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WELCOMING SPEECH FROM RECTOR OF UNIVERSITAS PAKUAN

Distinguished President of Association of Lesson Study Indonesia, Mr. Sumar Hendayana, Ph.D.
Distinguished keynote Speakers/invited speakers
Respectable Delegates and Guests
Honorable Presenter and participants
Ladies and Gentlemen…

Welcome to the 9th International Conference on Lesson Study (the 9th ICLS) at Universitas Pakuan Bogor Indonesia. It is organized with the aim of sharing information and discoveries related to research-based lesson study.

Lesson Study is an improved learning quality approach implemented by teachers in a collaborative manner to achieve the learning objectives, to carry out learning, to observe the implementation of the lesson, and to reflect on the learning studied for improvements in the next lesson plan. The main focus of lesson study implementation is student activity in the classroom, assuming that the student activity is related to teacher activity during classroom teaching.

Since Universitas Pakuan got the Grant of Lesson Study from the Ministry of Research, Technology and Higher Education in 2012. Universitas Pakuan consistently implemented the Lesson Study. We have collaborated with many schools in Bogor, and some of them are our piloting school. Currently, two faculties implemented Lesson Study there are Faculty of education and faculty of Mathematics and Natural Sciences.

This conference is expected to provide and share information about the development of lesson study implementation results in each country.

Thank you for your attention, and have a nice conference…

INTRODUCTION

Sumar Hendayana, Ph.D
(Presiden ALSI)

Nine years ago faculty of Mathematics and Science of University of Education of Indonesia (UPI) was initiating the commencement of a conference on Lesson Study for disseminating the best practice of Lesson Study of SISTEMS (Strengthening In-service Teacher Training of Mathematics Education at Secondary Levels) in West Java. The Implementation of Lesson Study was started from one regency in West Java namely Sumedang. Then, it spreads into 16 regencies in West Java. The conference of Lesson Study had been well known as Indonesia Conference on Lesson Study (ICLS). The first through the fifth ICLS was held by Indonesia University of Education supported by the Education Departement of the Government of West Java that involved all teachers in West Java Province.In order to build up the network of lesson study to be wider in the level of national and international, all initiators of lesson study in Indonesia agreed that the 6th ICLS in 2015 and the following years will be held at other universities in Indonesia. Therefore, the 6th ICLS in 2015 was held at Ganesha University of Education in Singaraja Bali. Since the commencement of the 6th ICLS, it was spreaded into the International Conference on Lesson Study (ICLS). In 2016 the 7th ICLS was held at University of Muhammadiyah Malang and Hamzanwadi University held the 6th ICLC in Lombok.

The University of Pakuan will host the 9th ICLS which will be held on 11-13 October 2018. The theme of the conference is **Fostering Equality in Lesson Study for Learning Community**. Attending the 9th ICLS, participants will gain invalueable frontier knowledge about education and pedagogy since the 9th ICLS has confirmed the attendance of the caliber international speakers such as Professor Manabu SATO from Japan, Professor Christine Lee from Singapore, Professor Siripaarn Suwanmonkha from Thailand, Professor Anna Permanasari from Indonesia, and Sumar Hendayana, Ph.D. the pressident of ALSI. Besides, the 9th ICLS will facilitate the experts of elementary, secondary, and higher education to share their experiences or the results of their innovation especially in learning improvement that is specially developed through lesson study. The special characteristic of ICLS is that during the commencement of the conference, there will be a package of “school visit”. In this session, the participants of the conference will be led to visit the schools that have implemented lesson study. Therefore, the participants will get opportunity to observe the student learning through lesson study which guide the students to learn by utilizing the local materials. I as the president of ALSI cordially invite the policy makers, education stake holders, and education practitioners to participate in the 9th ICLS. The other advantage of taking part in the 9th ICLS is all participants will automatically become the member of the Association of Lesson Study Indonesia (ALSI). I wish the 9th ICLS in University of Pakuan in Bogor can run very well as it is expected.

A FOREWORD OF THE CHAIRPERSON OF THE 9th ICLS

FOSTERING EQUALITY IN LESSON STUDY FOR LEARNING COMMUNITY

Dr. Eri Sarimanah, M.Pd
The Chairperson of the 9th ICLS

Assalamu'alaiykum Wr. Wb

A warm welcome extended to the publication of this edited abstract book, an abstract collection of plenary papers and parallel papers under the sponsorship of the 9th International Conference on Lesson Study theme "Fostering Equality in Lesson Study for Learning Community." ICLS is an annual meeting (henceforth conference) conducted by among scholars and practitioners who are concerned with sound research and solemn discussion in a classroom context where situated in lesson study. Chiefly this context, this annual meeting becomes a mandatory for conducting the 9th ICLS. The 9th ICLS is organized by Universitas Pakuan Bogor in collaboration with Indonesian Association of Lesson Study (henceforth ALSI) and the Ministry of Research, Technology and Higher Education. This conference is conducted on 11th – 13th October 2018.

Throughout this foreword, we would like to express our sincere gratitude due the following invited keynote speakers of this conference; Prof. Manabu Sato, Ph.D (Gakushuin University, Japan), Prof. Christine Lee, Ph.D (Nanyang Institute of Education, NTU Singapore), Prof. Dr. Anna Permanasari, M.Si (Pakuan University, Indonesia), Prof. Assoc Tatsuya Kusakabe, Ph.D (Center for the Study of International Cooperation in Education; CICE, Hiroshima University, Japan), Sumar Hendayana, Ph.D (Indonesia University of Education, Indonesia), Prof Siripaarn Suwanmonkha, Ph.D (Chulalongkorn University, Thailand), , due to their contributors to the 9th ICLS mission. Our sincere appreciation is due to subsequent to the following speakers; Ms. Naomi Takasawa (JICA, Japan), Rie Takahashi (PICO, Thailand), Prof. Yoshida Kazuhiro, Ph.D (Hiroshima University, Japan), Ms. Yamane Tomomi (Hiroshima University, Japan), Prof. Chayapim (Chulanglongkorn University, Thailand), Yoko Takimoto (Gakushuin University, Japan), Kanoko Katanayagi (Tokyo University, Japan), Zanaton binti Hj. Iksan, Ph.D (University Kebangsaan Malaysia), Sayyidah (University Kebangsaan Malaysia), Noel Jimbai, Ph.D (Sarawak, Malaysia). Additionally, we would like to express our thanks to the practitioners, researchers, teachers, school principles, and others who are willing to contribute an article to this valuable conference. Their ideas, experiences and recent research findings in the field of teaching and learning process based on lesson study are value-added teacher professional development.

School visit plays an influential role for every Lesson Study conference, so is throughout the 9th ICLS. In the 9th ICLS, four partner schools are applying 'Do' cycle for host school visit. The school are namely SDN Kencana 3, SMPN 1 Cigombong, SMPN 3 Cibinong and SMPN 4 Cibinong. Therefore, this school visit remains as one of the main agendas of the 9th ICLS. This school visit is issued of the last day of ICLS. Throughout the school visit, the trained teachers will present best practices to the 9th ICLS participants. It is aimed at providing a completed and fruitful experience for in the implementation of Lesson Study to all participants. Overall this conference covers valuable plenary sessions. Moreover, we conceded around 123 registered papers form Indonesia, Japan, Singapore, Thailand, and Malaysia where presented in parallel sessions. It will be of interest of practitioners and scholars in the teacher professional development domain. We do hope that participants will find this conference vitamin and energy for thought and classroom improvement.

CONFERENCE THEME:

In proudly hosted by Universitas Pakuan
Fostering Equality in Lesson Study for Learning Community

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THE IMPLEMENTATION OF *5E LEARNING CYCLE MODEL* ON THE TOPIC 'STRUCTURE AND FUNCTION OF PLANTS' TO IMPROVE THE SCIENTIFIC LITERACY OF THE SECOND YEAR STUDENTS OF A JUNIOR HIGH SCHOOL IN PEKANBARU

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Abstract. This study aims to improve student's science literacy skills by using *5E Learning Cycle model*. The treatment was conducted collaboratively for the topic 'Structures and functions of plants' involving Biology lectures, pre-service teachers, and the science school teachers of SMPN 21 Pekanbaru in August 2018. The focus of the observation was on science literacy and learning activities of students, both individually and in groups. Science literacy including scientific, procedural and epistemic knowledge was measured through worksheets. While the aspects of explaining scientific phenomena, evaluating and design scientific investigations, interpreting data, and the evidence were measured using an assessment sheet performance. Curiosity, scientific argumentation and environmental awareness were measured using the observation sheet. Learning activities carried out inside and outside the classroom had a positive impact on literacy skill science. The data showed the students individually or in groups could answer questions in the worksheet, more actively engaged, more enthusiastic and more curious when observing, identifying and grouping plants using real objects around school environment. Some questions arose from students when identifying corn and carrot plants about vegetative and generative structures. Overall, the implementation of *5E Learning Cycle model* can improve students' scientific literacy in learning science at SMPN 21 Pekanbaru.

Keywords: *5E Learning Cycle model, scientific literacy, junior high school*

INTRODUCTION

The twentieth century has been an undoubtedly a challenging era where the mastery of science and technology was the key elements for the development of a nation. For this reason, the science literacy is a basic need and compulsory for every citizen. To date, a country development is greatly affected by the quality of their human resources as indicated by literacy to science and technology (OECD, 2013). The OECD 2013 data and the PISA (Programme for International Student Assessment) data 2015 point out that the science literacy score of Indonesian middle school students is 40, placing the 64th place of 72 countries. The low science literacy of Indonesian students indicates that the science teaching

and learning in Indonesia has not been implemented as intended and therefore needs to be improved.

The Ministry of Education and Culture have made some significant changes in the education sectors, such as Curriculum 2013 (K13) and Gerakan Literasi Sekolah [School literacy program] 2015. K13 has been implemented through the scientific approach of five learning experiences namely: observing, inquiry, information gathering, rationalizing and communicating. Through these experiences, science students are expected to gain first-hand learning experience thus they can discover the concepts of learning holistically, meaningfully, authentically and actively (Benazir et al, 2017). However, the fact indicated the otherwise. Science learning was more dominated by content and facts that should be memorized by the students (Alok Irma et al, 2017).

Interviews with science teachers at SMPN 21 Pekanbaru provided some information that although K-13 and GLS have been implemented since 2016, there still have been some issues in the implementation. One of the biggest challenges was the learning design that could facilitate the students to be skillful in problem solving, evaluating and designing scientific research, drawing conclusion from the evident and applying the science into their real life. This fact was evident from the students' low proficiency in solving the problems related to the scientific phenomena in their life. For this purpose, an innovation on the science teaching is much needed, particularly at SMPN 21 Pekanbaru. In the beginning of academic year 2018/2019, a collaboration program was made in a form of teacher candidate placement and the supervision of classroom action research, between the Faculty of Teacher Training and Education, University of Riau and SMPN 21 Pekanbaru. This collaboration agreed upon an innovation to solve the challenge, one of which was the 5E Learning Cycle model.

5E *Learning Cycle* was firstly introduced by Robert Karplus in the *Science Curriculum Improvement* Study/SCIS (Trowbridge & Bybee in Made Wena, 2016). Learning Cycle was one of the learning models that apply constructivist approach. In this model, teacher role is to provide an environment where students can design and direct their learning more greatly. Instead of teaching the students directly and make them understand the material, this model promotes student active learning where they solve the problems independently, discover the solutions for themselves and working with ideas (Yatim Rianto, 2009).

5E *Learning Cycle* consists of five stages of *Engagement, Exploration, Explanation, Elaboration*, and *Evaluation* (Made Wena, 2016). *Engagement* stage aims to stimulate students' interest in learning, while *exploration* and *exploration* stages are intended to exercise students' procedural and epistemic knowledge. The elaboration and evaluation stages, on the other hand, promote students' ability to evaluate and design scientific research, inferring conclusion based on the evident and applying the science in the real life situation. All phases in this *5E Learning Cycle* are expected to improve students' science literacy. This current research is attempting to implement the *5E Learning Cycle* model to the learning of 'Structure and Functions of Plants' at Class VIII.2 SMPN 21 Pekanbaru.

METHOD

This study was collaboratively conducted among Biology lectures, pre-service teachers, and the science school teachers at class VIII.2 of SMPN 21 Pekanbaru with a total

number students of 41 during the academic year 2018/2019. The focus of observation was on the science literacy and student learning activities both individually and in group on the topic of lesson 'Structures and functions of plants'. The science literacy covers some aspects of scientific, procedural and epistemic knowledge. The mastery of science literacy was assessed through the worksheet. The skill aspects include: explaining scientific phenomena, evaluating and planning scientific research, interpreting scientific data and evidents. The aspects were recorded from students' worksheet. Students' attititudes such as curiosity, scientific argumentation and environmental awareness were assessed through observation sheets.

The implementation of *5E Learning Cycle* was carried out in three main activities and five teaching steps. The initial stage is engagement where teachers stimulate students' interest and curiosity on the topic of learning by giving apperception and motivation. The main activities include *exploration*, *explanation* and *elaboration*. At the *exploration* stage, students observed some plants in the school area and discussed with their peers. At the *explanation* stage, students presented their discovery and understandings with their friends. Followed by *elaboration* stage, teachers gave some problems to the students to evaluate their mastery of concepts. Finally, at the *evaluation* stage, teachers gave a post test and asked the students to make summary of the lesson.

The data of learning outcomes that included science literacy, skills and scientific attititudes were then analyzed descriptively and categorized into: very good ($85 < N \leq 100$), good ($80 < N \leq 85$), poor ($67 < N \leq 75$) and very poor (<67).

RESULTS

The learning activities carried out in this study consist of *plan*, *do* and *see*. The *plan* phase was conducted collaboratively on August 30, 2018 among Science teachers at SMPN 21 Pekanbaru, Biology lecturers from University of Riau, and university students on teaching placement at SMPN 21 Pekanbaru. The planning was accumulated as lesson design. Teaching instruments were reconstructed on the topic of 'Structure and fuctions of plants" by developing a lesson design consisting the teaching and learning scenario, the step-by-step procedures and the timeline. This topic was divided into four cycles namely (1) body parts of dicotyl and monocotyl plants, (2) photosynthesis test (Sachs test), (3) plant tissue, (4) technologies inspired by plants. The lesson design for the first cycle was illustrated by Figure 1 below.

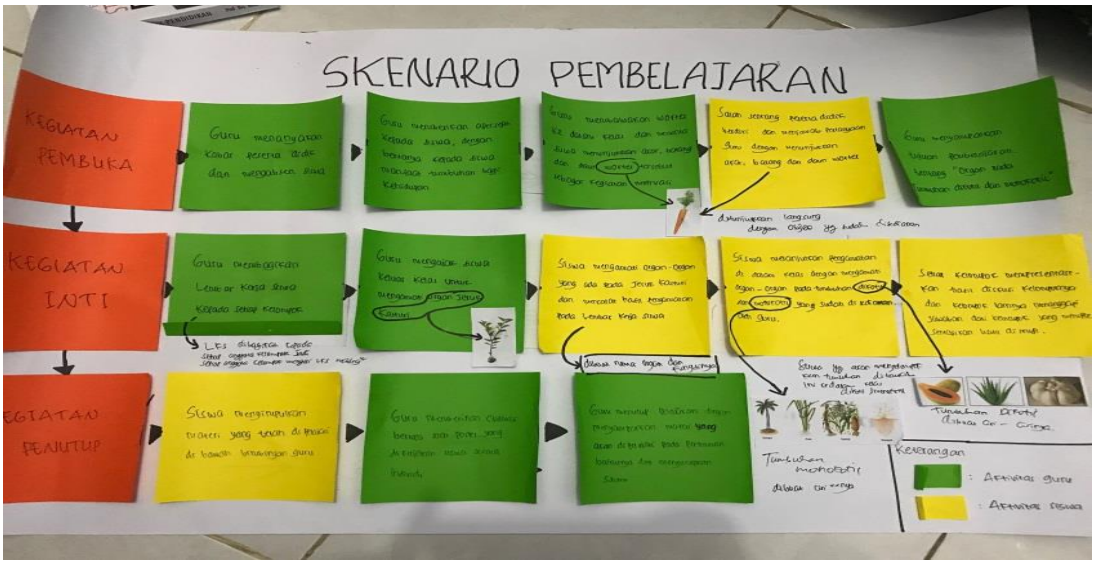

Figure 1. Lesson design on the topic “Body parts of dicotyl and monocotyl plants”

5E Learning Cycle model emphasizes on student active learning where teacher acts as the facilitator. There are five stages of *5E Learning Cycle* namely *Engagement, Exploration, Explanation, Elaboration*, and *Evaluation.*

The *engagement* phase was initiated by teacher giving apperception and motivation to the students. In the context of this research, the teacher had a carrot to the class and asked the students to identify the parts of carrot (e.g. root, stem and leaves). Many students raised their hands to answer the teacher question, and the teacher picked one student while also asking other students to add or clarify their friend’s response. This activity was intended to stimulate students’ curiosity in science as shown by Figure 2. It can be seen that students seemed so enthusiastic in the topic of dicotyl and monocotyl plants.


Figure 2. Engagement phase

At the *exploration* phase, students were directed to learn outside the class to observe the parts of orange trees (Kasturi oranges) growing on school area. Teachers also provide other types of plants that were observed inside the classroom. The focus of this activity is

classifying the plants into dicotyl and monocotyl groups, thus the *exploration* aims at developing students' research skills as parts of science literacy. In this stage, students explore their understanding and discuss with their peer groups. As students discuss and exchange ideas with others on the lesson, they were developing their procedural knowledge, scientific knowledge and also epistemic knowledge. Students were actively engaged in the learning activities shown by their participation in observation and cooperation with their group members. Students also posed some questions to their teacher on the discussed lesson. Teacher's role in this stage was to lead the discussion as shown by Figure 3 below.

Figure 3. Exploration activity in and out of classroom

Some questions students asked to the teacher:

Student 1 : Mam, why does corn have hair like soft thread?
Teacher : Who can answer the question of why do corns have soft thread hair?
Student 2 : Me, Mam! Hair on corns is actually a female reproduction organ
Teacher : Correct! Corn hair indicated female reproductive organ which plays significant role during reproduction

The teaching and learning situation as shown by the picture portrayed that the teacher did not directly answer student's question. Instead, she gave an opportunity for other students to provide the answers. The mechanism where a teacher provides guidance or probing is called scaffolding. Jumaidin Budaeng et al (2017) illustrated scaffolding strategy through a lesson section called "Coba Pikirkan [Let's Think]" on the topic of Mobility System where students did independent exercises while teachers reduced the amount of helps in solving problems and questions. Budaeng's study claims that students were motivated and able to solve the problems with a better understanding. Similarly, Ni Made Ratnasari et al (2018) also concluded that scaffolding technique could improve students' learning motivation and concept mastery in a Chemistry lesson.

At the *explanation* phase, each group presented their discussion results on the classification of dicotyl and monocotyl plants while the other groups respond and pose some questions. This phase aims at exercising and developing students' ability in interpreting scientific data, evidents and phenomena. Overall, most groups have presented the results correctly, except one group that misclassified turmeric as dicotyl instead of monocotyl plant. This inaccuracy, however, has been annulled by another group who clarified that turmeric belongs to monocotyl group. As suggested by Nugraheni (2017), *explanation* phase enables the students to construct and elaborate their understanding and comprehension as well as receiving feedbacks from their peers and teachers.

The following stage was *elaboration*, where students were discovering new problems and connecting some learnt concepts to provide solutions for the problems. Students who went through this elaboration stage very well did not have any difficulty in identifying the determining factors of problems and could easily solve the problems. In this study, elaboration stage was demonstrated by activities of plant modification where students were asked to explain about the modification of roots and trunks along with their functions. This stage encouraged students' development of scientific knowledge.

At the last stage of learning activities, teachers conducted an evaluation and follow up to the students individually to look into the achievement of learning outcomes and students' comprehension of the materials of 'dicotyl and monocotyl plant organs'. A study by Safwatun Nida et al (2017) indicated that the average score of students whose teachers combined both *5E Learning Cycle* and *Mind Mapping* (71.64) was higher than those with *5E Learning Cycle* only (65.09). It implies that the *5E Learning Cycle* would be more effective when it is combined with other innovative teaching models or strategies.

Some observations on teaching and learning activities suggested that the implementation of *5E Learning Cycle* on the sub theme 'Organs of dicotyl and monocotyl plants' has improved the students' science literacy. Some aspects of science literacy such as curiosity, scientific knowledge, procedural knowledge, epistemic knowledge, planning scientific research, interpreting scientific data and results, and explaining scientific phenomena have been developed from each stage of *5E Learning Cycle*. These findings are in line with the study results by Desi Nugraheni, et al (2017) which asserted that *5E Learning Cycle* consisting of *engagement, exploration, explanation, elaboration,* and *evaluation* phases has positively correlated to the students' science literacy and learning outcome on the theme of 'Human Nervous System'. Nugraheni also posits that each phase of *5E Learning Cycle* encourages students' ability on critical thinking, problem solving, communicating in written, knowledgable and interpersonal ways in science learning. It can also improving students' ability to memorize, understand, apply, and analyze in the cognitive learning outcomes.

