycles to increase the percentage . In the first cycle of creativity to come percentage of 61.71 % . In the second cycle students' creativity percentage increase of 7.83%, which became 69.54 % . While the third cycle the percentage of student creativity increased 7.05% from the second cycle was increased to 76.59 % . Histogram of increase students' creativity each cycle is presented in Figure 4 as follows :



**Gambar 4. Histogram peningkatan kreativitas siswa tiap siklus**

Based on Figure 4 observations creativity of students increased at each cycle . This increase is not out of reflection and revision of action of each cycle in order to get an increase in the creativity of the students were positive and also because the use of project-based learning models that stimulate students to think more creatively in the learning activities .

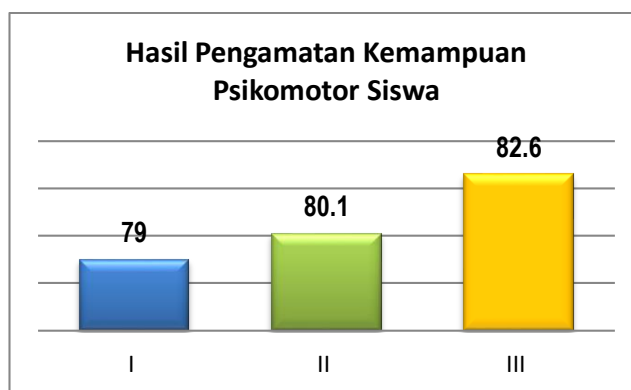
## 2. The ability of students in the psychomotor learning using project based learning models

Recapitulation observations psychomotor ability of students during learning using project-based learning models are presented in Table 2 as follows :

**Tabel 2. Rekapitulasi Hasil Pengamatan Kemampuan Psikomotor**

Siklus	Job	Rata-rata
I	Kontrol motor satu arah putar	79
II	Kontrol motor satu arah putar dikontrol dari dua tempat	80,1
III	Kontrol motor dua arah putar	82,6

According to Table 12 the results of psychomotor abilities of students for three cycles to increase the average value of the first cycle rata. Pada obtained average value of creativity at 79. In the second cycle the average value of creativity of students increased by 1.1 which becomes 80.1 % . Then in the third cycle the average value of psychomotor abilities of students increased 2.5 of a second cycle was increased to 82.6 . Histogram of increase in the average value per cycle is presented in Figure 5 as follows :



**Gambar 5. Histogram Hasil Pengamatan Kemampuan Psikomotor Siswa**

Based on the figure 5 it can be concluded that the average value of psychomotor abilities of students has been good because it was more than the standard of completeness that is equal to 75 and has always increased in each cycle .

## CONCLUSION

Based on data obtained from the results of a classroom action research that has been done, it can be concluded : The observation of students' creativity during three cycles has risen in the first cycle of creativity to come percentage of 61.71 % . In the second cycle students' creativity percentage increase of 7.83%, which became 69.54 % . While the third cycle the percentage of student creativity increased 7.05% from the second cycle was increased to 76.59 % . In the third cycle the percentage of student creativity has exceeded the index of success of 75% in the amount of 76.59 % and included in either category.

## SUGGESTION

Based on the discussion and conclusions of this study , it can put forward some suggestions as follows .

1. For the managers of educational institutions , in this case all parties involved in vocational Surabaya 5 is suggested to pay more attention to the character not only from the creativity of the students but also other aspects , because it will affect the learning process .
2. For the engineering program students use electrical installation techniques in order to better understand the importance of creativity because it affects the quality of dignity and respect for themselves .
3. For the academic Surabaya State University are advised to carry out further studies related to the increase in the character of vocational students not only of creativity but other characters .