A study by Alok Irma et al (2017) mentioned that the 5E Learning model could improve the percentage of students' science literacy as much as 11.5% on multidimensional category and by 53.8% on the conceptual/procedural category.

The 5E Learning Cycle learning model has encouraged the students to be more active during the lesson because the learning activities were student-centered. The 5E Learning Cycle learning model also enabled the students to better comprehend the materials being learnt. This was evident when students were asked to summarize what they had learnt during the day; students were able to provide conclusions about the learning materials. This ability to provide summary indicated that students comprehended and internalized the lesson well, supported by the fact that they themselves did the learning inquiry and active learning, without waiting for the teachers to explain.

CONCLUSION

The study concludes that the implementation of *5E Learning Cycle* could improve students' science literacy, particularly on the discussion of Plant Structure at the 8.2 Class of SMPN 21 Pekanbaru. The aspects of science literacy that were significantly improving are

curiosity, scientific knowledge, procedural knowledge, epistemic knowledge, planning scientific research, interpreting scientific data and results, and explaining scientific phenomena.

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APPLICATION OF *LESSON STUDY* AND ITS INFLUENCE TO UNDERSTANDING UNIVERSITY STUDENT LEARNING
(*University Student 2017 Of Class C Economic Education FKIP UNPAS)*

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Abstract. The title of this study **"Application of Lesson Study And Its Influence To Understanding university Student Learning"**. The purpose of this study is to determine the application of lesson study and understanding of university students' learning and to know the effect of lesson study on the understanding of university student learning in learning subjects office management. The research method used in this research is survey. Subjects in this study were university students 2017 of class C which amounted to 38 students. Data analysis used is data verification analysis through mean calculation (mean) score with SPSS release 21.0 for Windows. Result of research of recapitulation of average score of responder responses about lesson study equal to 3,82 included in good category, meanwhile comprehension of university student learning equal to 3,82 included in good category, hence can be concluded that responses of respondent to lesson study and learning comprehension "Good". Based on data analysis that has been done then obtained the results of research influence the implementation of lesson study is the coefficient of determination R Square of 0.581. It is stated that variable X has an effect of 58.10% to variable Y and the remaining 41.90% influenced by other factors. Factors that give effect to the variable Y as much as 58,10% caused by indicator of variable X in the form of purpose, function and benefit of lesson study. The conclusion of the research can be accepted, as the end of the research, the authors convey the suggestion as a consideration for teachers, schools, and university to apply lesson study learning in the process of learning on office management subjects are also adapted to the learning materials. To improve university students' learning comprehension, educators can apply various innovative learning media and delight students so they can improve their learning comprehension.

Keywords: **Lesson Study and Understanding University Student Learning.**

INTRODUCTION
Background of the Problem

Education is the spearhead of a nation's progress. The nation will become advanced if it has high quality of the human resources. The quality of the nation in the future depends on the education that is being tasted by children, especially through formal education received at school. Education is not just teaching that discussed by the government, education providers, education experts, and the community, but more than that, education requires direct handling from the government, especially the national education minister and its

equipment. Because education is a complex and long-term process, in the context of changing attitudes and behaviors that are realized so that it becomes a daily character, as stated in the opening paragraph of the 1945 Constitution as a national ideal.

In the law number 20 of 2003 chapter. 1 article 1, states: Education is a conscious and planned effort to realize a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and country.

Based on this, education is very straregical because of the necessity to not only be able to explore and enhance the potential of students or human resources, but also can improve the dignity and quality of life. The dignity and quality of life of students is more or less influenced by the success in taking quality education. How the learning process is an important thing that must be planned, so that each student gets a quality learning. On this basis, it is considered important and necessary to conduct research on the application of lesson study and its influence on student learning comprehension (Pasundan university office management courses).

Definition of Operasional

So that in understanding this writing does not become a difference in perception, it is necessary to include a definition of the problem raised:

1. Application
   According to Harjanto (2005, p. 60) "Application is as the ability to use materials that have been learned in new and real situations including the ability to apply rules, methods, concepts, principles and theories".
2. Lesson study
   According to Sumar Hendayana (2009, p. 5) "Lesson study is a model of training the teaching profession through collaborative and ongoing learning studies based on the principles of collegiality and mutual learning to build a learning community".
3. Influence
   According to the Big Indonesian Dictionary (2005, p, 849) says, "Influence is the power that exists and arises from something (person or thing) that contributes to a person's character, beliefs or actions."
4. Comprehension
   According to the Big Indonesian Dictionary, "Comprehension is understanding right (about something) and understanding can be interpreted as a process, way, act of understanding or understanding" http://kbbi.web.id/

Lesson study and its influence on understanding "in this study is the application of a model of professional educator development so as to be able to support a learning process and produce a quality learning community.

METHOD

Research method is one of the important thing in conduct research, this thing is necessary by a researcher to explain the meaning of their research. According to Indrawan

and Yaniawati (2016, p. 51) state as follow: Research using methods in a quantitative approach, hereinafter referred to as quantitative research, is a form of scientific research that examines a problem from a phenomenon, and looks at possible links or relationships between variables in the problem set. The connection or relationship in question can mean a causality or functional relationship.

Based on several opinions above the research method used to find or collect data in this study uses survey methods.

RESULTS

Definition of lesson study

Lesson Study is not a strategy or method in learning, but it is one of the coaching efforts to improve the learning process carried out by a group of teachers collaboratively and continuously, in planning, implementing, observing and reporting learning outcomes. Lesson Study is not a momentary project, but it is a continuous activity that is endless and is an effort to apply the principles in Total Quality Management, namely to improve the process and results of student learning continuously, based on data.

Lesson Study is an activity that can encourage the formation of a learning community that consistently and systematically conducts self-improvement, both on an individual and managerial level. Slamet Mulyana (2007) provides a formula about Lesson Study as a model for educating professional development through collaborative and ongoing learning assessment based on the principles of collegiality and mutual learning to build a learning community.

Meanwhile, Catherine Lewis (2002) mentions that: “lesson study is a simple idea. If you want to improve instruction, what could be more obvious than collaborating with fellow teachers to plan, observe, and reflect on lessons? While it may be a simple idea, lesson study is a complex process, supported by collaborative goal setting, careful data collection on student learning, and protocols that enable productive discussion of difficult issues”.

Bill Cerbin & Bryan Kopp stated that Lesson Study has 4 (four) main objectives, namely to: (1) obtain a better understanding of how students learn and teachers teach; (2) obtain certain results that can be utilized by other teachers, other than participants of Lesson Study; (3) systematically improve learning through collaborative inquiry. (4) build a pedagogical knowledge, where a teacher can draw knowledge from other teachers

The Lesson study stages

Regarding the stages in this Lesson Study, several opinions were found. According to Wikipedia (2007) that Lesson Study is carried out through four stages using the Plan-Do-Check-Act (PDCA) concept. Meanwhile, Slamet Mulyana (2007) presents three stages in Lesson Study, namely: (1) Planning (Plan); (2) Implementation (Do) and (3) Reflection (See).

stated above, and the team shares the findings. For more details, by referring to the thoughts of Slamet Mulyana (2007) and the concept of Plan-Do-Check-Act (PDCA), below will be briefly explained about the four stages in organizing of the Lesson Study

Planning Stage (*Plan*)

In the planning stage, the teachers who are members of Lesson Study wil collaborate to develop lesson plans that reflect student-centered learning. Planning begins with the activity of analyzing the needs and problems faced in learning, such as about: basic competencies, how to teach students, anticipate lack of learning facilities , and so on. So as to know the various real conditions that will be used for learning purposes. Furthermore, a solution is also sought to solve all the problems found. Conclusions from the results of the needs and problems analysis become a part that must be considered in the preparation of the Lesson Plan, so that the Lesson Plan becomes a truly plan, which in it is able to anticipate all the possibilities that will occur during the implementation of the learning, both in the initial stages, the core stages until with the final stage of learning.

Implemenation Stage (*Do*)

At the second stage, there are two main activities, namely: (1) the implementation of learning activities carried out by one of the teachers that agreed upon or at their own request to practice the Lesson Plan that has been prepared together, and (2) observations carried out by members or other Lesson Study communities (read: teacher, principal, or school supervisor, or other invitees who act as observers / observers)

Reflection Stage (Check)

The third stage is a very important stage because the efforts to improve the learning process will depend on the sharpness of the participants' analysis based on observations on the implementation of the learning that has been carried out. Reflection activities are carried out in the form of discussions followed by all Lesson Study participants guided by the principal or other designated participants. The discussion begins with the delivery of the impressions of teachers who have practiced learning, by conveying comments or general impressions as well as special impressions of the learning process they do, for example regarding the difficulties and problems perceived in carrying out the drafted Lesson Plan.

Furthermore, all observers convey responses or suggestions wisely to the learning process that has been carried out (not to the teacher concerned). In presenting the suggestions, the observer must be supported by the evidence obtained from the observations, not based on their opinion. Various discussions that develop in the discussion can be used as feedback for all participants in the interest of improving the learning process. Therefore, all participants should also have the notes of the conversation that took place in the discussion.

Follow-up Stage (*Act*)

From the results of reflection can obtain new information or results that are important for the improvement and improvement of the learning process, both at individual and managerial levels. At the individual level, various findings and feedback conveyed during the discussion in the reflection (check) stage become teachers for teachers, both of whom act as observers and observers to develop a better process. At the managerial level, by directly involving the principal as a participant in Lesson Study, of course the principal will issue various inputs relevant to the management of education in their school as a whole. If all this time the principal has been preoccupied with things outside education, with direct involvement in Lesson Study,they will be better able to understand what teachers and students actually

experience in the learning process, so that principals can focus more on realizing theirself as an education leader in school.

CONCLUSION

Based on the results of data analysis and hypothesis testing conducted by researchers in class C of 2017 regarding the application of lesson study and its influence on student learning comprehension in office management courses, the following conclusions are drawn: Hypothesis testing can be concluded that the hypothesis (H1: pyx ≠ 0) is accepted) means that there is an effect of applying lesson study on student's learning comprehension in office management courses. The results of the study can be seen that the application of lesson study can improve student's comprehension of learning. This can be used as consideration for teachers, schools, and universities to apply lesson study in the learning process in office management courses that are also adjusted to the learning material. To improve student's learning comprehension, educators can apply various instructional media that are innovative and fun for students so that they can improve their understanding of learning.

From the results above, using lesson study that has been implemented properly and good effect in the students comprehension learning at the class C in pasundan university. This means if using a lesson study better it will make a students comprehension learning better too.

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PLANNING OF STUDENTS' SOFT SKILLS DEVELOPMENT IN LESSON STUDY ORIENTED LECTURES THROUGH EMPOWERMENT OF STUDENTS' ACTIVITY UNIT

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Abstract — Pasundan University is one of the private universities that has a high commitment to improve the quality of graduates who have the ability to compete, both nationally and internationally. Efforts to realize this are implemented in an effort to improve the quality of graduates, one of which is improving lecturer services through lectures. The orientation program that began to be realized is one of the lesson study programs. This is a means to build students' hard skills and soft skills through experience in lecture activities. The potential of supporting resources in the campus environment is strived to further color the characteristics of experience-based learning and environmental empowerment carried out at FKIP Unpas. Efforts to build these soft skills have been started from 2017. Qualitative descriptive used in this research. This method is used to describe the achievements of soft skills through lectures based on lesson study as well as student validity in the campus environment based on the data obtained from the results of the questionnaire. Workshops and focus group discussions (FGD) were conducted to formulate and make instruments for developing soft skills in lesson-based learning. The study sample consisted of state and private high school teachers, lecturers, and student representatives from each Students' Activity Unit or called UKM. The instruments used were observation sheets, participant response questionnaires, RPS assessment rubrics, design lessons, lesson study guides, documentation and interview guides. The results of the study are that most of the participants have been able to formulate a lecture curriculum in the form of soft skills achievement reflected in the Semester Learning Plan (RPS), lesson design based on the achievement of soft skills. Further research will be conducted on the dissemination of research results in lectures at FKIP Unpas.

Keywords: Soft Skills, Lesson Study, Student Activity

INTRODUCTION

Skills are a very important thing and also as one of the factors that can determine a person's success, because with skills can help someone in expressing ideas and developing their creativity so as to make things more meaningful. A person's success can be supported by hard skills that are also balanced by soft skills. The ability of hard skills in the world of education can be seen from the ability of students in mastering the material as well as technical skills related to the field of science they are living. While the ability of soft skills is the ability to relate and cooperate with others, or said to be interpersonal skills. The improvement of students' abilities is not only seen from the final grades, but also must be

considered through the learning process as stated in Permenristekdikti No.44 of 2015 article 14.

The regulation states that learning methods for the implementation of subject learning include group discussions, simulations, case studies, collaborative learning, cooperative learning, project-based learning, problem-based learning, or other learning methods, which can effectively facilitate the fulfillment of graduate learning outcomes. Based on this statement, in the learning process a lecturer is required to master the learning method in order to create effective, creative, innovative learning and there is a two-way interaction between lecturers and students. The learning can hone students' soft skills that are very necessary in undergoing lectures, but to improve this needs to be balanced with the ability of lecturers soft skills with lesson study. Lesson study is a model for educating professional development through collaborative and ongoing learning assessment based on the principles of collegiality and mutual learning to improve the quality of learning and build learning communities. The impact of implementing lesson study shows that the lecturers who implement lesson study become more understanding of the learning problems of students (_____, 2018).

The ability of lecturers to deliver material when learning takes place will affect students' hard skills and soft skills. Student soft skills can be improved through the learning process and participation in Student Activity Units or called UKM within the Pasundan University such as BEM or Student Executive Board, Mapak Alam, KOPMA, Pramuka, Student Voluntary Corps, Student Press Institution, Student Sports Coordinator, LISMA, Student Leadership Training and Mosque Prosperity Council. Student activity is a means that can empower potential, explore students' talents and interests. Students can get knowledge other than in class can also get other knowledge when attending student organizations so that students will have the ability in the academic field and also have qualified soft skills. In addition to obtaining a high GPA (cumulative achievement index), it must also be able to hone students' soft skills themselves. A high GPA will be less useful if you do not have experience or expertise in their field. As revealed by Aly (2017) that student activities in several educational institutions can develop soft skills including increasing thinking skills, learning skills and living skills. In addition, student characters can be developed by lecturers through soft skills based lecture activities. To support this, a lecturer must have classroom learning and management methods that can be arranged in a learning plan. Semester Learning Plan or what it also called RPS is a learning plan that is compiled for one semester to meet the learning achievement of graduates. The RPS compiled by the Biology Education Study Program (2016) is a learning program document designed to produce graduates who have the ability to achieve the specified graduate learning outcomes . Learning that is designed is learning that is student centered. RPS must be reviewed and adjusted periodically with the development of science and technology. Permenristekdikti No.44 of 2015 Article 12 states that RPS is stipulated and developed by lecturers independently or together in a group of expertise in a field of science and /or technology in the study program.

Students' soft skills in learning can be developed in RPS by creating soft skills at each meeting. As has been done in the first year of research in Cartono, et al (2018) by looking at several indicators such as the ability to communicate, the ability to think or reason, the ability to solve problems, teamwork, moral ethics, and leadership skills.

To knowing the achievements of the students' soft skills, workshops and Focus Group Discussions (FGD) were conducted through lesson study-based lectures and activeness in student activities so that it affected the improvement of student soft skills. Through this activity, RPS is reviewed if it does not bring up the soft skills of students so that the results of the FGD and workshops are revised RPS that can develop student soft skills. Aside from reviewing the RPS, representatives of each student organization are also involved to provide input on student activities that are in line with lectures without interrupting learning time, assessment of high school teacher teachers and lecturers who can provide written input so as to improve classroom learning.

METHOD

Qualitative descriptive used in this research. This method is used to describe the achievements of soft skills through lectures based on lesson study as well as student validity in the campus environment based on the data obtained from the results of the questionnaire.

The samples used in this research were 30 participants consisting of state and private high school teachers, lecturers, representatives of each student activity and student representatives. Data collection techniques used observation sheets, participant response questionnaires, RPS assessment rubric, lesson design, lesson study guide, documentation and interview guide.

RESULT

The results obtained in the study are in the form of lecture curriculum formulation in the form of Semester Learning Plans or RPS and soft skills based lesson design. The results of the questionnaire regarding the importance of campus environment empowerment (student activity) in lectures showed that around 80% of participants stated that the professional development of lesson study on lecturers/teachers was very important. 73.33% stated the importance of achieving soft skills and authentic assessment in class. Teacher/teacher professionalism development and development activities were developed around 23.33%. Activities carried out in observing the learning of other lecturers/teachers were only carried out around 10%. 63.33% stated that the existence of professional learning can have a positive influence on lecturers/teachers. The results of the questionnaire can be seen in Figure 1.

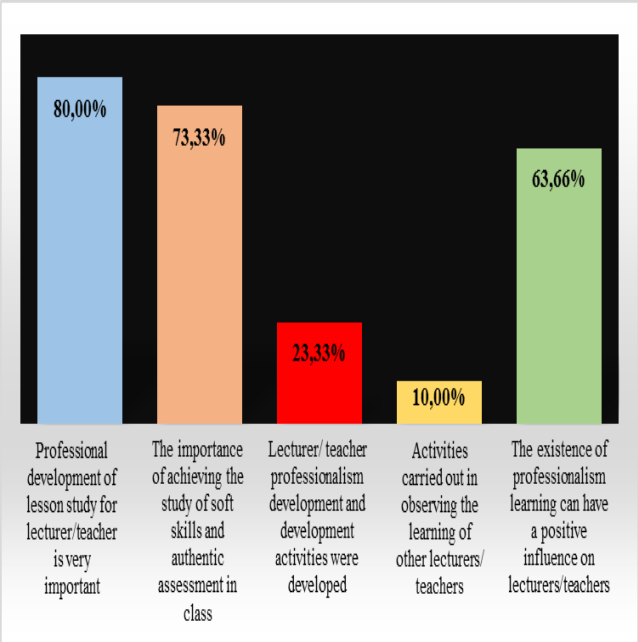

Figure 1. Empowerment of the Campus Environment in Lectures

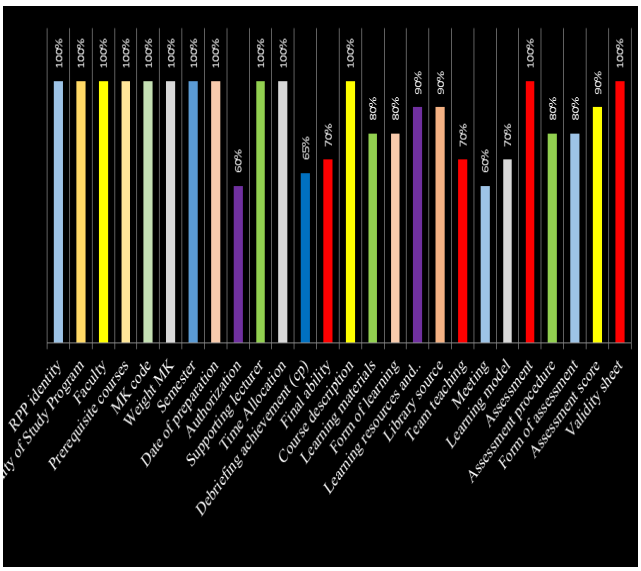

Figure 2. Results of Participant Assessment of Lecture Planning

Figure 2 is the percentage average of the results of the assessment of participants in the lecture planning. Semester Learning Plan or RPS is a learning plan prepared by the lecturer / team lecturer as a guide for students in carrying out lecture activities for one semester to achieve the learning outcomes that have been set. The results of the RPS assessment show

the completeness of the identity of an RPS course seen from several aspects observed with an average value of> 60%.

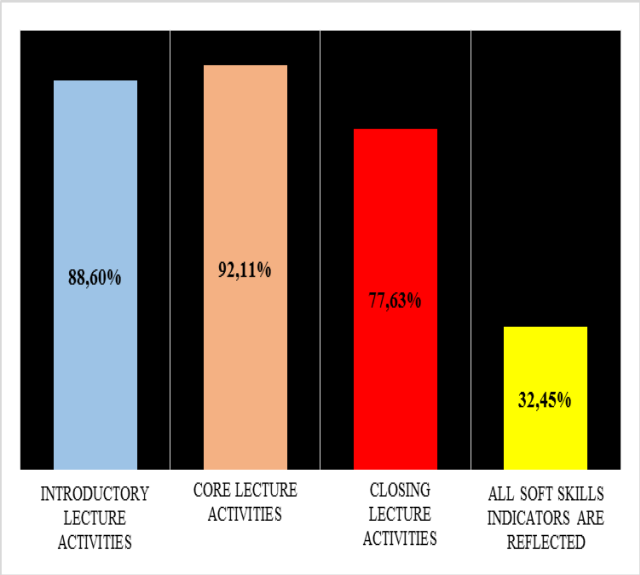

Figure 3. Assessment Result of Lesson Study Lecture Implementation Observation

Based on Figure 3, it is explained that the results of the class observation in 5 subjects each had an average score in each activity, namely 88.60% conducting preliminary activities, 92.11% doing the core activities of the lecture, 77.63% doing the closing activities, and there are 32.45% soft skills indicators which are reflected in the Semester Learning Plan (RPS).

CONCLUSION

Based on the results of the research data that has been done, the researcher can describe the professional development activities of lecturers/teachers based on lesson study. The results of the questionnaire on campus environment empowerment in lectures show that professional development of lesson study on lecturers/teachers is very important. This can be done with several types of supporting activities such as workshops, socialization of the implementation of lesson study, involvement of lecturers/teachers in lesson study activities and also seminars.

The lesson study activity is a collaborative, cyclical and sustainable process of professional development. Like the research that has been carried out based on three four-week lesson study and workshop cycles in Japan to develop and improve high school biology lessons on the circulatory system, it shows an improvement in the quality of learning (Chikamori, Ono, and Rogan, 2013).

Lesson study is one of the activities that can encourage the formation of a learning community by mutually improving themselves in delivering material to students. The purpose of the lesson study according to Myers (2012) lesson study is an activity to develop

professional lecturers/teachers to improve teaching and learning with collaborative learning, then reflect, determine its effectiveness and revise it, then repeat the process.

The ability to convey material to students can affect the achievement of soft skills so as to develop student soft skills. Some achievements of student soft skills that are identified in a learning are cooperation, perseverance, tolerance, respect for others, working optimally, leadership, problem solving and creativity. According to Dewiyani (2015) explained that the challenges in the field of education increased as a result of the increasingly complex expectations of society for higher education that demanded higher education in order to prepare graduates who have the ability of hard skills and soft skills. The author also found learning methods based on cognitive processes based on personality types proved to be effective in bringing up the attributes of soft skills for students, one of which is in solving a problem.

Be sides it, the development of soft skills can be directed to non-academic activities such as extracurricular activities, direct engagement assignments, and also conducting comparative studies. Hassan et al. (2013) revealed that soft skills are important in students 'lives, an educator has a major influence on the development of students' soft skills and plays an important role in shaping a person's personality.

In order to form a good personality from a student, an educator needs to develop a lesson plan in class. RPS is a learning plan prepared for learning activities for one semester in order to meet the learning achievement of graduates charged to a course/module. According to Sudiarta (2016) the teaching plan is a guideline for the learning process, it should clearly formulate the objectives to be achieved in the material or material to be taught, teaching and learning activities and the tools used, evaluation and reference sources in the form of reading books. Every lecturer is required to have the skills or skills in preparing the RPS and each lecturer who will teach should refer to the RPS that has been prepared in advance.

The preparation of RPS needs to be adjusted periodically with the development of science and technology. The results of developing the learning plan using the lesson study approach aim to develop students' thinking skills and learn to express opinions. These activities require time for students to express their opinions and innovative thoughts so that the research team can evaluate and reflect on the results of shared learning (Nesusin et al. 2014)

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THE EFFECT OF BEHAVIOR COGNITIVE COUNSELING WITH A MODELING TECHNIQUE ON THE AROUSING SELF POTENTIAL IN DIRECTING INDIVIDUALS IN THE ERA OF INDUSTRIAL REVOLUTION 4.0

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***Abstract*—** This study aimed at finding out the effect of behavior cognitive counseling with a modeling technique on the arousing of self potential in directing individuals in the era of Industrial Revolution 4.0 among high school students in Singaraja city, Bali. Based on the empirical findings, at present the students from elementary to high schools (junior high school/ senior high school/senior vocational school levels are experiencing degradation because of digital world negative influence that causes the positive self potential, that should have been experiencing a progress, to regress into a latent stage. The behaviors can be observed at present in the society in some events, such as in family members who are queueing in a certain place for an hour who do not communicate with one another because they are being absorbed with their own gadgets. The same event also occurs at the time of break at school. Hence this condition causes a low level of social interaction with each other or even with close people. Looking at this phenomenon, it is believed that young generation will face problems in keeping up with the era of industrial revolution in the future. This is not only caused by technology that has to be mastered but also by the great energy of self that supports it. Based on this problem, the arousal of self potential, that consists of the intellectual aspect and the non-intellectual ones are very potential and urgent to be trained through a quasi-experimental study of behavior cognitive counseling with a modeling technique. The sample was determined by random sampling. Through the quasi- experiment in a lesson study setting in such a way that there were learning interactions in the community among teachers, students, and the environment. Also, with the use of the modeling technique, one positive interactions could develop in arousing the self potential of the students. The results showed that there was an effective effect of the cognitive counseling with the modeling technique in arousing the self potential in directing oneself in the era of Industrial Revolution 4.0 (the tobs value of 20.29 and ES value of 3.37).

Keywords— behavior cognitive counseling, modeling, self

INTRODUCTION

It has become a common awareness that the world of Education is a way for humans to transmitting and transforming both value and knowledge. Character education for human is very important to building their moral compass, so to achieve it, we relay on education not only in theory but also practice. In Indonesia, character education has become an integrated part of formal education however its implementation has not been effective. This was seen from more severe juvenile act of delinquency. It was proven from frequent fights between students and often escalate into riots. This phenomenon can be a representation of the

weakening of Indonesian people's character, which is famous for being friendly, polite, and noble.

In essence, character personality is a picture of a person's attitude or behavior that can be seen from his words and actions. Personality is also referred to as a habit in humans and is used to act and adjust to all forms of stimulation, both from within and within the individual. Usually this personality is intended to interpret or give a different impression between an individual to others which is reflected in a characteristic unique to each individual.

Behavior can be formed through the process of implementing education. In school students are not only given intelligence development, but also characters that can show the character of the nation's children who are intelligent, polite, and polite. Existing student behavior is developed in accordance with the values and norms prevailing in the community with the aim that later after students can complete their education and return to the community, they can be accepted by the formation of good character and able to behave according to existing rules. Education is important in forming the character of the nation. Education is a human effort to foster a person's personality to conform to the norms or rules in society. According to Edward there are 15 human personality traits including achievement, differentiation, order, exhibition, autonomy, affiliate, intraseption, success, dominance, abasement, nurturance, change, endurance, heterosexuality, and aggression. Personality is also often considered a trait that can be measured and shown by someone.

Personality often signals the potential that exists within a person. Everyone has different potential. Self potential is considered as the ability and strength possessed by someone who can still be developed as life progresses. Potential is also classified in the form of basic abilities, work ethic, and personality. God created man as the most perfect being among His other creatures. This perfection is manifested in the form of the potential that exists within him to be developed continuously. Humans are created by conferring creativity, taste, and intention, this is what is considered as a basic potential in humans.

Through this potential, everyone is expected to be able to direct themselves in doing something. Directing yourself is a form of independence to be able to act in accordance with what is desired without influence from others. Moreover, in this revolution era, it is expected that everyone has been able to understand their potential to develop themselves through technology development.

In this fourth industrial revolution era, the development of technology and science is growing rapidly. These developments have a major impact on human life. This can be seen from the ease obtained by humans in this day and age, as if the world is held. Through the development of this digitization, everyone feels easier and more efficient. As if the machine is an inseparable part of the human self.

Prof. Schawab (2017), that the industrial revolution 4.0 has fundamentally changed the lives and ways of working of humans because it has a fairly broad environmental space compared to the previous industrial revolution. This industrial revolution has experienced several revolutions including, industrial revolution 1.0 which was marked by the discovery of steam engines to support production. What was originally all work depended on human power, when the industrial revolution 1.0 all turned to pure power. This results in mass unemployment. Furthermore, in the industrial revolution 2.0 with the discovery of electrical energy and the division of labor which produces large enough quantities of production. The existence of electrical energy stimulates scientists to find lights, telegraph machines, and conveyor technology. The industrial 3.0 revolution was marked by the birth of information technology and the production process that was controlled automatically. This is realized in

the form of computer-based systems. The technology created in this era was cameras, cellphones, and digital music.

Furthermore, the industrial revolution reached its peak with the proven birth of digital technology and the development of internet technology that has a major influence on human life in the world. Thanks to the internet, people from any part of the world can communicate well with one another. Many technologies are created thanks to the utilization of the inner potential to be able to see opportunities. This is evidenced by the many sophisticated machines that have sprung up like online transportation, smartphones, drones, vehicles with solar power, online shopping, and the emergence of communication systems such as whatsaap, instagram, facebook, tweeters and so on. It is this change that proves that human life changes fundamentally.

With the advent of the industrial revolution 4.0, it is hoped that humans will also be able to develop their inner potential to be able to direct themselves towards better things. Humans must be good at utilizing the development of information technology and science to be able to create the latest innovations. Most of the phenomena that emerge today are that humans are often controlled by machines like smartphones. Many hoaxes emerge due to the lack of understanding of humans using smart machines and lack of individual understanding of their potential. In the world of education there is a shift in student learning styles with e-learning/blended learning, the emergence of new jobs and the disappearance of several existing jobs. All of these changes have resulted in quite high competition among job seekers. Therefore education does not only print students who rely on intelligence alone but is strongly supported by the positive potentials of someone in themselves (Self). An example; These potentials include: A person who has high self-change tends to make changes by making innovations that can be utilized in life. A person who has a high self-achievement also tends to show a personality having high achievement motivation. Through this achievement motivation a person tends to be able to see opportunities, because of these opportunities will emerge innovation.

The use of self potential, by directing yourself is an individual opportunity to be able to face all the challenges that may arise. Like personality to endure facing and overcoming the obstacles (self-endurance) that must be owned by everyone in the midst of very rapid development. In addition to being able to withstand challenges or obstacles, in every human being must be instilled independence and responsibility (self-outonomy).

Current behavior can be observed in the community on several occasions, such as one family standing in line at a place in 1 hour with absolutely no communication because of the fun of each gadget. The same event also occurs when children break at school. Thus this condition causes a low social interaction with others or even with people who are close.

Students in elementary and secondary schools also get the impact of technological advances in the industrial revolution era 4.0. In education the industrial revolution is shown by the use of technology and internet-based learning facilities and media, such as LCDs, leptops, cameras, and so on. This is a positive impact of technological developments in the education system. In addition to learning, combined face-to-face learning with online systems. Online learning is commonly called e-learning/blended learning. This is an innovation in the learning system to meet meetings or face to face that might be missed. This is one of the lessons in the industrial revolution era 4.0 that utilizes information technology and internet networks.

However, there are also negative impacts caused by the use of smartphones. Currently students who are in elementary school and high school are already good at using smartphones. This sometimes leads to anti-social, which means that anti-social is that children tend to be

preoccupied with their cellphones, like to play their own games in the room, closeness to family and friends is reduced, and tends to show antipathy towards the surrounding environment. This needs to be an important concern both by parents and education.

Seeing these symptoms, it is believed that the younger generation will experience difficulties in following the development of the industrial revolution era in the future. This is due to not only technology that must be mastered but greater self-supporting energy. Based on this problem the generation of self potential, both covering intellectual and non-intellectual aspects is very potential and is immediately to be trained. Cognitively, an individual's mind is affected by rapid changes and impacts on the behavior shown. Examples of problems that arise in the community illustrate changes in mindset and behavior caused by the rapid progress that is not balanced by the use of opportunities and self-potential.

This needs to get more attention to get the right treatment. Based on changes in mindset and behavior shown, researchers chose to intervene with the Guidance and Counseling approach, using a cognitive behavioral counseling model pioneered by Aaron T. Beck. Cognitive behavioral counseling is a combination of two approaches namely beliefs or beliefs and disruptive behavioral strategies.

Cognitive helps individuals to learn to recognize and change mistakes. This cognitive is not only related to the formation of positive thinking, but also relates to happy thinking. Whereas Behavioral helps build relationships between problem situations and the habit of reacting to problems. Individuals learn to change behavior and calm the mind so they feel better, think more clearly and help make the right decisions.

Matson & Ollendick argued that the behavioral cognitive counseling model basically believes that human thought patterns are formed through a process of stimulus - cognition - response (SKR) series that are interrelated and form a kind of SKR network in the human brain. In addition there is also a belief that in human beings there is the potential to absorb rational and irrational thinking. Where irrational thinking has an effect that causes emotional disturbances and deviant behavior, cognitive behavioral counseling is intended to modify the function of thinking, feeling, and acting by emphasizing the role of the brain in analyzing, deciding, asking, acting, and deciding again. The counselee is expected to be able to change negative behavior into positive behavior by changing the state of mind and feelings. This is based on the view that the mindset and feelings that are formed will influence the formation of behavior in each person.

So the goal of cognitive behavioral counseling is to help counselees solve current problems but not forget their past by turning irrational thinking into rational so that later can influence negative action to be positive by aligning thinking, feeling and acting.

Human nature is easy to imitate the behavior of others, even in the technological age like today someone will easily imitate the behavior of others through a penalty. In order to balance the provision of counseling services to counselees, in this study a behavioral cognitive counseling model was applied, juxtaposed with modeling techniques. In addition, in the learning system researchers apply counseling theories and techniques with the help of lesson study. This is intended to facilitate students to obtain the process of providing innovative counseling services in order to build new understanding in the counselee to generate self-potential in self-direction.

Modeling is rooted in Albert Bandura's theory with social learning theory. This social learning theory is also often referred to as observational learning theory or observational learning or with observations. Modeling is a learning activity carried out through observation by adding or reducing observed behavior, generalizing various observations while involving cognitive processes in individuals who play a role in learning while learning occurs because

of the influence of the social environment. There are various types of modeling, namely: modeling new behaviors that are carried out through observations of socially accepted models so that individuals gain new behavior. Modeling changes old behavior by imitating the behavior of models that are not accepted in a social environment will strengthen or weaken behavior, depending on the behavior of the model being rewarded or punished.

According to Bandura "Modeling techniques are modeling observations, observing other people so that someone forms ideas and behavior, then is explained as a guide to action". Bandura also emphasized that modeling is a consequence of behavior imitating others from experiences both direct and indirect, so that emotional reactions and fear of a person can be eliminated.

As for other opinions, "modeling is learning through observation by adding or reducing observed behavior, generalizing various observations at once, and involving cognitive processes".

So that certain skills can be obtained by observing and imitating the behavior of existing models. The disturbed emotional reactions that a person has can also be eradicated by the way the person observes the approaching objects or situations that are feared without having the frightening consequences of the actions he does.

Based on some of the opinions above, it can be synthesized that modeling is one of the counseling techniques where a person learns to create and apply new behaviors through a process of observation, observing, generalizing the behavior of others (models), wherein this example also involves cognitive and creative processes rather than mere just imitate eyes.

Types of modeling according to Corey types of modeling are divided into three, namely: live models (real characterizations), symbolic models (symbolic characterizations), and multiple models (multiple characterizations). The modeling technique used aims to generate positive interaction in generating self potential in students.

The implementation of this counseling service is provided with the help of lesson study. Lesson study is an approach that is carried out collaboratively in learning through the stages of designing, implementing, observing, and reflecting learning. In the guidance counseling lesson study is used as an approach that can facilitate the implementation of counseling services through similar stages to increase interaction in the learning process.

So that it is expected that through the provision of services the cognitive behavioral counseling model with modeling techniques can evoke self-potential in self-directed in the industrial revolution era 4.0 in Middle School students in Singaraja City, Bali.

METHODS

This research is a quasi-experimental cognitive behavioral counseling with modeling techniques. The experimental design used is the Non-equivalent Pretest-Posttest Control Group Design. Dantes states that, in quasi research "intact group" is often used, like a class so randomization cannot be done.

The population in this study were Middle School students in Singaraja City, Bali. The research sample was determined by simple random sampling. Through quasi experimentation conducted in the lesson study setting so that in the community between teachers, students, and the environment both learning interactions occur. Likewise, including modeling techniques both live models and symbolic models can lead to positive interactions in generating self potential for students.

Data collection is a method used in research to find and collect data. There are many data collection techniques that can be used depending on the aspects studied, the data

collected in this study is the data generating self potential in self-directed in the industrial revolution era 4.0 in Middle School students in Singaraja City, Bali. To collect these data and to obtain accurate data, in this study using several data collection techniques and each data collection device, namely: (1) Questionnaire, (2) Observation Method, (3) Interview Method, (4) Diary (5) Recording documents.

Before testing the hypothesis, a prerequisite test must be carried out to determine the feasibility of the data to be analyzed. The prerequisite tests include normality and homogeneity tests. The following are presented by the two tests. The normality test of the data distribution was carried out by Kolmogorov-smirnov test with the help of SPSS-PC 20.0 for Windows. Then the variance homogeneity test was also performed using the F test. This test was conducted to find the homogeneity level of the control group and the experimental group. After the data is considered normal and homogeneous, the hypothesis is tested.

The analysis used in testing the hypotheses 1 and 2 is the comparative test of t-test or t-Brunning with the following formula:

$$t = \frac{M - \mu}{\sqrt{\frac{\sum x^2 - \frac{\left(\sum x\right)^2}{N}}{N(N-1)}}}$$

(1)

Information:

M = Mean of GSN experimental group

μ = Ideal Maximum Score x 65%

X = GSN value of the experimental group

N = Number of students in the experimental group

The next stage is the determination of Effect Size to find out how much effectiveness is obtained, then the following formula is used:

$$ES = t \sqrt{\frac{1}{n}}$$

(2)

RESULTS

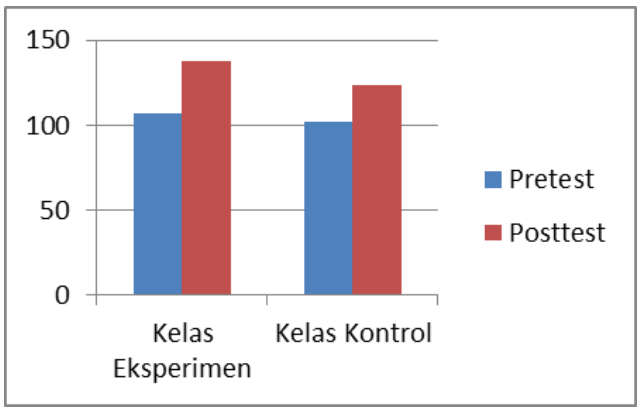
Data collection through observation is very necessary because researchers can get the initial data of the symptoms shown by students. The purpose of this observation activity is to find out the generation of self potential in self-directed in the industrial revolution era 4.0 in Middle School students in Singaraja City, Bali which is used as the dependent variable in this study. The results of the observation continued with conducting interviews to get more accurate data. Researchers also provide "Pre-Test and Post-Test" to students using questionnaires before and after "treatment" using cognitive behavioral counseling. Pre-test data is used to determine students who are in the high, medium, and low categories. This is done to strengthen the initial data of the observations already owned. Next the researcher determined the control class and experimental class by drawing it. Both groups were given a

questionnaire whose results would be pretest data. Furthermore, the experimental group was given treatments using behavioral cognitive counseling with modeling techniques, and the control group was not given treatment. The pretest and posttest scores from the experimental and control groups are as follows:

TABLE I. SCORES PRETEST AND POSTTEST

Statistic	**Eksperimen Class**		**Kontrol Class**	
	Pretest	***Posttest***	***Pretest***	***Posttest***
Mean	106.96	137.28	102.2	123.72
Modus	117	135	124	119
Median	113	138	111	120
Total	2674	3432	2555	3093

Table I. shows that there are significant differences in the mean pretest and posttest in both the experimental group and the control group. The average pretest in the experimental group obtained 106.96, after being given treatment cognitive behavioral counseling with the average posttest modeling technique from the experimental group increased to 137.8. And for the control group who were not given treatment the average pretest acquisition was 102.2 and the average posttest acquisition was 123.72. It can be seen that the experimental group given cognitive behavioral counseling treatment with modeling techniques experienced a higher increase compared to the control group who were only given conventional counseling and guidance services. The pretest posttest chart from table I is as follows



Graph 1. Results of the pretest posttest of the experimental group and the control group

The normality statistical test was carried out using the Kolmogorov-smirnov statistical test with the help of SPSS-PC 16.0 for Windows. The test was carried out on the unit of analysis consisting of experimental groups and control groups, Kolmogorov-Smirnov value

obtained was 0.838 with a significance value of 0.484. This significance value is greater than 0.05 so that it can be said that the null hypothesis is accepted. So the results of group research data that are given behavioral cognitive counseling with modeling techniques are normally distributed. Variant homogeneity test is done by F-test. This test is done to find the level of homogeneity of the experimental group and the control group.