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# The Analysis of English Language Education Students' Basic Teaching Skills during Listening and Speaking Microteaching in Groups

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## ABSTRACT

Microteaching is very important for student teachers in order to enhance their ability to teach. In English Language Education Department UPH, one of the microteaching lessons is called Planning, Strategy, Assessment, and Learning (PSAL) Listening and Speaking. In this class, students are required to form groups, plan a lesson related to teaching listening and speaking, and then practice it. Team teaching during microteaching for sophomore student teachers may bring some advantages in terms of self and peer reflection and also disadvantages for example domination and low self-esteem. The research intends to analyze the basic teaching skills in microteaching within the framework of team teaching. The subject of this research are two group of students majoring English Language Education of the Faculty of Education, Universitas Pelita Harapan in Academic Year 2014/2015 which consist of 3 students each. The type of the research is a qualitative case study research. The data collection techniques being used are observation and Focus Group Discussion (FGD). Moreover, the technique of analyzing the data was Miles and Huberman concept, namely, data reduction, data presentation, and conclusion drawing. The results of this research is that the student teachers could perform the basic teaching skills well which cover the ability to set induction or open the lesson and close the lesson, to ask question, to give reinforcement, to do variation, to explain, to guide small group discussion, to manage classroom, and to teach small group and individual. However, there were still some issues to overcome such as teachers' confidence, quality and quantity of critical questions given to the students, variation in method and strategy, effective class management both in groups and individually, and systematic presentation of information.

**Key Words:** *basic teaching skill, microteaching, team teaching,*

## 1. Introduction

One of the most essential things on being a teacher is to be an effective teacher. In order to be effective, a teacher should have competencies. According to *Undang-Undang no. 14, 2005* about teacher and lecturer in chapter VI section 3, teachers must have competencies such as pedagogical competence, personality competence, professional competence and social competence. These competencies contain basic teaching skills which help teachers in developing well planned and interesting lesson plan and therefore attracts students in class. As a very important training, microteaching will enhance students teachers' ability to teach. In English Language Education Department Universitas Pelita Harapan (UPH), one of the microteaching lessons is Planning, Strategy, Assessment, and Learning (PSAL) Listening and Speaking. In this class, students will plan a lesson related to teaching listening and speaking with a partner and then practice it.



As a teacher, reflection and evaluation on the classroom teaching and other aspects are of the utmost importance. Reflection and evaluation are needed to continuously improve the basic skills. These are believed to be significantly important in developing teacher's teaching skills [Bubb, Jacklin *et al.* and Leach as cited in Kyriacou, 2007]. The other important thing which could develop teacher's teaching skills is the collaborative work between teachers. According to Kyriacou (2007), working with other teachers is powerful and effective in helping them to reflect and develop their teaching. Working in a team gives opportunity to work and share development to each other, innovate and accommodate when improvement is needed, collaborate and co-operative working, and take action on feedback and advice. Next to that, there are several factors that determine a success team teaching. They are mutual personal and professional respect, adaptability and good humour [Sturman, 1992]. Not only these components, according to Sturman (1992) positive personalities, communication, attitudes, sensitivity are among other factors that support successful team teaching. Moreover, according to Duminy, MacLarty, & Massdorp (1992), it is possible to organize microteaching as team teaching experience in which the students would receive a whole new experience and are not treated like guinea pig.

Teaching without planning, organizing and evaluating activities is impossible [Kyriacou, 2007] consequently, microteaching purpose is to improve students teaching skills which include lesson plan design, teaching skills itself, strategy/approach skill, class management skill, and the whole presentation such as look, voice, language etc. This concept along with the department's microteaching purpose will be combined to achieve integrated results.

In order to teach a lesson, teachers have to first decide what they would like to achieve in class, what are their aims and objectives. Having these set, teachers then plan the best way to achieve them. Finally, teachers carry out the plan by teaching in class [Petty, 2009]. When teachers start a class, they will use opening skills in order to attract students' attention, motivate them and develop bond between students and teacher. These skills include teachers ways of reviewing previous class and connect it with the ongoing class, instructing the students in different pattern, and using aids. When teachers close the class, they will apply conclusions and evaluations. This final session in teaching includes assignments based on the teaching and learning process, questions to check students' understanding, as well as conclusion.

Teacher also has to pay attention on the subject of lesson that he/she teaches to be able to present it based on the lesson plan. The subjects of the lesson in this research are listening and speaking. Spratt *et al.* (2011) explains both skills distinctively. Listening is a receptive skill which involves responding instead of producing language. It involves understanding grammar, vocabulary, functions of what is heard, dealing with the characteristics of spoken language, using context and knowledge, understanding different text types, and understanding variety speeds of speech and accents. In contrast, speaking involves producing language rather than receiving it. Spratt *et al.* (2011) suggests some strategies to be carried out in speaking class such as using gestures, eye contact, facial expressions and movement, functional questions to clarify meaning, asking opinions, and agreeing in order to keep the interaction going. These strategies are related to skill of asking questions, skill to explain content knowledge, skill to use approach, language skill, as well as voice and speech.

Other significant parts of teaching skills are the selection and use of teaching aids and class management. It is important to select and use teaching aids by careful thinking on what is the main aims of the lesson [Spratt *et al.*, 2011]. Teachers have to have skill in managing class since class is very complex. Everything inside a class contributes to its complexity such as unpredictable events that may occur, abrupt change in phase in case misbehavior take place, and minimum privacy [Eggen & Kauchak, 2004]. Class management skill involve control on classroom's safety, clear view throughout the class, being perceptive, being attentive towards students with special ability, clear instructions and appropriate rebuke.

One research on microteaching was done by Frasetyana, Sujadi and Kusmayadi (2005). They examined eight teaching skills of two of their microteaching students who were different in academic competence. These skills are the ability to set induction or open the lesson and close the lesson, to ask question, to give reinforcement, to do variation, to explain, to guide small group discussion, to manage classroom, and to teach small group and individual. The research found that the subjects were able to practice every skill yet limitations in each of the skill were still observable. In addition, subjects' academic competencies influence on their teaching skills were not emphasized in this research. Nonetheless, this research focuses more on the descriptions of student teachers basic teaching skills in their Listening and Speaking microteaching class in relation to their performance in team teaching.

## **2. Research Method**

This research is conducted in one of microteaching classes in 3rd semester in Faculty of Education UPH. This research is a qualitative case study research with two group of students majoring English Language Education. Each group consists of three students with varied English competencies. The subjects were chosen using purposive sampling. Purposive sampling, according to Mulyana (2010) is choosing samples purposively where researchers can find samples who are willing to give data. Moreover, there is no standard on how many samples should be used in this sampling. Data collection was held in a natural setting using observation sheets. It was conducted once in the microteaching class, therefore there are two observation sheets. Researchers also conducted Focus Group Discussion (FGD) once for each group. The Focus Group Discussion is a reflective discussion to help students to be aware of what skills they have done well and what skills they have to improve.

Researchers analyzed the data by examining all the data collected in observation sheets and Focus Group Discussion. There are three steps of qualitative data analysis which are data reduction, data presentation and conclusion drawing. Researchers reduce the data using microteaching class' rubrics. Data presentation is in form of descriptive narrative. Finally, the conclusion is drawn from the data results through observation data and FGD.

## **3. Findings and Discussion**

Based on the observation and Focus Group Discussion (FGD), the findings for two groups of students are as follow.

### **1. Group 1**

The first basic teaching skill to be discussed is the ability to open the class. One member of the group (Teacher D) energetically opened the class by asking how the students are doing. In this opening session, teacher attracted students' attention by using some variation in her voice tones and showing her passion and motivation to the students. The other two members of the group also showed their motivation and passion through their smiling and radiant faces. These strategies were proven to be successful to attract the attention of the students. Teachers were also using visual aid in the form PPT slides with colorful and interesting pictures. Students also got interested with the PPT and paid attention on it.

Bonding between students and teachers were also shown by the effective communication between both sides. Teacher asked questions and students responded. Teacher also motivated students through some questions as follow.

*Are you ready for today's lesson? Who are ready? I hope you all are ready (Teacher D).*

Teacher gave some instructions such as the rules that the students should obey during the teaching and learning process related to behavior and attitude of the students. Teacher also asked the students to recall the topic of the previous class in order to review what they have learned before and connected the lesson they were about to experience. Overall, this group really took the opening session seriously.

When the Focus Group Discussion (FGD) took place, the member of the group said that they really wanted to attract students' attention by becoming the role model for the students. They were trying their best to be as motivated as possible so that it would be expressed through the atmosphere of teaching and learning. On the other hand, the teacher felt that even though what she did during the opening seemed to affect the students well proven by their responds, but she still felt that it did not come naturally. She was afraid that the students would be able to see it. She said that she believed she would be able to improve in the next microteaching.