Test criteria reject H_0 if $F_{count} < F_{table}$. The test was carried out at a significance level of 5% with the degree of freedom for the numerator n_1-1 and the degree of freedom for the denominator n_2-1. The results of the analysis above F_{count} = 2.62 with a significance level of 5% with F_{table} = 4.26 then the variable data obtained between the experimental group and the control group were declared homogeneous.

Data analysis in this study includes quantitative data analysis, which is an analysis based on the quantitative value of independent variables (Cognitive Behavioral Counseling) on one dependent variable (Generating Self Potential in Directing themselves in the Industrial Revolution Era 4.0). Data analyzed using t-test or t-test to determine the effect of independent variables on the dependent variable seen from differences in pretest and posttest and gain normalized scores.

The sound of the hypothesis in this study is that there is an influence of behavioral cognitive counseling with modeling techniques on self-potential generator in directing themselves in the industrial revolution era 4.0 in Middle School students in Singaraja City, Bali. In testing this hypothesis, researchers used cooperative t-test calculations. Based on the t test value above obtained t_{count} of 20.29, with a significance level of 0.05 then 20.29 5 0.05 so that it can be concluded Ha is accepted. From the results of these comparisons it can be concluded that the results of the study are stated to be significant, it can be concluded that "cognitive behavioral counseling with modeling techniques influences the potential of self-potential in self-directed industrial revolution 4.0 in Middle School students in Singaraja City, Bali".

After obtaining the t_{count}, the calculation is continued by looking for the effect size to measure the effectiveness level of cognitive cognitive counseling by modeling techniques for self potential generator in directing themselves in the industrial revolution era 4.0. based on these calculations obtained the ES = 3.37. So it can be said that the influence of behavioral cognitive counseling with modeling techniques on the potential of self-potential in self-directed in the industrial revolution era 4.0 in Middle School students in Singaraja City, Bali is in the very effective category.

Practically, the implementation of behavioral cognitive counseling with modeling techniques both live and symbolic models influences the potential self-generating plant in the industrial revolution era 4.0 in Middle School students in Singaraja City, Bali. It is also based on the personality of high school students who are easily influenced and imitate things that are considered new and liked. In this 4.0 industrial revolution era, everyone is expected, including students, to see opportunities as well as utilizing social media for useful things such as creating inspirational content that can be watched by many people who usually appear on YouTube, Instagram, Facebook, and other social media. Use a smartphone or leptop to search for information related to lessons in school or even to do online learning (bleanded learning). This is an example of the use of opportunities that exist in the current revolution era.

In the industrial revolution era 4.0 this provides a very broad opportunity for anyone. Technology that is increasingly accessible to anyone and anywhere is able to connect

everyone in any part of the world. As predicted by Futurologist Alvin Tofler (1970) that the flood of information becomes a reality found in the industrial revolution era 4.0 as it is today. Abundant information provides great benefits and opportunities for the development of science and the economy.

For the millineal generation the current 4.0 industrial revolution era not only brings opportunities, but also brings challenges. The challenge that must be faced is the role of humans will be replaced by machines. Therefore, through cognitive behavioral counseling, this modeling technique can generate the self potential of high school students in the millineal generation. Through the potential of self, everyone is able to direct themselves with the challenges that arise and can change the challenge into an opportunity. Someone who has good achievement motivation (self-achievement) tends to be good at seeing opportunities by utilizing their own potential to form new innovations at this time. In addition, it is expected that in this era, everyone has independence and responsibility (self-outonomy) of all the mindset and behavior chosen. Directing yourself with the potential you have is the key to someone being able to overcome challenges in the industrial revolution era like today.

CONCLUSION

The results showed that there was an influence of cognitive counseling with modeling techniques effectively in increasing the generation of self-potential in directing themselves in the Industrial Revolution 4.0 in Middle School students in Singaraja City, Bali. This is evidenced by the value of t_{count} = 20.29 and the value of ES = 3.37. The implementation of this treatment is provided with the help of lesson study with the intention of collaborating in learning through the stages of designing, implementing, observing, and reflecting on learning. In the guidance counseling lesson study is used as an approach that can facilitate the implementation of counseling services through similar stages to increase interaction in the learning process.

In this era of industrial revolution 4.0, someone who has high self-achievement motivation tends to be good at seeing opportunities by utilizing their own potential to form new innovations that can be used by many people. In addition, in this era, everyone must have independence and responsibility for all beliefs and behaviors chosen. Directing yourself with the potential you have is the key to someone being able to overcome challenges in the industrial revolution era like today.

The suggestions that can be given by researchers to educators or other researchers is that they can implement and develop the provision of cognitive counseling services with modeling techniques to generate the potential that exists in each person to be able to deal with future challenges. As in the learning process, the use of learning approaches or methods is not suitable when using conventional methods without media that can attract students' attention to learning. With the development of information technology in this era, it is expected that educators can see good opportunities in the process of providing learning. Like giving learning by setting lesson study to enhance good collaboration with related parties. For other researchers that can develop similar research to find new things that can be developed and utilized together to be able to accept future challenges.

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DEVELOPING AUTHENTIC ASSESSMENT TROUGHT LESSON STUDY BASED LEARNING

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Abstract. The authentic assessment is the process that can provide an overview of students' development. This study conducted on how to develop authentic assessments applied to the lesson-study based learning in the Faculty of Teaching and Education Pasundan University. Efforts to develop authentic assessments in lectures have been carried out since 2017 and the results is authentic assessment have not been implemented optimally. The aim of this study is to obtain an authentic assessment model or guide for lectures. Sample in this study is the lecturer of science class at Primary School Teacher Education Departmen. This is a Research and Development (R & D) research. Workshop and focus group discussion (FGD) were conducted to formulate and make authentic assessment instruments on lesson study-based learning. The instruments used are quisionare sheets, RPS, semester learning plan, worksheet of the lessson study, and interview guides. Data is analyzed by descriptive statistics. The result is that most of the lecturers have been able to formulate the plan of lecture, lesson design based on authentic assessments, and open lesson videos. Further research will be conducted on the dissemination of research results on lectures at FKIP Unpas.

Keywords: Authentic Assessment, Lesson Study

INTRODUCTION

The lesson study is essentially a significant effort to improve the quality and professionalism of lecturers in facilitating the learning process designed as an important part of internal quality assurance towards the pedagogical competence and professionalism of the teacher or lecturer. Lesson studies involve groups of teachers or lecturers who meet regularly over a certain period of time (from a few months to a year) to work on the design, implementation, testing, and improvement of one or several specific material topics based on the principles of collegiality with the aim of improving learning. In this activity educators discuss problems or obstacles experienced during the learning process and find solutions. There are at least some obstacles experienced by students in the learning process, including:

1) Limitations of student knowledge both at the level of concepts and practices on the spirit of collaboration.
2) The lack of sharing of experience among students.
3) Reflecting on the learning process so far is still in the realm of concept understanding, has not yet reached the stage of how the concept was applied.

4) The assessment that has been carried out by the lecturers is still considered insignificant, by some of the students the scores only open the numbers obtained from the results of the written examination.

In an effort to overcome these problems, a research was carried out in the form of an implementation plan of authentic assessment at lesson study-based lectures conducted in five subjects at the Primary School Teacher Training Study Program of Teaching and Education Faculty at Pasundan University.

Authentic assessment is an assessment process that can provide a comprehensive picture of the development of student learning outcomes including cognitive, affective, and psychomechanical aspects. Regarding the definition of authentic assessment, some researchers have different views. Authentic assessment is an assessment of performance in the learning process. But there are those who argue that there is a difference between performance appraisal and authentic assessment. The difference between the two is that each authentic assessment is a performance appraisal, but not vice versa. Authentic assessment can build a valid and accountable assessment result. This means that the results of this assessment can truly interpret the abilities of students during the process and after the learning process. Therefore assignments given to students should be able to describe the competencies needed in the assessment. There are five interrelated aspects to implementing authentic assessment of learning, namely:

1) Tasks or assignments that accommodate the cognitive, affective and psychomotor aspects of students. The assignments also must be meaningful to them.
2) The classroom environment or place of learning should be able to support students to be able to explore and optimize their abilities, both on the cognitive, affective and psychomotor aspects. Learning should be designed by giving an overview of the conditions or situations that students will experience when they become professionals.
3) Social interaction. Activity factors in the social environment are divided into two types, namely collaborative activities, and individual activities. In collaborative activities, authentic assessment is obtained from seeing interactions between students in solving a problem. Whereas in individual activities, authentic judgments are done by looking at how each student competes and tries to solve problems individually.
4) The result of authentic assessment is a genuine assessment that describes the overall ability of each individual. The results of the assessment can take the form of a product or an idea from students.
5) Authentic and authentic assessment standards. As for criteria and authentic assessment standards, assessment is transparent, assessment focuses on the abilities or competencies that students must possess, and assessments are carried out using rubrics or portfolios.

To support the activity of applying authentic assessment on lesson study-based lectures, workshops and Focus Group Discussions (FGD) were held which aimed to provide insight and guidance for lecturers in formulating semester lecture plans (RPS) and preparing teaching materials (lesson design and chapter design). Through this activity also, the RPS and teaching materials that have been made will be reviewed, if there are no indicators or aspects of authentic assessment in the RPS and teaching materials, it will be corrected together. The hope with this activity can be produced a semester lecture design (RPS) and

instructional materials in the form of lesson design and chapter design that are appropriate to implement authentic assessments at lectures based on lesson study.

METHOD

This study is a Research and Development (R & D) research with qualitative research methods towards the achievement of planning and implementation of authentic assessment at lectures based on lesson study. Data were analyzed by descriptive statistical techniques. The sample used in this study is 30 participants consisting of state and private elementary school teachers, and lecturers. The instruments used were questionnaires, semester lecture plans (RPS), lesson study learning tools, and interview guides.

RESULTS

The results of the study were the formulation of the lecture curriculum in the form of semester lecture plans (RPS), lesson study learning tools (lesson design, chapter design) based on authentic assessment and also the open lesson video. The results of the questionnaire regarding the importance of applying authentic assessment in lesson study-based lectures to improve the quality of learning indicate that around 85.3% of participants stated that professional development of lesson study on lecturers / teachers is very important. 70.5% stated the importance of authentic assessment achievement in class. The new teacher / teacher professionalism development and development activities were developed around 30.65%. While the activities carried out in observing teaching / teacher learning are around 15.7%. 60.33% stated that with lesson study learning can provide a positive influence for lecturers / teachers. The results of the questionnaire can be seen in Figure 1.

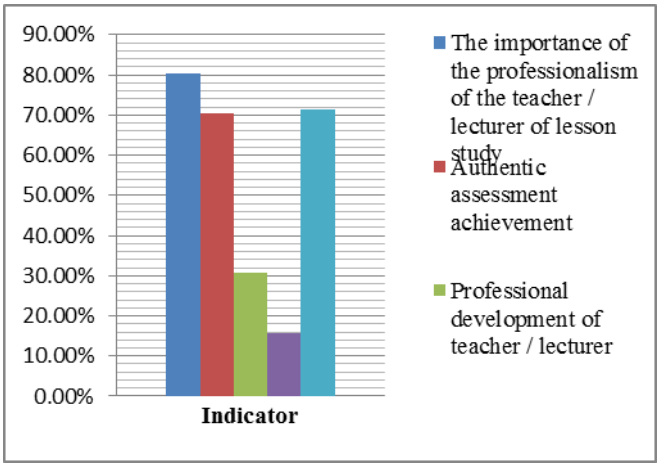


Figure 1. Results of analysis of questionnaire sheets

The results of the semester lecture plan analysis (RPS) that have been made in the workshop activities on each authentic assessment indicator in lesson study learning in 5 subjects namely educational statistics, classroom management, andragogy, elementary learning media and Basic Concepts of SDA are as follows: 1) 81.5% of lecturers / teachers

have raised aspects of authentic assignment to the RPS; 2) 72.57% of lecturers / teachers have written on the RPS the learning environment settings or classes that support the application of authentic assessments; 3) 78.5% lecturers / teachers have developed learning methods that enable optimal social interaction; 4) 75.6% of participants agreed that the assessment contained in the RPS was in line with the application of authentic assessment; 5) 78.2% of participants agreed with the authentic assessment criteria found in the RPS. The results of the Participant Assessment of Lecture Planning can be seen in Figure 2.

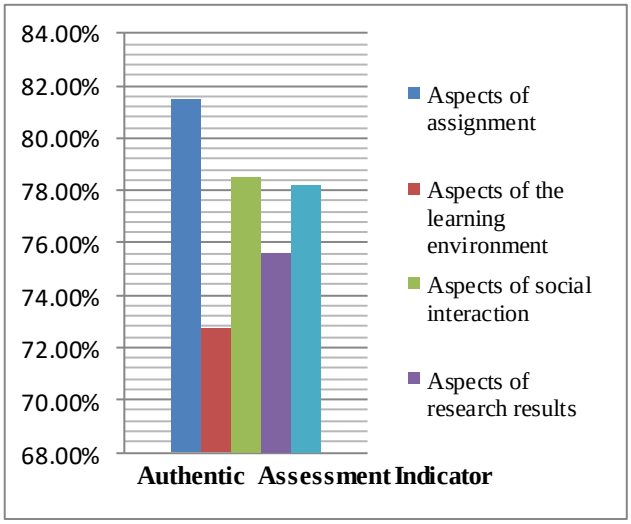
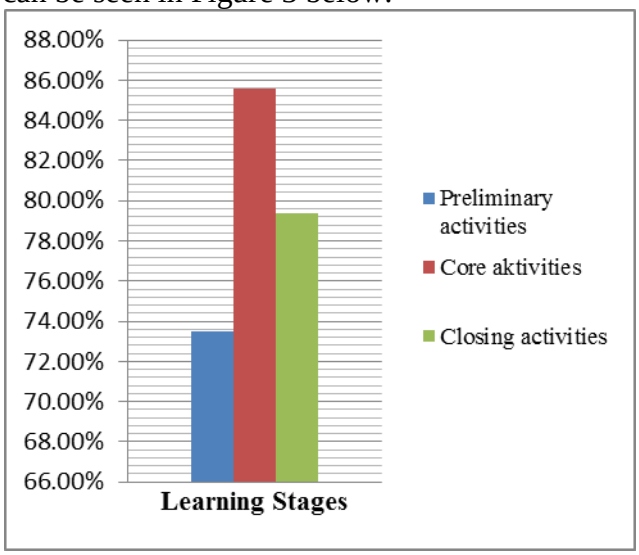


Figure 2. Results of Participant Assessment of Lecture Planning

While the analysis of observations on the application of authentic assessments at lesson-based lectures can be seen in Figure 3 below:



Based on Figure 3 it can be seen the average score of the application of authentic assessment on 5 lesson study based subjects is 73.50% seen in the preliminary activities, 85.60% seen in the core activities, and 79.40% seen in the closing activities.

CONCLUSION

Based on the findings of the research that has been done, it shows that the importance of developing the professionalism and quality of lecturers or teachers, especially in learning. It is intended that the quality of learning that is presented can always continue to increase. One of the activities that can be done to improve the quality of lecturers or teachers is by conducting lesson study-based learning.

Lesson study can improve the quality of learning by building knowledge collaboratively. The effectiveness of lesson study-based learning does not only apply to new teachers but also affects senior teachers who are classified as experienced as an effort to improve self-competence. However, in its implementation it is necessary to have full support from all parties, including stakeholders and require a short amount of time so that it demands seriousness and consistency.

Authentic assessment conducted on lesson study based learning shows the results that most of the indicators in the application of authentic assessment have been illustrated in the semester lecture plan (RPS). An indicator of authentic assessment in the most significant learning seen is the aspect of assignment. This is possible because most of the lecturers have been accustomed to concocting a lesson by giving a task that is relevant to the problems that will be experienced by prospective teacher students. Like the task of making learning media. While the learning environment aspect is the lowest aspect compared to other aspects. One of the causes of this indicator is not yet optimal because of the absence of a school laboratory. The existence of a school laboratory is considered important because its function as a place for students to develop their knowledge can provide a real experience of a problem and can create a professional network. School laboratories can be used not only by students as a place of learning, or by lecturers to make an authentic assessment.

Observations made to see the application of authentic assessments in the lesson study-based learning process show that authentic assessment indicators have been seen in the learning carried out, especially in the stages of core activities and closing activities. The teacher gives contextual problems to students and makes students become active to discuss. This allows each aspect of authentic assessment to be described. Whereas in the preliminary activities, the lecturer has not been seen maximally in bringing up an authentic assessment indicator. From this description it can be concluded that lesson study-based learning can be used to develop the application of authentic assessment in learning. Authentic assessment in a learning process is important to note because authentic assessment can provide a comprehensive or comprehensive picture of students' abilities, be they cognitive, affective, or psychomotor. Authentic assessment conducted by the lecturer also turned out to be able to improve students' problem solving abilities because during the learning process the lecturers always provide real tasks or problems.

To be able to apply authentic assessment optimally, lecturers or teachers should be able to plan learning well. So that the learning done will become more measurable and directed. A good learning plan is a learning plan in which there are clear learning objectives, there are indicators of achievement, subject matter, media and also the methods to be used, and the last is evaluation of learning outcomes. In addition, there needs to be a place or forum to discuss and evaluate how to implement a learning plan that has been made so that it can run as expected. This activity can help teachers or lecturers to learn and understand things more quickly.

Considering that the lesson study activity is an activity to increase lecturer professionalism in Indonesia which is relatively new, the constraints that have been and may appear in the implementation need to be anticipated and alternative solutions are sought, so that these activities can be more carried out by more lecturers so that quality improvement which is expected to be more quickly realized. These constraints include: (1) the existence of misperceptions from lecturers who can make activities unable to run continuously and properly because of lack of enthusiasm and lack of commitment from team members; and (2) technical problems such as scheduling, funding, class setting, and documentation.

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ANALYSIS OF COLLABORATIVE CULTURE IMPROVEMENT THROUGH LESSON STUDY FOR TEACHER

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Abstract. This research aimed to explain the analysis result from the analysis of collaborative culture improvement through lesson study for the teacher. The subject of this research was the mathematics teacher in junior high school number 1 Palembang. This was descriptive quantitative with survey method. Data were obtained through observation and questionnaires sheets. Data analysis was using the qualitative study to explain mathematics teachers did collaborative culture improvement that happened after the four steps in lesson study in junior high school number 1 Palembang in topic Number Pattern. There were four steps in the lesson study; they were the plan, do, see, and redesign. At the first meeting with mathematics teachers of junior high school 1 Palembang in topic Number Pattern, there were some problems such as not all the teacher want to do the "lesson study" in their class, hard to find the right timing to do "plan" steps because mathematics was quite a lot of class hours, and it was difficult to determine the right context in the application "lesson study" in the class. The constraints experienced were of course initially enough to prevent the teacher from created a collaborative culture that was demanded in lesson study. Using lesson study gave positive impact to the collaborative culture of mathematics teachers in junior high school 1 Palembang. Positive impacts that arise include each teacher who was involved in the process "plan" to explained facts, ideas, and suggestions on the design of learning tools in topic number pattern to make them better. And it gave a good impact on the improvement of the learning process in the classroom.

Keywords: Lesson Study, Collaborative Culture, Number Pattern

INTRODUCTION

Current education has an important role in every aspect of human life. Mathematics is one of the principal subjects are very important for every studied by learners. This is proven by anyone learning math from elementary school, junior high school, senior high school, and University. Through the learning of mathematics, students are required to be able to think critically, logical, systematic and careful consideration in resolving the problems facing. Teachers have an important role to be able to meet the demands of the learning of mathematics. The demands of the development of the curriculum also demands a teacher to give a memorable and exciting learning in accordance with the standard process that has been set.

Number Pattern is an important subject in mathematics. One of the learning of mathematics' competence Permendikbud No.21, 2016 on standard content is describing a pattern up at daily life and give a repeat pattern based on its allegations. But in fact, students experience a lot of difficulties in resolving problems such as pattern numbers. The difficulties experienced by students such as no student is able to write down the formula of

the tribe to tribe formula but n-to-n is the spearhead of the early learning of pattern numbers (Sari, et al, 2016), difficulties in terms of mathematical modeling where students asked to observe a phenomenon and turned it into the shape of its mathematical model (Marion, et al, 2015), the difficulty in finding the main idea that you want from the student's problems and also difficult to make generalizations on the material public abstract pattern number (Sodikin,2010; Handayani, Putri, & Somakim, 2015).

One of the factors in the cause of the trouble students can be seen from the habit of teaching and learning is applied to teachers. Teachers tend to encourage students to memorize concepts and formulas and patterns of the lesson in the form of delivery of knowledge from teacher to student (Sato, 2014; Putri, 2018). The learning process like this is certainly less interesting for students. So teaching mathematics to be corrected in order to be fun for the students, instruction should begin with what is understood by students (Ahmad, 2015). This is also conform with Permendikbud No. 22 th 2016 on standard Process that learning should be organized in an interactive, inspiring, fun, challenging, motivating learners to participate actively, as well as provide space that was enough for the initiative, creativity, and independence in accordance with their talents, interests, and physical and psychological development of students.

Lesson study is a model of the coaching profession of educators through the study of collaborative learning and sustainable based on the principles of mutual learning and collogues to build a learning community (Rusman, 2010:380). Lesson study is not a method or learning strategies, but the activities of the lesson study can apply various methods or learning strategies appropriate to the situation, conditions, and issues facing teachers. Lewis (2002) mention that the idea contained in the Lesson Study is actually short and simple, that is, if a teacher wants to improve learning, one of the most obvious way is to collaborate with other teachers to design, observe and do a reflection against the learning done. This collaboration is necessary because of the expected input will be more improvements that indirectly will be able to improve the quality of learning. The issue is: "How can improve culture of collaboration for teachers in junior high school 1 Palembang on material Number Pattern?

Through Lesson Study, professional teacher development process aims to improve teaching and learning by collaboratively planned lesson, delivering learning, reflect on its effectiveness, refine them, and then may repeat the process again.

According to Listyani, et al (2008), Lesson Study is a collaborative activity from a group of teachers together to: (1) planning the steps of learning that will be taught, (2) one of the selected teacher to practice learning planned and others observing the learning process, (3) evaluate the learning that has been carried out, (4) improve the planning of learning that is still lacking, (5) implement again, (6) back to evaluate learning, and (7) divide the experience and findings of the evaluation results to other teachers.

There are four stages of the lesson study: "Plan-Do-See-Re Design" (Sato, 2014)

1. Stage Plan

   This stage aims to produce a draft study is believed to be capable of learned students effectively as well as to arouse the students' participation in learning. In the plan phase, namely learning to be implemented must be planned and carried out together with other teachers, in order to create an atmosphere of collaborative and exchange opinions.

Usually defined first who educators who will be the Teacher (Model), then the teacher model devised its lesson plan. Educators then meet and share ideas on perfecting the design of the learning that has already drawn up the teacher models how to produce learning materials, organizing the learning process, as well as the completion of the learning tools that are considered best. At this stage also set procedures observations and instruments needed in observation. All the learning that is planned at this stage will be simulated before being used on the stage of implementation (do).

2. Stage do
   This stage is intended to implement the planned learning design. One of the group members act as teachers model and the rest of the Group observe. The focus of the observation is directed at students with learning activities based on the procedures and instruments that have been agreed at the planning stages, rather than on the appearance of the educators who are in charge of teaching. For learning to take place, the observers are not allowed to interfere with the learning process even though they may be recorded with a video camera or a digital camera. The main purpose of the presence of the observers is learning from the ongoing learning.
3. Stage see
   This stage is intended to find the advantages and disadvantages of implementing learning. Educators who serve as model teachers initiated discussions with conveying his thoughts and impressions about the implementation of learning. The next opportunity is given to educators who served as an observer. The observer team will provide input to the teachers-add a solution to the shortcomings of the teaching done at the time to repair in the next instruction. Criticism and suggestions submitted wisely without degrading or irritate the learned educator, everything for the sake of improvement of practices in the future. Based on all input can be rethought the next better learning (Rock & Wilson, 2005).
4. Stage redesign
   This stage is intended for improvement of the draft and the documentation by teachers involved in the three previous stages. At this stage could also be agreed upon return on lesson plan improvement, or any other instruments.

METHOD

The subject of this research was the teacher of mathematical subjects in junior high school 1 Palembang. This research was descriptive research with qualitative research method used is survey method. The data obtained through observation sheet and questionnaire. Qualitative analysis of data used to describe an increase in the culture of collaboration that occurred after he had done four cycles of lesson study subjects by teachers of mathematics in junior high school 1 Palembang on the subject of pattern numbers.

RESULT

In the preparation phase, researchers take care of the administrative completeness that must be met before plunging into the field. After the necessary files were complete, researchers visited the school where data retrieval. Researchers selected schools was Junior high school number 1 Palembang. Researchers met with teachers of subjects mathematics class VIII and did a brief discussion to get the necessary information as well as a research instrument in the form of sheets indicate observation and question form. Investigators also contacted the head of the junior high school number 1 Palembang to permit implementation of the socialization of Lesson Study for Learning Community (LSLC) prior to performance of critical stages in the LSLC (plan, do, see, re-design).

First step, implementation of socialization and training Lesson Study for Learning Community (LSLC). LSLC training and socialization was carried out after obtaining permission from the head of the junior high school number 1 Palembang. Brazing in socialization and training was Ratu Ilma Indra Putri. The participants of this training and socialization in attendance was 37 people consisting of 22 teachers of junior high school number 1 Palembang, 15 students of from Sriwijaya University Undergraduate program. The result of socialization and training was a State of teachers of junior high school number 1 Palembang agreed to form Learning intercultural field of study teacher Community.

Figure 1. Socialization of the Lesson Study for Learning Community (LSLC)

Second step, stage Plan aims to produce a draft study is believed to be capable of learning students effectively as well as to arouse the students' participation in learning. In the plan phase, namely learning to be implemented must be planned and carried out together with other teachers, in order to create an atmosphere of collaborative and exchange opinions. Collaborative atmosphere will be created when the teachers actively involved in the planning process of learning device (lesson plan, Students activities of Sharing Task and Jumping Task, evaluation, observation sheets) together.

At the start of a joint meeting of teachers of mathematical subjects in junior high school number 1 Palembang design tool of learning towards the subject of pattern numbers, there were some problems include: not all teachers are willing to participate in the implementation of lesson study in class, It was hard to find the right time to do the process design jointly remember the math is one of the subjects that have hours of lessons are pretty

much so many teachers who are unable to attend even though already determined time , and it was difficult to determine the context of the pas in implementation of lesson study in class.

a. Stage Plan

Mathematics teachers in junior high school number 1 Palembang began to implement phase of plan after problems were found in the early implementation stage of the plan can be overcome. As for the results obtained, among others, the preparation and development of learning collaboratively have been conducted in accordance with the principle of LSLC a model coaching profession educators through the study of collaborative learning sustainable and based on the principles of mutual learning and colleagues to build a learning community (Rusman 2010:380).

All of the teams involved in the stage of Plan namely teachers subjects Mathematics grade VIII have discussed the purpose of the meeting and the learning objectives in the lesson plan, the number of meetings in pattern numbers topic, determination of teachers model, the context which will be used to enhance the liveliness and the ability of students in learning, discussion on media that can support the smooth running of the learning process, questions to be used in Sharing tasks, jumping task, and evaluation, as well as the preparation of the observation sheet.

After execute stage plan collaboratively together with a team of teachers of subjects Mathematics 8th grade junior high school number 1 Palembang, the teachers involved feel has increased in terms of the culture of collaboration. It was inferred from the data that has been filled by the teachers in question form has been given. 100% of teachers felt that experienced a good improvement in a variety of ways, including: the ability to select the right learning methods, insights in the use of contextual issues, ability and skill in drawing up the instrument of learning, skill in communicating orally and in writing, ability to using ICT as a means of communicating, directional in behave and speak the word, more often evaluate themselves and develop themselves independently and sustainably, insight as educators, the ability to find solutions of problems, skill in conveying the comments and suggestions, the ability to design learning activities that are interesting in the lesson plan, the capability of putting together an interesting students activities of sharing task and Jumping Task challenging, and the ability to compose a question of evaluation can measure students' ability appropriately and in accordance with the purpose of learning. 96% of teachers felt gained a lot of input from the implementation phase of the Plan and the ability of cooperation with other teachers has increased. In addition, the teachers involved also felt that with the Collaborative Learning each of these subjects will give impact on the learning of students in the classroom is becoming more active.

Figure 2. Doing Plan by Team of Mathematics teachers

Based on the results of the above can be said that after the formation of Collaborative Learning and implementation stage of the Plan, the culture of collaboration among teachers in junior high school 1 Palembang has increased.

b. Stage do

Figure 1. Students activities in stage do

Teachers model who were chosen to do this number pattern topic were Rizky Erwiyangkia S.Pd. After stage do were done in number pattern topic di grade 8th, we got some result are all observer stated that there were some important thing in learning devices that has designed by all teachers in Mathematics team of Junior High School 1 Palembang need to redesigned. Teachers model were not teach standalone because in some part, she needed help from other teachers in her team. Observer that worked in this stage has working stand alone and according to their rules.

CONCLUSION

Each process will surely find the barriers, included in the planning process that has been implemented by the teacher grade 8 Mathematics subjects in junior high school 1 Palembang. By stage plan that has done show that there has been a culture of collaboration. Teachers who incorporated in team teaching mathematics in Junior high school number 1 Palembang has worked together to compiling learning device and observation that was needed in stage do. All teachers assumed that the culture of collaboration among teachers has increased, the ability of each teacher in drawing up and developing learning devices has increased, the ability of communication and cooperation between teachers also experienced an increase. Teachers suggest lesson study continue to apply in their school so collaborative culture between teachers can be increased more and more. Teachers feel convinced that learning in the classroom will become more active and give a positive impact against the capabilities and the results of student learning.

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PROBLEM BASED LEARNING TO ENHANCE STUDENTS' COLLABORATIVE SKILLS

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Abstract. Collaborative skills are one of the 21st century skills that students should have in the era of industry revolution 4.0. Hence, innovative efforts are required in conducting the learning process especially in higher education and problem based learning is one of instructional strategies that can be used for this purpose. This research focused on designing problem based learning to improve collaborative skills in the aspects of interpersonal, group management, and inquiry skills. The method used was design based research because this research would like to develop students' active learning to improve collaborative skills. This research involved undergraduate students taking Learning Materials Development course and resulted in chapter and lesson designs that were validated through expert judgment.

Keywords: problem based learning, collaborative skills, chapter design, lesson design

INTRODUCTION

This research is based on the unrest faced by the researchers in relation with the increasing demands of society towards university graduates while on the other hand their soft skills development is still low. In this 21st century, which is also dubbed as 4.0 industrial revolution era, it is not just about digital technologies but also digital knowledge (Gleason, 2018). This change occurs as humans have finally been able to develop huge capacity to store computer data.

Living in the 21st or in the fourth industrial revolution era requires the abilities to face challenges and solve problems. Sufficient provision is necessary to win the competition. Todays students belong to the digital natives, those that are no longer need to adapt to technology and who can automatically operate technology at the basic level. Educators thus should know very well how to deal with students in this group.

The 21st century skills have onnections with each other and the framework of the 21st century learning describes the interconnections between the competencies that must be owned. Success in life and career cannot be separated from excellenct academic ability and technology and literacy abilities. In education, there are four learning skills that must be constantly honed and improved which include critical thinking, creativity, communication, and collaboration skills (P21 Framework for 21st Century Learning, 2008). These 21st century sills become the key to success in academic development.

In the era of sophisticated technology where needs can be met easily, people tend to become easily individualistic. This is why collaboration skills are important for students to have. This concept of collaboration stems from organizational development which focuses on team work in working (Plucker et al, 2010).

Collaboration is often interpreted as the same as cooperation, but these two terms have differences. Collaboration is a concept that means "a personal philosophy" on the basis of building (Roselli, 2016; Panitz in Hernández, 2012). Dillenbourg in (Hernández, 2012) added that collaboration involves two or more people to share responsibilities, jointly decide on actions, and act together to learn about something. Collaboration emphasizes the process of working together in achieving a set goal. Collaborative learning provide opportunities for students to engage in group discussions and be responsible for the learning process being carried out (Ghokale, 1995). Collaboration is not only done between students, but also with other parties as well as the surrounding environment.

Collaboration consists of a number of skills that must be honed in order to become skills that are constantly embedded in students. Bosworth (1994) explains that collaborative skills include interpersonal skills, group management skills, inquiry skills, conflict skills, and presentation skills, which can be seen in the following table.

Tabel 1: Taxonomy of Collaborative skills

1. Skill Category	2. Collaborative skills
3. Interpersonal skills	4. Congenial, friendly, Make clear statements, listening skills, positive communication, eye contact
5. Group management	6. Organize work, keep group on task, run a meeting, participate in group – self analysis, show empathy
7. Inquiry skills	8. Clarification, critique, probe assumptions and evidence, probe implication and consequences, elicit view point & perspectives
9. Conflict	10. Prevention, resolution, mediation
11. Presentation	12. Summarize, synthesize, speaking in front of a group, creating presentation materials, report writing.

The use of learning strategies is required to improve the collaborative skills. Problem-based learning (PBL) is a learning process in which a problem is raised as a basis for discussion in order to create a sense of involvement and curiosity and to encourage the attempt to seek, find and compile questions. These will create the ability to confront problems encountered, actively seek information, be proactive on a given task, have the motivation to complete goal-oriented tasks, and to think analytically, divergently, and synthetically (Oon-Seng Tan, et al, 2009).

Although problem-based learning is not a new approach in the implementation of learning strategies, it becomes something new when combined with other types of development such as internet use and learning materials. The implementation of PBL involves issues in the society, active engagement, learning through interdisciplinary, and collaborative learning (Oon-Seng Tan, 2003). As illustrated below, Oon-Seng Tan further explained the components used in PBL approach, which was used as the basis of this research.

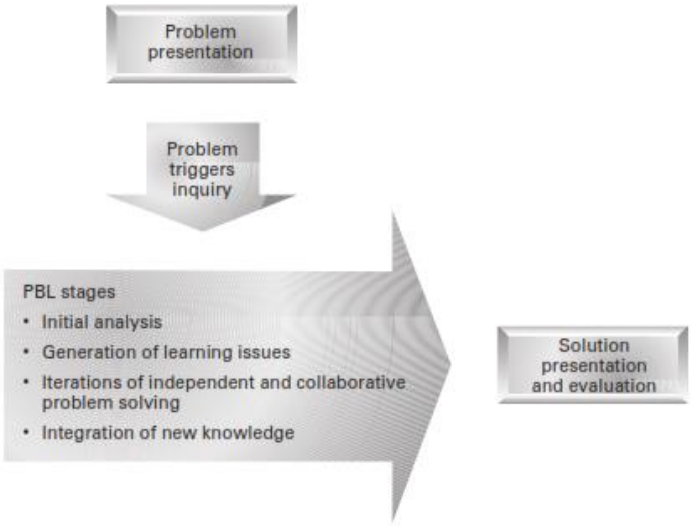


Figure 1: Components of PBL Learning Approach

The above picture shows that PBL begins with raising problems as triggers for finding the information needed. Furthermore, PBL learning is conducted through several stages: 1) *Initial analysis, 2) Generation of learning issues, 3) Iterations of independent and collaborative problem solving, and 4) integration of new knowledge* (Oon-Seng Tan, 2003, p. 32).

As previously explained, collaborative skills need to be continuously improved in the learning process, especially in universities. This is so that graduates can be accepted in various fields of work and are able to cooperate with various parties in achieving the stated goals. For this reason, this research focused on improving collaborative skills in only three aspects: interpersonal skills, group management skills, and inquiry skills which were applied using PBL learning strategies as illustrated by Oon-Seng Tan.

This research aimed to first indentify students' collaborative skills at the beginning of learning, followed by developing a learning design consisting of chapter and lesson designs using PBL approach. In the learning process, students' engagement and collaborative skills were observed to ensure the improvement.

METHOD

This study employed design based research (DBR), that is a research paradigm that can be used in the context of learning and is a systematic design in researching about learning strategies and the tools used (Hsiu-Ting Hung, 2011; Lidinillah, 2009; The Design-Based Research Collective, 2003). DBR is suitable to be used in this research because the research emphasizes on how to design learning that can improve student collaborative skills through problem based learning.

The stages of DBR are the followings: 1) Identifying and analyzing problems; 2) Developing learning design based on problem analysis; 3) Conducting iterative process to

test and improve solutions practically; and 4) Reflecting to produce a final design that can improve the desired results.

In this study, the stages had only reached the development stage in which a PBL design that can improve collaborative skills was created and judged by experts. The PBL learning design was arranged to be applied to students taking Learning Material Development course in Educational Technology study program.

The data was analyzed based on the study of learning theories underlie PBL and the basics of learning design and juxtaposed with the results of expert judgement of the design.

RESULTS

Initial Condition of Students' Collaborative Skills

The learning process is essentially a process of interaction between students and lecturers, with their peers, and with their environment. To be able to make effective interactions and which provide good results, it is necessary to design a plan so that students are involved in the learning process.

One skill that can be prepared and fostered in order to make students work together is collaboration skills. To measure students' improvement on collaborative skills, an initial study on students' collaborative skills was carried out by using questionnaire. The initial study indicated that the students' collaborative skills were already exist, only need to be enhanced.

Students' interpersonal skills were mainly on moderate level with 36.34%. These skills include the abilities to be friendly, to make clear statements, listening skills, positive communication, and making eye contact while speaking.

Students' group management skills generally fell into good category with 43.95%. These collaborative skills include group self-analysis, showing empathy, organizing tasks, making group focus on task, and organizing meeting.

Students' inquiry skills were generally on moderate level with 45.13%. These skills consist of five aspects including critical in commenting, investigating implication and consequence, clarifying, investigating assumption and evidence, and gaining perspective. The data of students' initial collaborative skills are presented in the table below.

Tabel 1 Initial Condition of Students' Collaborative Skills

Collaborative Skills	Assesment Category			
	Poor	**Moderate**	**Good**	**Very Good**
Interpersonal Skills	8.68%	36.34%	35.52%	19.46%
Group Management	4.69%	35.31%	43.95%	16.05%
Inquiry Skills	1.95%	45.13%	42.62%	10.31%

PBL Learning Design to Improve Collaborative Skills

Based on the results of the preliminary study, it was found that in general the students' already owned collaborative skills although some specific skills still need to be developed. The material development course entails collaborative skills because every

assignment given to students will result in products developed in groups and individually. The course is one of the compulsory courses that must be taken by students of Educational Technology study program and is one of the competencies that must be possessed by the graduates of Educational Technology study program. The learning design developed focused on how to give students an understanding about the types and characteristics of teaching materials. The sub learning outcomes and the indicators to be achieved are presented in the following table.

Table 2. Sub learning outcomes, core lessons, and learning activities

Sub Learning Outcomes	Core Lessons	Aktivitas Pembelajaran
Explain the definition and principles in material development.	Types and Characteristics of Teaching Materials	1. By watching video and searching articles about the concept of teaching materials, students can describe the nature of teaching materials. 2. By analyzing a journal article, students can find forms of plagiarism and types of copyright.
Identify the types and characteristics of teaching materials	Characteristics of teaching materials.	1. By using textbooks and reading materials available on the market, students can analyze textbooks and reading materials in accordance with the principles of material development. 2. Through group discussions students can formulate the indicators of assessment instrument for textbooks and reading materials.

The sub learning outcomes of material development course refer to the learning outcomes of the study program that have been determined, which is in line with Permenristikdikti Number 44 of 2015 concerning the National Standards of Higher Education (SN-DIKTI). The learning outcomes set for this course are that students are expected to be able to show responsibility for their work in the field of educational technology independently and have special knowledge and skills in developing and managing media and learning resources.

In order to achieve learning outcomes well, the learning process needs to be designed using various learning strategies that are directed towards active student learning. Morever, PBA course emphazies on products that must be created by students and therefore the selection of learning strategies will further support the matery of their abilities. Another thing that is emphasized in the course learning process is how students can work together, collaborate with peers, have insight and knowledge, and produce teaching materials as the products.

Previously, the learning activities that were carried out to provide students with initial knowledge were lecturing and question and answer session, in which students' engagement was still low. Students still motivation and coercion so that they want to be actively involved in the learning process. Whereas the challenges in this industrial revolution era are extraordinary, even soft skills become more dominant than hard skills. In various countries, such as China, a variety of educational innovation is carried out by preparing soft kills that are one of the important concerns in the development of human resources. Enhancing collaborative skills is one of the efforts that can be done to develop students' soft skills.