By comparing the two data of observation and FGD, it is shown that the group has worked well in doing the opening that covers the ability to attract students' attention, use aids, vary interaction pattern, motivate, create the bond between student and teacher, give instruction, review the previous class, and connect the previous class with the ongoing class. They were not fully confident about that.

The second aspect is the ability to give reinforcement. Teacher's ability to do this was actually shown through her ability to motivate and create bonding to the students. Most of reinforcement done by the teacher (Teacher M) was verbal reinforcement as follow.

*It is easy, right? (Teacher D)*

*Good job! (Teacher M)*

*If you listen well, you will be good students. (Teacher M)*

The other reinforcement given to the students was teacher shared one Bible verse that would give encouragement to the students to learn harder and to be better. In the FGD, teachers explained that they really wanted to do it in the right way, but they were still afraid that they would look unnatural. This issue is the same with the opening session that the teachers were not confident about the way they showed it to the students. Overall, teachers have shown their best to give reinforcement to the students. From the FGD it was clear that they wanted the reinforcement to happen naturally instead of faking it.

Teachers in this group did various ways to ask questions to the students. During the lesson, they have encouraged the students to ask questions. To trigger students to think critically, they also gave rhetorical questions and questions to maximize students' ability. The questions were also based on the learning objective set in the learning plan and were based on Bloom's taxonomy. The questions were also in line with the material and meaningful for the students. During FGD, teachers said that they agreed that the ability of asking questions were very important not only to check students' understanding but also to encourage them to think critically. They felt that they could and should give more questions which encourage students to think more.

Teacher has proven that they were able to do variation in the classroom in terms of the way they were teaching and the way they presented media or material. Teacher played with their voice tones. Sometimes she gave silence moment and pointed some important point by raising her tone. In order to make the situation alive and engaging, the teachers varied their gestures. Moreover, teacher also showed some interesting pictures to make the students focused on the materials. During the FGD, teachers mentioned that they felt more confident in giving the variation in the classroom because they wanted to show their best according to the lesson plan. They also noticed that the students were more

engaged and attentive because they were being exposed with varied ways of teaching and learning. The different characteristics given by each teacher were also interesting to the students. Instead of listening to one voice, they were listening to three different voices with three different ways of teaching.

In explaining, this group was represented by one teacher (Teacher L). Teacher L explained the material clear enough by using PPT and without consulting any book or source. She explained the material in a systematic way. Students responded well by doing what the teacher instructed. Teacher also asked some questions related to the material and the students were expected to answer. In some parts of the explanation, teacher seemed to do some pauses. Teacher explained the material according to the plan and integrated Christian perspectives in the teaching and learning process. All students answered accordingly and they seemed to understand. In FGD, teachers mentioned that they felt they did not make use of the PPT well while explaining. Teacher L mentioned that she needed to study more because when she explained she felt that she missed some points. She said she would be more prepared in the future. The rest of the group felt that they needed to have more exercise before they did the microteaching. Overall, this group felt that they have not done the best for this part because they needed more exercise. Nevertheless, the good point was that they managed to have a clear and systematic explanation.

This group managed small group discussion in the classroom together even though there was still one teacher who was in charge in the front of the class. There was one time when teachers gathered in the front of the class and did their own discussion when the students were discussing. Most of the time they would pay attention to the discussion, but they did not build any communication to the students in order to check on them or supervise them in their groups. In FGD, they felt that they overlooked the chance to be closer to their students through the supervision in every small group. They thought that the students seemed okay and everything was under control. Based on both observation and FGD, teachers in this group have not done their best to manage the small group discussion yet.

Class management was certainly not easy for this group. Every teacher who had their turn to be in the front of the class tried to manage the class. They gave comments and instruction to the students related to the material and asked them to be in groups. Teacher tried to be perceptive towards the students. Some of the students looked sleepy but the teacher did not seem to do something. She did not give appropriate rebuke. She let the condition happened for some time. FGD also revealed the same facts that they struggled to manage the class because sometime they forgot what their previous actual plan was. They became not confident and they unconsciously let the students did some minor behaviors in the classroom. However, they did some good efforts on checking understanding while material being explained and small group discussion being conducted.