To provide concept understanding, insight and knowledge about the materials development course, especially in the materials of concept, types and characteristics of teaching materials, problem based learning is used as the learning strategy. In early sessions, concept mastery and understanding of teaching materials need to be given to students. In this case, cooperation and collaboration are required to further develop their competency mastery. For this reason, PBL is considered sufficiently effective to improve students' collaborative skills. It is one of the alternative strategies that can be used to improve collaborative skills (Cook & Walsh, 2012; 9]Oon-Sing Tan. 2009, Oon-Sing Tan. 2003). The advantages of using PBL in learning includes the requirement for collaboration between students in delivering various alternative solutions to the problems presented, listening ability, conveying problems and solutions that are clearly proposed, cooperation, and respecting the opionions of others (Bosworth, 1994).

In this research, the innovation of learning design was arranged in the form of chapter design and lesson design (Fatimah et al, 2018). The lesson design focused on improving students' collaborative skills through PBL, students' activities in the class, and prediction of actions expected from the students.

Lesson Design

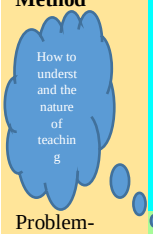
Materials: Concept of teaching materials: (1) Definition and principles in preparing teaching materials, (2) Types, characteristics of teaching materials, and the process, (3) General procedures for developing teaching materials in the form of textbooks.

Course Objectives

1. By watching a video and searching articles on the concept of teaching materials, students can explain the nature of teaching materials.
2. By analyzing a journal article, students can identify forms of plagiarism and types of copyrights.

Table 3. Problem-Based Learning in Improving Collaborative Skills

Essential Concept Types and Characteristics of Teaching Materials	**Opening Activities**	**Main Activities**			**Kegiatan Akhir Evaluation**	**Siswa Akhir pembelajaran**
		Initial Analysis	**Generation of Learning Issues.**	**Generation of Learning Issues.**		
	Today globalization and blasting of science and technology have become an integral part of life. What is your opinion?	Video Show Watch the following video!	Today the development of technology helps grow a variety of teaching materials available for use in learning. • Students elaborate types, characteristics, and process of selecting teaching materials. • Students present the results	Students work in groups and were given sample writing materials to identify copyrights and plagiarism of teaching materials.	Students summarize the lesson. Closing.	

			of their discussion		
Method  	**How is the condition of teaching materials development in Indonesia?**	**What do you think of teaching materials?**	**Mention types of teaching materials!**	**Cognitive** • Students select sample writing • Students identify examples of copyright violations and plagiarisms.	Akhirnya saya memahami tentang bahan ajar, dan dapat menganalisis bahan ajar yang sesuai dengan karakteristik peserta didik.
Problem-Based Learning	• Information and knowledge can be obtained anywhere, but to check the truth requires sufficient knowledge.	**Cognitive** • Students watch a video • Students take notes of small things they notice in the video.	**Cognitive** • Students analyzing references on characteristics and process of teaching materials.	**Collaborative skills** *Interpersonal skills*: Students are harmonious, communicate positively, and make eye contact.	
Assessment • Worksheet • Log book	Materials can be searched and found on the internet in various ways.	**Interpersonal skills:** • Students harmoniously become closed with each other, communicate positively, and make eye contact during group collaboration.	**Collaborative skills** • Interpersonal skills: Students are harmonious, communicate positively, and make eye contact with their peers. • Inquiry skills: Clarifying, giving criticism, proving assumption and evidence, proving implications, describing views and perspective.		
			Integration of New Knowledge	**Presentation**	
	Changes and developments affect the curriculum, which in turn affect the reading resources that must be corrected.	**Group building**: • Organizing work, keeping the team focused on work, participating in doing group self-analysis, and showing empathy.	Students are given reinforcement about concepts, types, characteristics, and the process of selecting teaching materials.	Each student is given the opportunity to present the results of identification of examples of copyright use and plagiarism.	
	What about the availability of teaching materials in schools?		**Cognitive** Students listen to reinforcement given by lecturer about the concepts, types, characteristics, and the process of selecting teaching materials.	**Cognitive** • Students present the results of their identification on copyright sample use and plagiarism.	
- 	The low capacity of teachers in developing teaching materials encourages teachers to buy books and workbooks available in the market.	Students are noisy, do not pay attention or give adequate response.	*Interpersonal skills*: Students are harmonious, communicate positively, and make eye contact with their peers.	**Collaborative skills** • *Interpersonal skills*: Students are harmonious, communicate positively, and make eye contact. • *Inquiry skills*: clarifiying, giving criticism, proving assumption and evidence, proving implications, describing views and perspectives.	

The above table illustrates the learning design developed which refers to lesson study system. In this process a lecturer must know the problems faced by students so that the learning design process can be tailored to the learning needs of students. As previously stated this learning design focuses on how to design learning using PBL approach in order to improve students' collaborative skills, which in this case focuses on interpersonal, inquiry, and group management skills of the five collaborative skills developed by Bosworth (1994).

In the learning process, stimulations were given variatively through video shows, article analysis, worksheets and learning diary writing. PBL allows students to sharpen their collaborative skills, which are very important to make the results of the learning process traceable 16](Thorsten et al, 2010).

RESULTS

The learning design uses PBL approach as learning strategy. An expert judgment is required to see whether the lesson design is suitable with students' needs. The experts include lesson study expert and content expert.

The assessment focuses on chapter and lesson designs developed as well as on the content of learning materials. The results of the assessment are given below.

Table 4. Results of Expert Judgment

13. No	**15. Assesment Elements**	**16. Assesment Results**	
14.		**17. Expert-1**	**18. Expert-2**
19. A	**20. Suitability of Learning Design**	**21.**	**22.**
23. 1	24. Chapter design shows the order of the materials delivered.	25. Appropriate	26. Appropriate
27. 2	28. Lesson design describes suitable and systematic learning stages.	29. Less challenging	30. Appropriate
31. B	**32. Suitability of Learning Objective Formulation**	**33.**	**34.**
35.	36.	37.	38.
39. 1	40. Formulation of CPM has been compiled based on the CPPS chosen to facilitate learning achievement.	41. Appropriate	42. Appropriate
43. 2	44. Formulation of indicators is prepared to achieve critical thinking skills.	45. Appropriate	46. Appropriate
47. 3	48. Formulation of indicators has shown collaboration activities.	49. Appropriate	50. Appropriate
51. B	**52. Suitability of Materials**	53.	54.
55. 1	56. Learning materials chosen are in accordance with the chosen learning strategy.	57. Appropriate	58. Appropriate
59. 2	60. Learning materials are selected according to	61. Appropriate	62. Appropriate

	learning needs.		
63. C	**64. Learning Process**	65.	66.
67. 1	68. Selection of PBL learning methods supports the development of collaborative skills.	69. Appropriate	70. Appropriate
71. 2	72. The use of SPOT helps students to learn more actively.	73. Appropriate	74. Appropriate
75. D	**76. Selection of Evaluation Instruments**	**77.**	**78.**
79. 1	80. Evaluation techniques are selected based on the stated objectives	81. Appropriate	82. Appropriate
83. 2	84. Evaluation tools are selected based on the stated goals.	85. Appropriate	86. Appropriate
87. 3	88. Evaluation procedures selected can show students' learning outcomes during the learning process.	89. Appropriate	90. Appropriate

The results of the assessment suggest that learning design is suitable with the learning outcomes specified. However, in devising chapter design and lesson design, it is necessary to develop more creative learning that can foster students' abilities and collaborative skills.

CONCLUSION

This research suggests that conducting learning that is in accordance with students' needs require an analysis followed with designing learning suitable with the results of the analysis in order to obtain expected the expected outcomes. Although learning is naturally situational, if it is designed well and systematically, it will produce the expected learning outcomes.

Initial analysis reveals that students already have collaborative skills, but still need improvement in the aspects of interpersonal, inquiry, and group development skills. These skills are essential to be developed as they will facilitate other skills needed to complete a job.

The use of problem based learning (PBL) can improve collaborative skills because it encourages cooperation, giving opinions and respecting each other's opinion, and giving attention when others speak. In group work, PBL promotes cooperation, empathy, and active participation in analyzing materials given. Hence, the learning design developed is expected to be able to improve students' collaboration.

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LESSON STUDY IMPLEMENTATION USING PROBLEM BASED LEARNING (PBL) MODEL AUDIO VISUAL MEDIA TYPE

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Abstract, The purpose of this study is to describe the application of lesson study by using problem based learning (PBL) learning model type audio visual media in PPKn subjects to improve problem solving skills in vocational students. This type of research is qualitative with descriptive method. Research subjects were students of Class XI Marketing 2 SMK (Vocational High School) Pasundan 1 Bandung City. This research data is based on plan, do, see. Data processing with triangulation techniques. The conclusion of the research results is the implementation of lesson study using the problem based learning (PBL) model of the type of audio visual media carried out according to the stages in the lesson study namely plan, do, and see. Lesson study contributes to a more mature learning planning process, so the model lecturers feel more prepared in the implementation of learning. Effective lesson study can improve the quality of PPKn learning in vocational schools. The implementation of a well-designed lesson study can make model lecturers more creative and innovative.

Key words: Lesson Study, Problem Based Learning (PBL), Visul Audio Media

INTRODUCTION

The vision and mission of Civics subjects is to form a good citizen, so in addition to covering the dimensions of knowledge, the characteristics of Civics subjects are marked by giving emphasis to the dimensions of attitudes and skills of the state. So first, attack citizens need to understand and master complete knowledge about the concepts and principles of politics, law and moral civics. After mastering knowledge, then a citizen is expected to choose his attitude and character as a good citizen. And have citizenship skills in the form of participating skills in the life of the nation and state as well as the skills to determine self-position and life skill.

Citizens who understand and master the knowledge of citizenship (civics knowledge) and civic skills (civics skills) will become competent citizens. Citizens who understand and master the knowledge of citizenship (civics knowledge) and civic values (civics values) will become citizens of self-confidence, while citizens who have understood and mastered civics skills will become citizens who has a strong commitment. Then a competent citizen. Citizens who understand and master the knowledge of citizenship (civics knowledge), civics skills, and civics values will become knowledgeable, skilled and personable citizens. Broadly speaking, the characteristics of Civics subjects are reflected in the scientific structure of Civics subjects.

Based on the findings of the curriculum study (in the Ministry of National Education, 2007) shows that there is an imbalance in the domain of Civics competency as the content of

KD for each SK both in elementary, junior high and high school. In these three types of education, the aspects of attitude and behavior that are the main basis of PKn teaching are proportionally less compared to the realm of knowledge. For SMA, only 7 (12.96%) KD included affective and 7 (12.96%) KD including temporary behavior for knowledge 109 (69.4%) KD in the cognitive domain, so from the curriculum study for high school level the conclusion was greater cognitive aspects (knowledge) than behavioral attitudes so that there is an inconsistency with the PKn's holy mission which aims to shape the character of citizens, because it is only based on the assessment of cognitive aspects, not on the affective and psychomotor aspects. In addition the teacher still teaches more to pursue targets that are oriented towards the final exam scores, this relates to the formation of character, morals, attitudes and behavior of students who only want good grades without being balanced with improvements in the character, moral, attitude and behavior of the child.

Problem Based Learning is a learning approach by comparing students to practical problems in the form of ill-structered, or open-ended through stimulus in learning (Fogarty, 1997). According to Duch (Yunus, 2016: 162) Problem Based Learning is a teaching model characterized by the existence of real problems as a context for learners to learn critical thinking and problem solving skills and gain knowledge. Whereas Finkle and Torp (1995), Problem Based Learning is a curriculum development and teaching system that simultaneously develops problem-solving strategies and the basics of knowledge and skills by placing students in an active role as an unstructured daily problem solver. So Problem Based Learning is a learning that aims to direct students to be able to think about everyday problems related to life.

Trisdiono (Daryanto & Syaiful Karim, 2017: 1) suggests that the 21st century learning system is a learning transition where the curriculum developed today requires schools to change the learning approach centered on educators (teacher-centered learning) into participant-centered learning approaches didik (student-centered learning). This is in accordance with the demands of the future world where students must have thinking and learning skills. These skills include problem solving, critical thinking, collaboration, and communication skills. All of these skills can be owned by students if educators are able to develop learning plans that contain activities that challenge students to think critically in solving problems. Activities that encourage students to work together and communicate must appear in each lesson plan they make.

Azhar Arsyad (2016) stated "Media in the perspective of education is a very strategic instrument in determining the success of the teaching and learning process. Because its existence can directly give students its own dynamics. Audiovisual media is a medium that combines visual and sound in its delivery. "

The 21st century learning system is a learning transition where the curriculum developed today requires schools to change the learning approach centered on educators (teacher-centered learning) to learner-centered learning approaches (student-centered learning). This is in accordance with the demands of the future world where students must have thinking and learning skills. These skills include problem solving, critical thinking, collaboration, and communication skills. All of these skills can be owned by students if educators are able to develop learning plans that contain activities that challenge students to think critically in solving problems.

METHOD

This type of research is qualitative using descriptive methods. The subject of the research is students of class XI Marketing 2 of SMK Pasundan 1 in Bandung City. The data of this study is the implementation of plan, do, and see lesson study on Civics subjects. Data is collected according to participant principles, observation, and field notes or documentation. Meanwhile, the research data source is the result of observers observers on open class activities.

Examination of the validity of the research data was carried out through triangulation techniques. In this study, triangulation techniques are used by utilizing researchers or other observers for the purpose of re-checking data confidence. For the validity of the data, the implementation of lesson study in the Civics lessons is collected according to the stages of the plan, do, and see lesson study.

Data analysis techniques in this study were carried out with the following steps. First, collecting all research data, ranging from plan, do and see in Civics subjects. Second, classify data based on the division, starting from plan, do, and see based on the activities that have been carried out at each meeting. Third, inventory data in the form of recordings / videos of the implementation of plan, do and see activities in the lesson study. Fourth, linking research data from plan, do and see. Fifth, describe lesson study data based on the findings of the study, which are then concluded from the results of the research that has been done.

RESULTS

Problem-based learning model should be a solutive learning model in the current generation, students are required to argue and express their views on a problem that occurs, and if we look again at the phenomenon of our nation is now a crisis smart society in participating in solving the nation's problems Negara Indonesia, because of this is the young generation that is students educated with problems and also how to solve them through a problem-based learning model that gave birth to potential civil society who always participate in the environmental sustainability of the community.

Based on the results of the questionnaire data, the problem-based learning model also relates to the 21st century learning system which has the character of a system that requires students to be able to think critically, cooperate, be communicative, and also have creativity or innovation. Moreover, Civics learning is where the goal is to provide capital to the younger generation regarding national and state values so that when it's time to live within the community, it can become a stereotype of intellectual intelligences and behavior.

Civics must be loaded with meaning, so the plan to improve student learning must be strategically thought out, but in this case the learning model is very important and influential in realizing meaningful Civics learning because of how students can act as citizens which is good if the knowledge of the student does not understand, eating is where the important role of the learning model is how to package material or knowledge that is easy to understand interesting, innovative and full of meaning which is then conveyed to students so that the impact will result in intelligent young generation intellectuals and attitudes and generations that will become leaders of this nation in the future.

CONCLUSIONS

Based on the results of the research that has been described previously about the role of problem based learning (PBL) through audio visual media in implementing 21st century learning in Pancasila education subjects and citizenship in Pasundan 1 Bandung Vocational Schools, and complete observation, documentation studies, interviews, and questionnaires can concluded as follows

1. Problem-based learning model is considered to be very effective in realizing the main objectives of Civics learning and 2013 curriculum demands which are full of character education.
2. Model Problem Based Learning through audio visual media is able to motivate and make students enthusiastic in Civics education learning.
3. Model Problem Based Learning through audio visual media can stimulate students' thinking power to analyze and solve the problems they face both within the school or community environment.
4. With indicators or competencies in the Problem Based Learning model indirectly have helped implement 21st century learning.
5. In applying the learning model must be in accordance with the interests or characteristics of students so that when teaching and learning activities are more effective and efficient.
6. Teaching and learning activities will feel passive or lack of enthusiasm from students if a teacher does not apply innovative learning models.
7. With the Problem Based Leaning model through audio visual media learning is more innovative, interesting and does not saturate students. Because learning activities are more oriented towards the students to the meaning of the material, besides that the learning is more quality because the learning activities are centered on the students as the teacher is only as a facilitator.

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THE INFLUENCE OF LESSON STUDY IN MATHEMATICS LEARNING ACTIVITIES IN PROCESS CLASS 7C JUNIOR BPI 1 BANDUNG

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Abstract. The world of education has become the main focus of government attention in Indonesia at this time. One of the steps that the government has taken for the world of education in Indonesia at this time is by improving the national curriculum. Where the main focus of this national curriculum is how to improve the quality of the learning process of teachers and students in the classroom. This is in line with the program proposed by Lesson Study. Lesson Study is not a method or strategy in teaching and learning activities, but it is an activity carried out by a group of teachers in the same subject (MGMP) in an effort to improve the process of teaching and learning activities of teachers and students while in the classroom collaboratively and continuous. In Lesson Study activities, teachers can discuss, choose and apply various learning models to be applied in the classroom, through three stages, ranging from plan, do, and see. The purpose of this writing, the author wants to share experiences about the role of Lesson Study in influencing the teaching and learning process that has been done in BPI 1 Bandung Middle School, especially in Mathematics subjects in 7C class. The results of this Lesson Study activity showed very satisfying results, ranging from learning activities that became more interesting, resulting in active, creative and meaningful learning.

Key words: Lesson Study, Plan, Do, See, Reflection

INTRODUCTION

Badan Perguruan Indonesia (BPI) Foundation is the formal education institution that starts from Play Group to Kindegarden level, Elementary, Junior High School, Senior High School and Vocatinal High School. BPI 1 Bandung JUNIOR HIGH SCHOOL is a private school in the city of Bandung which had been established since 70 years ago. The vision and mission of the founders of the BPI Foundation at that time was to help public education around the city of Bandung, which at that time was still difficult to get a formal education. As one of the pioneers in the world of education, BPI 1 Junior high school Bandung wants to continue to improve the quality of education by producing excelent students. In creating alumni who are top achievers, it is required some support in the process of the education. Starting from power support and infrastructure, professional teachers and learners in the readiness of learning activities

As a private school, BPI 1 JHS Bandung has diverse students' family background. This is caused by the students who entered BPI 1 JHS Bandung are those who are rejected from public school because their score in "national Exam" are inadequate. On the other hand, there also parents who are "BPI minded". These parents are the one that felt very comfortable with the facilities and services that is provided. It can't be denied that these background diversity creates an impact which affects the process of learning. For example,

there are often some students coming to classrooms in conditions not ready to learn, they only come to school without motivation to learn, and to participate in teaching learning activity.

Since long time ago, mathematics is known for being the most difficult subjects, dreadfull, and horrible. This condition cannot be blamed entirely to students, the role of the teacher as a facilitator and motivator in the class has a very strong role and importance in the success of the learning process in the classroom.

In accordance with the vision and mission of the Government in supporting the 21st century learning Curriculum through 2013, the teacher is required to create an active process of learning, fun and critical thinking. The method of learning like this is extremely difficult, especially for teachers who are accustomed to do the learning process processed with the transfer system, science teacher became a center of learning information and dominate. This may be caused by the lack of knowledge the teacher will methods and strategies in learning.

Through Lesson Study, the commitee at the Foundation BPI expects the teachers can enhance the professionalism of the lesson with discussion and collaboration with fellow teachers the same subjects (MGMP) to prepare a study in class by the way enable and optimize the MGMP Subjects as a container or means of discussions in each school unit, so will the pace of active learning, critical thinking, fun and meaningful.

Lesson Study is not a method or strategy in learning activities, Lesson Study is an activity undertaken by a group of teachers on the same subjects in MGMP containers in an effort to improve the process of learning activities teaching the teachers and students were in the classroom when a collaborative and sustainable. In the activities of Lesson Study, teachers can beriskusi, selected and implemented various models can be applied to learning in the classroom through 3 stages, starting from the plan, do, and see (reflection).

Therefore, in this best practice, the author wants to expose the author's experience in the implementation of Lesson study in JUNIOR BPI 1 Bandung on grade 7 Mathematics subjects in the title "**the influence of Lesson Study in Mathematics Learning Activities in Process Class 7 c JUNIOR BPI 1 Bandung** "

METHOD

According to Hendayana Sumar (in the Directory File UPI) Lesson Study is a model of coaching (training) the profession of educators through the study of a learning collaborative and sustainable based on the principles of kolegalitas and mutual learning for the building a learning community Lesson Study is not a strategy or method in learning. Lesson Study is an activity in an effort to improve teacher mentoring process and learning outcomes conducted collaboratively and continuously. In Lesson Study teacher can select and apply a range of learning strategies and models to suit the conditions, situations and problems faced by either teachers or students.

According to Yoshida (Rismawati. in 2012) as for characteristics of Lesson Study as follows. (1) Lesson Study gives a real opportunity to teachers to witness teaching (teaching) and learning (learning) in the classroom. (2) any other unique characteristics of Lesson Study is that Lesson Study keep students has always been the heart of the teacher's professional development activities. (3) other characteristics of Lesson Study is that he is a driven professional development of teachers.