Teachers' ability to teach in small group and individual were shown primarily by giving the clear learning objectives for the class and clear agenda. Teachers enabled the students to be engaged by applying systematic method of teaching and learning which was student-centered both in group and individually. In FGD, teachers said that they should supervise their students more both in group and personally. In their opinion, they had to build more relationship with the students during the teaching and learning session. Overall, they have been good enough in maintaining their flow based on their plan even though it did not take place in the entire session.

At the end of the class, Teacher M checked students' final understanding by asking questions. She also drew the conclusion of the teaching and learning process together with the students and gave appropriate assignments to be their homework. She also

explained what teachers and students would do in the next meeting. In FGD, teachers mentioned that doing the proper closing was important. It should make a clear and strong impression about teaching and learning process, especially the material. They said it was also important to draw the conclusion together with the students. By giving the students the opportunity to express their thinking on the lesson, teacher would be able to do evaluation and reflection towards the lesson. From the observation and FGD, it can be concluded that this group did their closing well and meaningfully.

## 2. Group 2

Group 2 consisted of Teacher B, Teacher S, and Teacher I. Teacher I opened the class well but sometimes looked nervous. Teacher asked some questions related to how they are doing at the moment and how they are ready to join the lesson. Teacher also asked questions about the previous lesson. A video of funny skit related to the topic today was played to attract students' attentions. It was a huge success and the students were in their full attention. Moreover, teacher asked the students to discuss about the video and analyze the language being given.

In FGD, Teacher I said that he was very nervous at the lesson. He felt that he could be more expressive and alive so that the students were more engaged. However, the video was something Teacher I proud of because it really drew students' attention. It was fun and really related to the lesson. It helped teachers a lot to start the lesson. He said that he could be more enthusiastic in the next microteaching.

By comparing the two data of observation and FGD, it is shown that the group has worked well enough in doing the opening that covers the ability to attract students' attention, use aids, vary interaction pattern, motivate, create the bond between student and teacher, give instruction, review the previous class, and connect the previous class with the ongoing class. Teacher should be more enthusiastic and alive to attract students' attentions.

The second aspect is the ability to give reinforcement. Teacher's ability to do this was actually shown through her ability to motivate and create bonding to the students. Below are the verbal reinforcement done by the teacher.

*It is very good. (Teacher I)*

*It is very important for you to master the language (Teacher B)*

*Thank you for your answer, Vivi. Good. (Teacher S)*

In the FGD, teachers explained that they thought that giving reinforcement was a must in a lesson. It could give the students courage to be better in learning especially in language class. They also said that even though it was only in the form of gratitude, it could be very helpful to the students to know that they would and could master the language.

Teacher has proven that they were able to do variation in the classroom in terms of the way they were teaching. Teachers used their voice tones, gestures, and proper volume to attract students' attention towards the material and teachers' instructions. During the FGD, Teacher I said that it was good to be in team because he did not have to supervise the class alone because it would make the students bored. The other teachers also said that they thought their voice tones were flat and needed more variation. Teachers thought they seemed to repeat the same pattern and style in engaging with the students.

In explaining, this group was represented by one teacher (Teacher S). Teacher S really struggled in explaining the material to the students. She did not do it systematically even though there was PPT to help her. The effect of this was the students did not really get the instruction given by Teacher S. Fortunately the other teachers were able to help her by walking around and explained to the students at the back without disturbing the flow of the class. In FGD, Teacher S mentioned that they felt that she did not explain well enough

and did not explain the material according to the lesson plan. She said that she needed to check the understanding of the students more and make sure that they understand. Overall, this group did not really have a systematic in presenting information and following the lesson plan. But, their coordination and cooperation were good in helping the students.

This group managed small group discussion in the classroom together. All the group members always walked around and asked the result of the discussion. Teachers also answered the questions raised by the students. In FGD, they felt that they did help the students when they were discussing and that was very important in teaching and learning process. Based on both observation and FGD, teachers in this group have done their best to manage the small group discussion yet.

Teachers in this group asked questions to the students to check their understanding and encouraged them to think critically. The questions were to maximize their ability related to the material and prepared them for the next material. Teacher also gave rhetorical question about the video and hoped that it would be beneficial to the students that they could share their thought about the material. During FGD, teachers said that the ability of asking questions were very important to encourage them to think deeply. They felt that they would ask more critical questions based on their level in the future. The questions raised by the teachers are as follow.

*How do you like the video? (Teacher I)*

*Sharing the opinion about the video is important, right?(Teacher I)*

Class management was also not easy for this group. They gave some efforts to attract students' attention by giving them students-centered activities. Being in groups made the students occupied so that they would concentrate more to their assignments. Teacher also tried to be perceptive towards the students. Teachers also rebuked some students who were busy with their own conversation. In FGD, teachers mentioned that they struggled to manage the class because they did not know what to do if the plan did not run well. They could not think of any other solution to fix it. However, they said that they would be pay attention more on the method and strategy in the lesson plan so that they could manage the class as well as solve problems if they emerged.

Teachers' ability to teach in small group and individual were shown primarily by giving the students questions and checking their understandings. On the other hand, teachers also walked around and answered individual and group questions. Teacher also applied student-centered activities such as sharing opinion in groups and individually. In FGD, teachers said that they should pay more attention to the students so that teacher would understand their need.

At the end of the class, Teacher B checked students' final understanding by asking questions. He gave one Bible verse to encourage the students to be better in learning especially for the next meeting. Teacher also gave conclusion and explained what to do as their next assignment. In FGD, teachers mentioned that doing the meaningful closing was very important. However, Teacher I felt that they should do more in the closing to gain their attention and gave them more highlights towards the material. From the observation and FGD, this group did their closing well.

From the overall result of the study, it is shown that microteaching really helped the student teachers to enhance their ability in teaching even though there were some limitation and shortage in all basic teaching skills. They could practice their basic teaching skills and at the same time improve their ability in teaching and learning. This is aligned with the theory proposed by McKnight in Duminy, MacLarty, and Massdorp (1992) which said that microteaching is a scaled-down teaching encounter designed to develop new skills and refine the old ones. This practice of developing and refining

teaching and learning skills would enable the student teachers to continuously reflect and evaluate their performance as Bubb, Jacklin *et al.* and Leach as cited in Kyriacou (2007).

Another result also shows that being in groups or conducting team teaching could be beneficial for the students who were facing their first microteaching. Just like what Kyriacou (2007) said that working with other teachers is powerful and effective in helping them to reflect and develop their teaching. Working in a team gives opportunity to work and share development to each other, innovate and accommodate when improvement is needed, collaborate and co-operative working, and take action on feedback and advice. This team teaching of three might not easily take place in the real setting but at least as a training and practice, student teachers could embrace and experience the sense of respect, adaptability, and good humour just like what proposed by Sturman (1992) in their first microteaching. Moreover, the result of this research that student teachers were glad to be in groups and became more confident when they were teaching was alligned with what Duminy, MacLarty, & Massdorp (1992) stated in their book that it is possible to organize microteaching as team teaching experience in which the students would receive a whole new experience and are not treated like guinea pig. From this description, it is clear that the experience of teaching in group during microteaching would be meaningful for student teachers in the future.

#### **4 Conclusion**

Student teachers were able to open the lesson by attracting students' attention, using aids, doing varied interaction pattern, motivating, creating the bond between student and teacher, giving instruction, reviewing the previous class, and connecting the previous class with the ongoing class. They were also able to give reinforcement by giving verbal encouragements. Asking question was also the other skill that the student teachers tried to improve through asking critical questions and rhetorical questions based on the material. Moreover, variation in teaching and learning were conducted through voice tones and visual aids. In explaining aspect, student teachers were explaining the material through PPT and without consulting any book or source. Both classroom management skill and small group discussion guiding skill were not easy to handle because the students teachers needed more effective strategies. Teachers' ability to teach in small group and individual were shown primarily by giving the clear learning objectives and conducting student-centered activities both in group and individually. Finally, the student teachers closed the lesson by checking understanding, drawing conclusion, and giving assignment or instruction for the next meeting. However, there were still many things to improve such as teachers' confidence, quality and quantity of critical questions given to the students, variation in method and strategy, effective class management both in groups and individually, and systematic presentation of information. Moreover, by doing microteaching in groups of 3 or team teaching, student teachers were better in reflecting, evaluating, handling nervousness and also did well in responsibility distribution. These skills will be important for them in the future even though they are not teaching in team.

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**KEYNOTE  
AND PLANERY SPEAKERS**



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