Slamet Mulyana (in Akhmad Sudrajat. 2008) featured about two types of conducting Lesson Study, i.e. school-based Study Lesson and Lesson Study based MGMP. School-based Study lesson involving all teachers subjects who are in school, the principal or supervisor, it aims to improve the quality of the learning process and the results of pembelajarandari all subjects in schools concerned. While the Lesson Study based MGMP is a study about the learning process that is implemented by a group of teachers of certain subjects, by deepening the study of the learning process on certain subjects, which can be implemented at school level, region, County or more broadly.

RESULTS

Stages of Implementation

This Open lesson activity held on 26 October 2016 in class 7-C with a material discussion is **"Algebraic Form Multiplication Operation"**. This is the steps that we did.

1. Plan (Planning)

a. Formation of Lesson Study

The formation of Lesson Study in junior high BPI 1 Bandung based on existing MGMP with the number of members of the group as much as 3 people

b. Determine the learning objectives

This step is actually an early step of the entire process of Lesson Study and is the most important part of Lesson Study. On this occasion the team in JUNIOR HIGH SCHOOL mathematics MGMP BPI 1 Bandung highlighting the Standard Kopetensi ketuntasan benchmark is a Graduate study. From the results of the discussion of the MGMP ditetapkanlah material "Algebraic" as the essential material is often a problem for students in solving on Mathematical lessons.

c. Determine the Teacher Model

After determining the problems and determine the learning objectives, most importantly at this stage is to choose the model teachers will demonstrate learning. On this occasion, penulislah that the opportunity to perform as a teacher model.

d. Planning Study

MGMP team devised a plan of learning in the form of Lesson design/Lesson Plan, Learning Scenarios, or proceed with the drafting of the Administration-administration as drafting blueprints of the seated students, tools and materials that will be used at the time includes CATEGORIZED learning (Student Worksheet), sheet postes and props. No less important, preparation of Administration for such conduct, obeserver format observation and student floor plan sitting prepared.

(Process of preparing Lesson Plan/Lesson Design)

2. Do (Execution)

On Wednesday, October 26, 2016 Open Lesson activities implemented. Before the Teachers model and observer to the class. First Lesson Study team MGMP doing briefings in advance with the observer, the observer code of conduct and related technical implementation in the classroom.

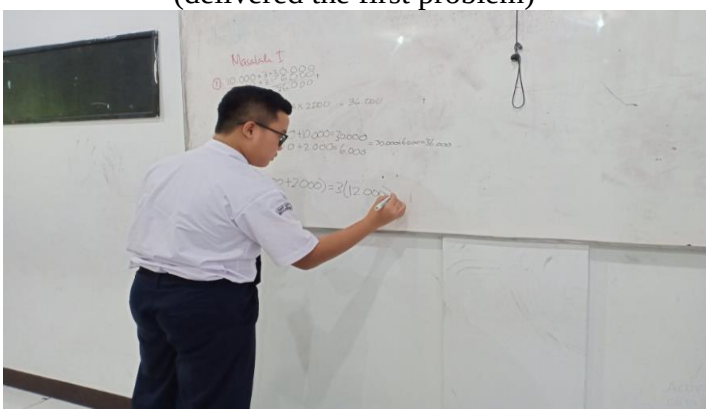
(briefing prior to the implementation of the Open Lesson)

Before starting the learning activities, students sit the blueprints laid out in such a way to allow the observer to observe, i.e. by forming the seats do not stick against the didinding class. Because the observer will stand next to the left/right pesera educates or front to observe the behaviour of a facial and my face and communication from one student against another student with much clearer.

On learning activities, introduction begins by saying a greeting, mengabsen attendance and remind the previous material related material will be held that day.

The teacher gave a stimulus with a jar of fruit 6 showed three of them contains money each IDR 10,000.00 and three other jar contains money IDR 2,000.00 each. Then the teacher asked the students to decide how to count the money in the jar with 3 different ways. The teacher pointed to 3 students who each have a different way of settlement. The students then expose and explain their answers.

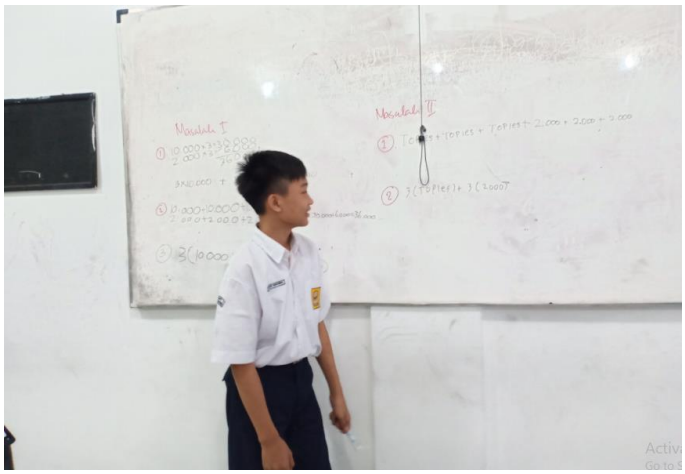
(delivered the first problem)



(students write down the ways on the issue to-1)

After the first issue answered, teacher gives again the problem 2. Three jar containing money USD 10,000.00 closed with a paper so it does not seem the money was in it, while the 3 jar containing money USD 2,000.00 still left open. Then the teacher asks a question, "without the need for us to find out how the nominal money in a closed jar, how about the way we add up the sixth tolples fruit? Please you guys answered with at least 3 different ways ".On this second issue, students have started to feel confused and ask the teacher to explain the question asked.

After the teacher gives additional explanations, the students begin to understand and perform experiments. Theacher ask 3 students who have three different settlement and how they explain their discovery results



(students explaining the results of their findings on the issues)

On the 3rd problem, the teacher closes sixth jar with paper cover so, invisible value of money in the jar, and the teacher ask the same question like 2 problem before. "Now all the jars was closed, create 3 different ways to add up the jar's sixth". Because students have started to understand the patterns of problems first and 2nd, on the 3rd of this problem of students not already having trouble understanding the instructions given by the teacher.

After the completion of the 3rd issue passed by the students, then on the next process, students work in groups to complete problems that have disiapan in the student Worksheet

(the stage of discussion in the Group)

When you're done with group activities, representatives of students from each group presented the results of its discussions in front of the class. Learning activities and ends with a post test

3. See (Reflection)

Reflection activities initiated by the teacher model for delivering impressions during the learning process. The impression that the author at the time it was worried, worried the learners can not capture the essence of the problems presented, worried the learners do not have creative ideas to be delivered, so that learning is not successful. But the results outside of the allegations, the students who are in class under the groups even give a dazzling appearance. Their involvement in the study was so active and did not come out from the core of the problem.

After the finished model teachers convey the effects, this time the observer the opportunity to convey the impressions and messages, as well as learning what they've (the observer) acquired over the learning activities processed conducted

B. Barriers

The following obstacles we faced during the activity:

1. Offer time teaching which is more than 24 hours, makes it difficult for teachers to meet in the MGMP, so that to prepare 1 open lesson, take a long time.
2. Lack of knowledge of learning models and learning strategies, make us being slow in deciding on the learning scenarios that we will use
3. In early minutes students feel uncomfortable with a lot of observers, so they can't express their idea freely

C. The Supporting Factors

During the process of the preparation of the Open Lesson to reflection, praise be to our many supported by parties involved in the Lesson of this Study, which are:

a. Head master, supervisor and teachers during activities open lesson has given help to become an observer
b. Supervising lecturer Support of UPI in the form of ideas and suggestions during the drafting of the lesson plan provide plenty of inspiration and input that is very meaningful

CONCLUSION

Based on the results of the implementation of the Lesson Study obtained:

1. With careful preparation and choose the right learning methods, learning objectives can be achieved well
2. Many inputs, ideas and suggestions during the MGMP, the teacher becomes more confident in the learning process in the classroom.
3. Students become more active than usual learning and have meaningful learning experience.

Lesson Study is a good learning community for teachers to discuss and share knowledge in an effort to improve the quality of learning

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TEACHERS' PERCEPTION ON CLASSROOM MANAGEMENT IN ENGLISH TEACHING BEFORE AND AFTER LESSON STUDY IMPLEMENTATION

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Abstract. Classroom management in English teaching is important because mostly the process of teaching and learning is conducted in the classroom. However, many teachers still have perception that classroom management is difficult to do in English teaching and mostly the teachers don't really aware to manage the classroom. Therefore, the study is conducted to investigate the teachers' perception in classroom management in English teaching before and after the implementation of lesson study since lesson study is believed could change the teachers' perception in teaching and learning. The study uses two instruments in collecting the data. The instruments are questionnaire and interview. The questionnaires were given to sixteen English teachers from three high schools under the same foundation in order to get teachers' perception in classroom management in English teaching. The sixteen English teachers are the teachers who involve in the implementation of lesson study. Moreover, the interview was conducted to three teachers who have been teacher model in lesson study implementation. The interview is aimed to support the data from questionnaire. The questionnaire and interview were given before and after the implementation of lesson study for three cycles. The result shows that the implementation of lesson study can change the perception of the teachers in classroom management comparing to before and after the implementation of lesson study as the impact of the collaboration and the chance to share among the teachers during lesson study implementation. The study is expected to contribute professional sources for teachers and other researchers about the implementation of lesson study in English teaching in high schools level. Moreover, the study is significant to reveal the impact of lesson study implementation in English teaching.

Key words: lesson study, English teaching, perception, and classroom management.

INTRODUCTION

Lesson Study is a teacher development program which is aimed to improve the quality of teachers. Lesson study, *kenkyuu Jugyo*, has been developed in Japan since 1960 and aimed to improve the quality of education. Lesson study was developed first to improve the quality of students in learning and teachers in teaching in elementary level. Nowadays, lesson study is not only implemented in elementary level but also in high school and university levels. In Indonesia, lesson study is familiarized and even used as a way to improve the quality of teaching and learning process in the class. Basically, lesson study is not a strategy or method in teaching and learning process but it is a continues collaboration among teachers to share and reflect the implementation of teaching and learning process in

class. Mulyana (2007) mentions that lesson study is one of teachers' way to improve their professionalism by reflecting the teaching and learning process based on togetherness and mutual learning to build a learning community among the teachers.

Cerbin, B. and Kopp, B. (2006) say that lesson study has four purposes. The first is to get the same understanding among teachers about how students learn and how teachers are supposed to teach. The second is to get and share new knowledge among teachers. The third is to improve the quality of teachers in teaching and learning through teachers' collaboration. The last but not least is to build pedagogical knowledge where the teachers can share their knowledge. Therefore, teachers will have similar perspectives in teaching and learning processes which will lead the teachers have same perception from the perspective they built. It is because teachers can share their experience in planning teaching and solving the problem in the class.

However, there are still limited studies about the implementation of lesson study in English teaching and learning in Indonesia because the implementation of lesson study is more common among science and math subjects. Nasruddin and Nurrachman (2016) conducted the study about the implementation of lesson study in English learning. The study shows that there are some difficulties for English teachers in conducting lesson study because some of the teachers still miss understood in seeing that lesson study was one of the method in teaching and learning in the class.

Regarding the teachers' perception in teaching and learning, Gultom (2015) states that there are teachers' perceptions in viewing English teaching. Many teachers think that English teaching is same as science teaching while students should understand to the content of the language. Otherwise, other teachers view that English teaching should be more of teaching the language skills which means that it takes a long time to train the students to become fluent in using English.

Considering teachers' perception to classroom management in English teaching, Syarifah and Emiliasari (2016) mention that mostly English teachers in Indonesia think that managing the classroom is the difficult task to do since the teachers need to organize the class, deal with students' behavior and manage the time. Therefore, there are still many teachers who do not aware with managing the classroom. However, classroom management can make the teacher easier to control the class and to support the students to learn effectively. In addition, based on the writer experience as the English teacher, mostly English teachers never manage the classroom for teaching and learning since they have perception that managing the classroom is challenging and need more effort to do. Therefore, the study focuses on teachers' perception in classroom management in English teaching before and after the implementation of lesson study in order to know whether lesson study implementation can change teachers' perception in classroom management in English teaching or not.

METHOD

The study uses mix method in order to answer the research questions. According to Malik & Hamid (2014) mix method is used for the study which combines quantitative and qualitative ways in analyzing the data. The reason in using mix method in the study is because the research question in the study was analyzed quantitatively and qualitatively by

measuring the scale data which were obtained from likert scale questionnaire and supported by the data from interview.

The population of the study is English teachers from three high schools under the same foundation. The foundation is Yayasan BPI which supervises SMA BPI 1, SMA BPI 2, and SMK BPI. The reason of choosing three high schools under BPI Foundation is because SMA BPI 1, SMA BPI 2, and SMK BPI are the only high schools in Bandung which implement lesson study in English learning and teaching in Bandung. There are 16 English teachers from three high schools under Yayasan BPI that give their perception in English teaching which include into assessment, classroom management, and teaching strategy before and after the implementation of lesson study. The 16 English teachers are the teachers that would be involved in the implementation of lesson study. Moreover, interview was conducted by asking three English teachers that had been teacher model in the implementation of lesson study.

RESULT

Teachers' Perception in Classroom Management

The data about teachers' perception in classroom management in English teaching after and before lesson study implementation were analyzed based on Syarifah&Elimiasari (2016) and Rido&Nambiar (2016) which is adapted from Brown (2001) & Richard (2011). Moreover, the three aspects of classroom management mentioned by Dayle (1986) in Cabaroglu (2015) are also used to analyze the data about teachers' perception in classroom management before and after lesson study implementation. The teachers' perceptions about classroom management are focused on the following table.

Table 3.1
Teachers' Perception About Classroom Management

No	Aspects
1.	Teachers' perception in arranging the students and teacher' seat position in the class such as make the cyrcle, U-shape, small group, etc.
2.	Teachers' perception in implementing the rules in the class to make the process of teaching and learning effective such as forbidding the students to use Smart Phone, etc.
3.	Teachers' perception in giving feedback to students working spoken and/or written.
4.	Teachers' perception in arranging the students to work (Individual, pair, or group) in every meeting.
5.	Teachers' perception in monitoring when the students are working.
6.	Teachers' perception in managing the time for teaching and learning process in the class

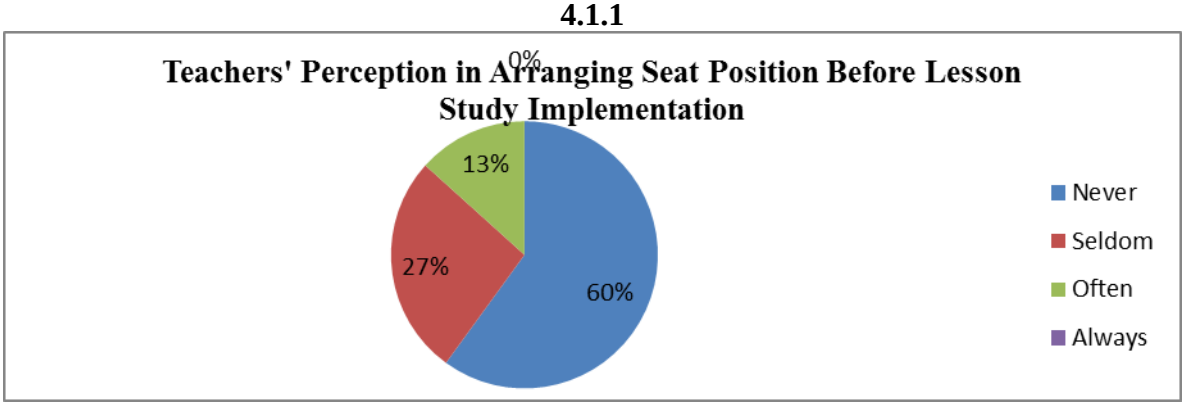
The data about the perception of teachers before and after the implementation of lesson study are obtained from questionnaire and interview which were given to the teachers before and after the implementation of lesson study. The data are discussed by comparing the teachers' perception before and after the implementation of lesson study in order to answer

the first research question whether the implementation of lesson study can change teachers' perception or not. The teachers' perception focuses on classroom management. As the result, the implementation of lesson study can change the teachers' perception in classroom management comparing to the data obtained from the questionnaire and the interview given to the teachers before and after the implementation of lesson study.

According to the data obtained from questionnaire before the implementation of lesson study, most of teachers were never and seldom arranging the seat position of students and teachers in the class. 60 % teachers were never and 27 % teachers were seldom arranging the seat position in the class. Before the implementation of lesson study, the teachers weren't used to focus on arranging the seat position. According to Lurie et.al (2000), there are some positions for seating arrangement which can be implemented in the class such as circle position, theater position, U shape, etc. The theater position where the teachers stay in the front of the class and the entire students look into the front of the class was the most position used by teachers for teaching and learning process in the class. It was because *the teacher center* used by the teachers impacted the students to be passive in learning process and the teachers were more active to explain the material in the class.

Additionally, according to the data obtained from interview before lesson study implementation, the teachers also gave their perception that arranging the seat position in the class weren't really important for them to conduct in the class. Therefore, they weren't really concern in arranging the seating position of students and teacher in the class. However, there were only few of teachers who care with seating arrangement in the class.13 % teachers responded that they often arranged the seat position in the class for just some group activities. The Chart 4.1.1 describes the data about teachers' perception in arranging seat position before the implementation of lesson study.

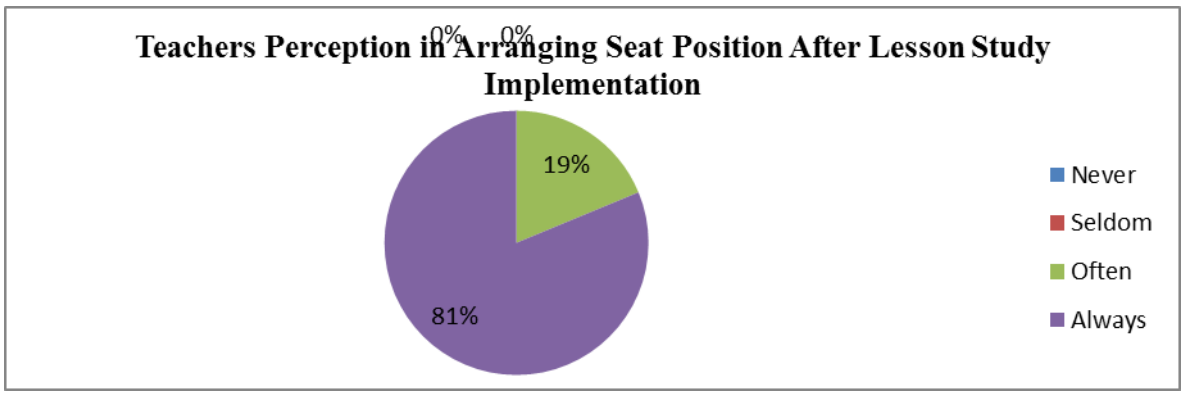
Chart 4.1.1



Otherwise, after the implementation of lesson study, the teachers gave different perception by answering the same questionnaire as they asnwered before the implementation of lesson study. The teachers responded that seating arrangement has been their main focus to conduct in the class. 81% teachers responded that after the implementation of lesson study, they always arrange students' and teachers' seating position in the class. However, there are only 19% teachers who responded that they often arrange the seating position of students and teachers in the class.

According to the data obtained from interview after the implementation of lesson study, the teachers have perception that seating arrangement can help them to control the students easily and to make the atmosphere of the class supports the students to learn actively. Moreover, it is because during the implementation of lesson study, the teachers are used to reflect the teaching and learning process in the class and considered that there were many students who didn't involve in learning process because the seating position of students didn't support them to learn and only some students who were involved in learning process. Therefore, the teachers thought that they must change the seating arrangement of the class to make the atmosphere of the class different and support all students to be involved in learning process. The teachers perception of seating arrangement after the implementation of lesson study can be seen in the Chart 4.1.2.

Chart 4.1.2



By comparing the data described in Chart 4.1.1 about teachers' perception in arranging seating position of students and teachers in the class before the implementation of lesson study and Chart 4.1.2 after the implementation of lesson study, it can be concluded that the implementation of lesson study can change teachers' perception about the seating arrangement in the class.

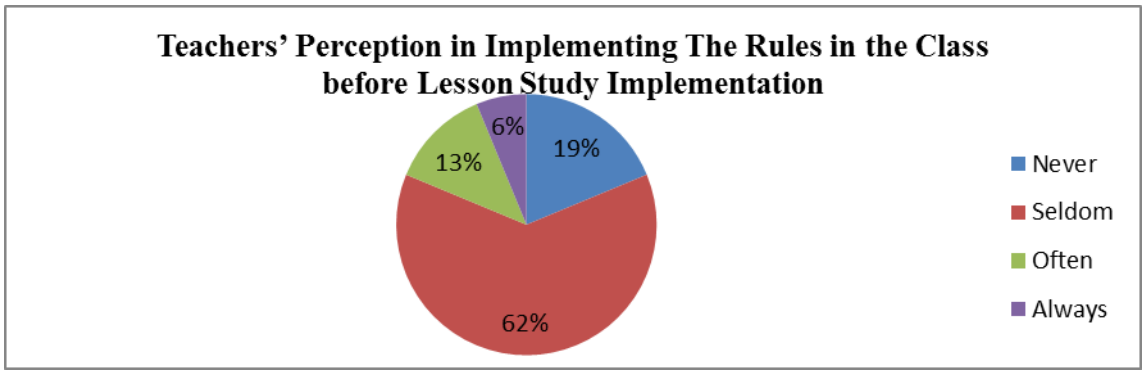
Considering to the second aspect about teachers' perception in implementing the rules in the class to make the process of teaching and learning effective for students, the teachers gave their answer in questionnaire to represent their perception. In addition, Lurie et.ad (2000) mentions that implementing the rules can discipline the students and avoid misbehavior of students in the class such as disturbing the other students, making the condition of the class noisy, playing gadget which isn't i line with the teaching and learning process, etc.

According to the data, 62% teachers answered that they seldom make and implement the rules in the class. Additionally, there were 19% teachers who answered that they never make and implement the rules in the class during teaching and learning process. The teachers gave their perception in the interview that making and implementing the rules in the class weren't really important to conduct and couldn't help the teachers to teach easily in the class. Some of the teachers also considered that making and implementing the rules in the class just burden and add their job in the class.

Otherwise, there were only 13% teachers who often and 6% teachers who always make and implement the rules in the class. It means that implementing the rules in the class

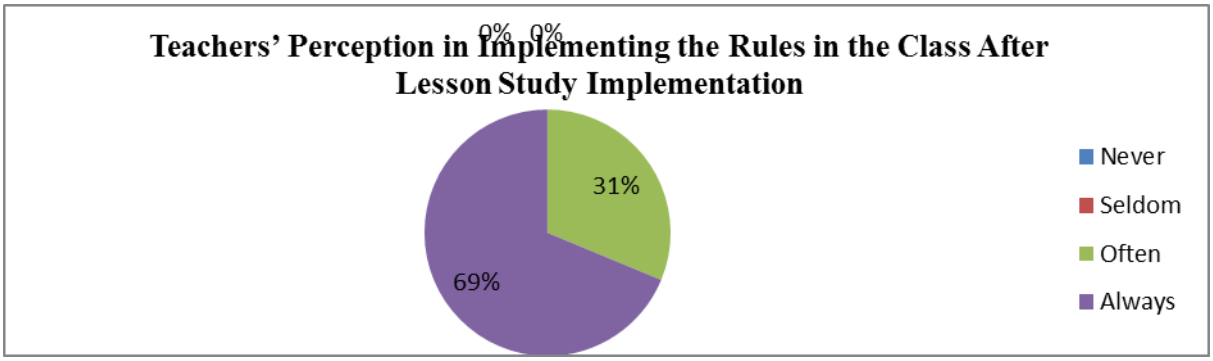
wasn't the important thing for teachers to conduct in teachers' perception. The teachers' answer which represent teachers' perception about implementing the rules in the class before the implementation of lesson study can be seen in Chart 4.1.3.

Chart 4.1.3



However, after the implementation of lesson study, teachers' perception about implementing the rules in the class was changed. According to the data obtained from questionnaire, almost all of teachers have been behaved to implement the rules in the class before teaching and learning process began. 69% teachers answered that they always implement the rules in the class during teaching and learning process and 31% teachers were often to implement the rules in the class.

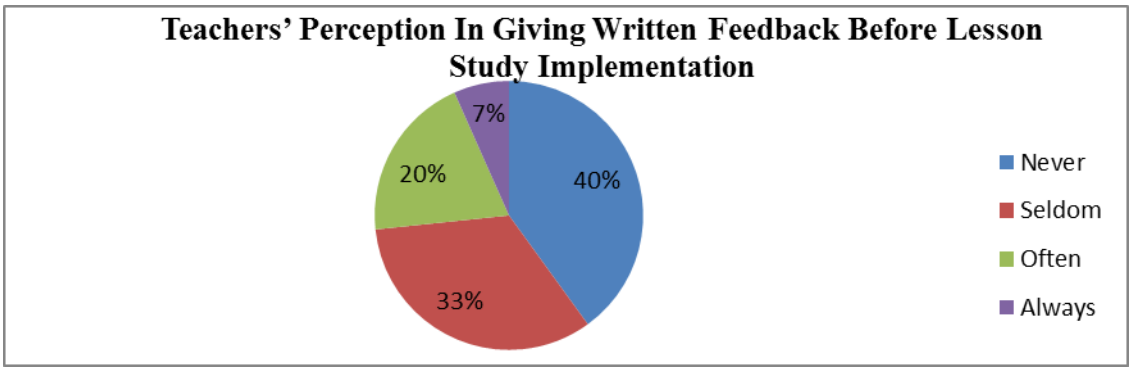
Chart 4.1.4



Comparing to the teachers perception about implementing the rules before and after the implementation of lesson study, there are some changes to the teachers perception. Before the implementation of lesson study, almost all teachers had perception that implementing the rules weren't the important thing to do. Otherwise, after the implementation of lesson study, through the togetherness during the implementation of lesson study, the teachers' perception was change and the teachers considered that implementing the rules in the class is very important to do. The teachers said in the interview that implementing the rules in the class could make the teacher easier to control the students. The teachers' perception in implementing the rules in the class after the implementation of lesson study can be seen in the Chart 4.1.4.

The other aspect investigated in classroom management is teachers' perception in giving feedback to students in written and spoken. The Chart 4.1.5 and Chart 4.1.6 below describe the teachers' perception in giving feedback in written and spoken before lesson study implementation. According to the data obtained from questionnaire, only a few teachers who used to give feedback for students both in written and spoken. Considering to giving feedback in written, 40 % teacher never gave feedback in written to students work and 31 % teachers never gave feedback in spoken to students. Moreover, 33% teachers seldom gave feedback in written to students and 44% teachers seldom gave feedback in spoken. Otherwise, there were only 7% teachers who always gave feedback in written and only 13% teachers who always gave feedback in spoken to students. Therefore, it can be concluded that giving feedback to students wasn't the important thing for teachers to do.

Chart 4.1.5

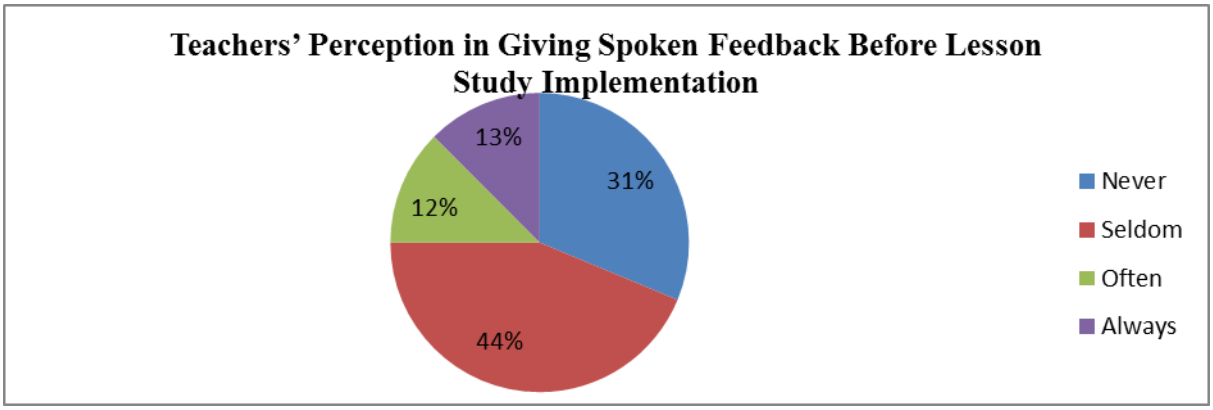


According to the data obtained from the interview, the teachers mentioned that they often forget to give feedback to students both in written and spoken. The teachers were behaved to give olnly the score to students and thought that scoring the students' work and students' activity is also giving feedback to students. However, Bashir (2016) mentions that feedback is a vital approach to facilitate students' development as independent learners in order to monitor, evaluate, and regulate their own learning. Therefore, giving feedback is an important skill for teachers in higher education and has a major influence on the quality of the students' learning process (Hattie & Timperley, 2007). In other words, giving score and giving feedback are two different things that the teacher should do. In addition, in scoring the students, the teachers also should attach the feedback in order to inform the students in what aspect they should improve their selves. In addition, Bashir (2016) also characterize that good feedback can not only provide useful information to the students in improving their learning, but also can offer decent information to teachers which is eventually improve the learning experience for the students. The teachers also should be able to give positive feedback which can motivate the students and not decrease the students' motivation.

However, after the implementation of lesson study, the teachers give different answer to the questionnaire given. According to the data described in Chart 4.1.7 and Chart 4.1.8 about teachers' perception in giving feedback in written and spoken to students after the implementation of lesson study, the number of teachers in giving feedback to students both in written and spoken increased significantly. There were 70% teachers often give feedback in written to students and 44% teachers answered that they always give feedback to students

in spoken. In the other hand, there were no one teachers or 0% teachers answered that they never give feedback to students.

Chart 4.1.6



According to the data obtained from interview, the teachers answered that after the implementation of lesson study, they became understood that giving the score to students was different with giving feedback both in written and spoken. Moreover, after the implementation of lesson study, the teachers believe that giving feedback is the important thing to do since giving feedback can improve students' understanding and quality in learning. The teachers' perception after the implementation of lesson study are described in Chart 4.1.7 about giving feedback in written and Chart 4.1.8 about giving feedback in spoken.

Chart 4.1.7

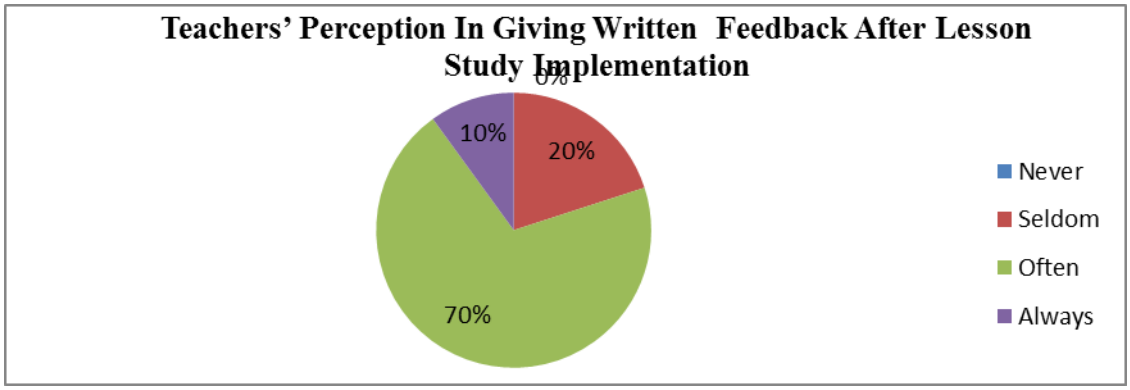
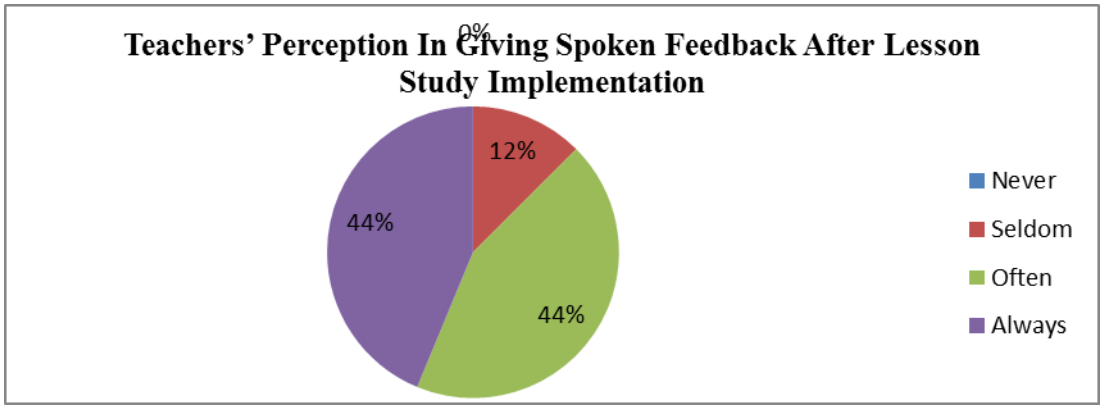


Chart 4.1.8



The other aspect about classroom management which is investigated in the study is teachers' perception in arranging students to work whether individually, pair, or group. Considering to the teachers' answer to the questionnaire which is represent teachers' perspective before the implementation of lesson study, the teachers' preferred to ask students to work individually. In addition, the teachers were seldom to arrange student to work in group and pair. However, Working in groups allows students to be in an interactive environment. This interaction helps them to develop language and social skills. During group work, students are engaging with the task, increasing their confidence, and becoming responsible for their own learning (Sajedi, 2014). Therefore, it can be concluded that arranging students to work in group would be better for students to learn than individually. It is because social support is important for learners to be successful in the classroom (Vygotsky, 1978) According to the data, 56% teachers answered that they often ask students to work individually while only 25 % teachers preferred to ask students to work in pair and 19 % to work in group. In addition, 69% teachers answered that they seldom ask students to work in pair and 75% teachers also seldom ask students to work in group. The reason of why the teachers preferred to ask students to work individually was because the impact of teacher center used in the class and the linguistic aspect which preferred to focus on grammar and reading. Because of teacher center used in the class, teaching and learning process in the class were conducted by listening teachers' explanation and then continued by answering some tasks from textbook or given by teachers. Therefore, the students were forced to work individually. The Chart 4.1.9, Chart 4.1.10 and Chart 4.1.11 explain the data about teachers' perception in arranging students to work individually, in pair, or in group.

Chart 4.1.9

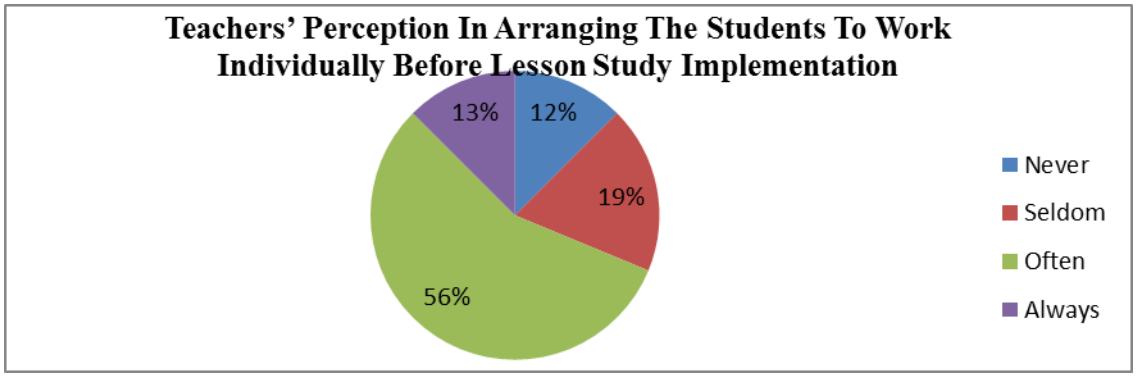


Chart4.1.10

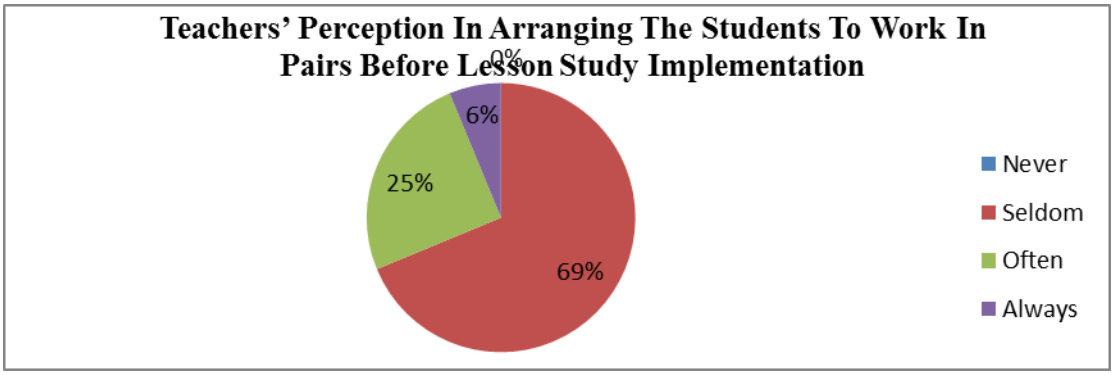
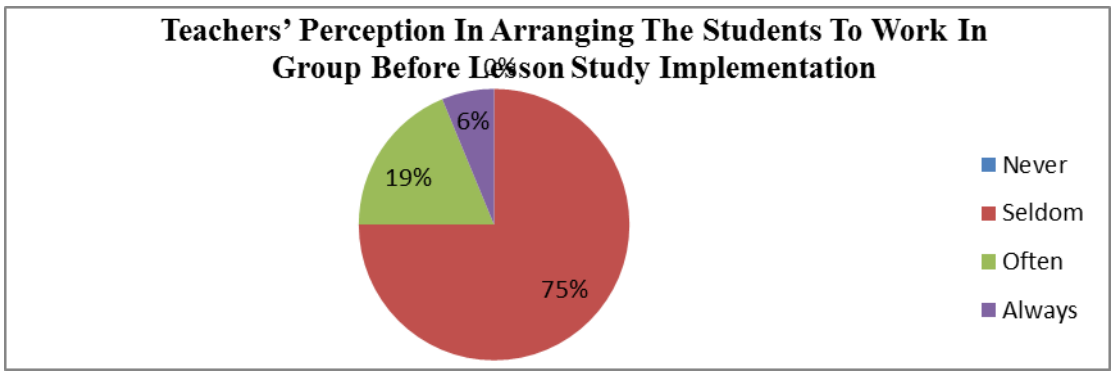


Chart4.1.11



After the implementation of lesson study, the teachers gave different answers which represent their perception in arranging the students to work whether individual, pair, or group. According to the data obtained from questionnaire, the teachers preferred to arrange students to work in group rather than to work individually and pair. Around 81% teachers, after the implementation of lesson study, mentioned that they prefer to ask students to work in group. In addition, 77% teachers answered that they preferred to ask students to work in pair.

Otherwise, there were 56% teachers answered that they seldom to arrange students to work individually again. It can be concluded that after the implementation of lesson study, the teachers preferred to arrange students to work collaboratively with other students by working in pair and group than working individually. It was because in the implementation of lesson study, the teachers used to reflect the teaching and learning in the class while asking students to work individually for some activities were not effective for students easily tan working together in pairs or in groups. The data about teachers' perception in arranging students to work individually, in pair, or in group are described in Chart 4.1.12, Chart 4.1.13, and Chart 4.1.14.

Chart 4.1.12

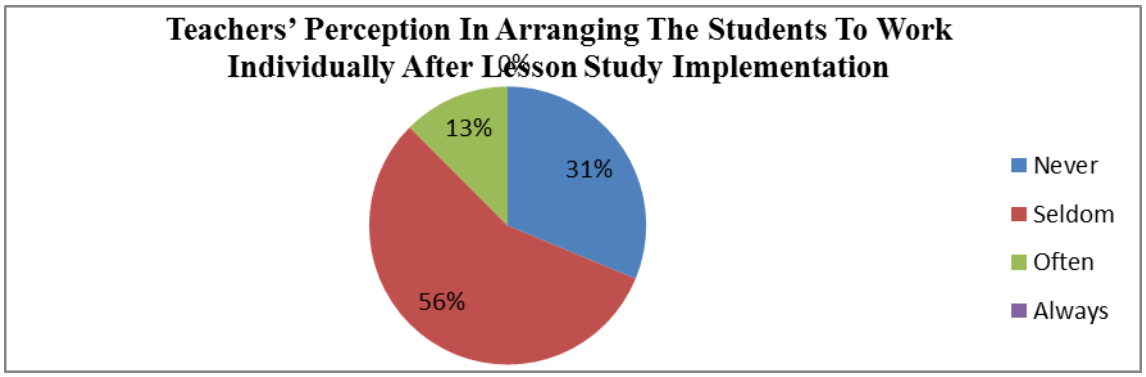


Chart 4.1.13

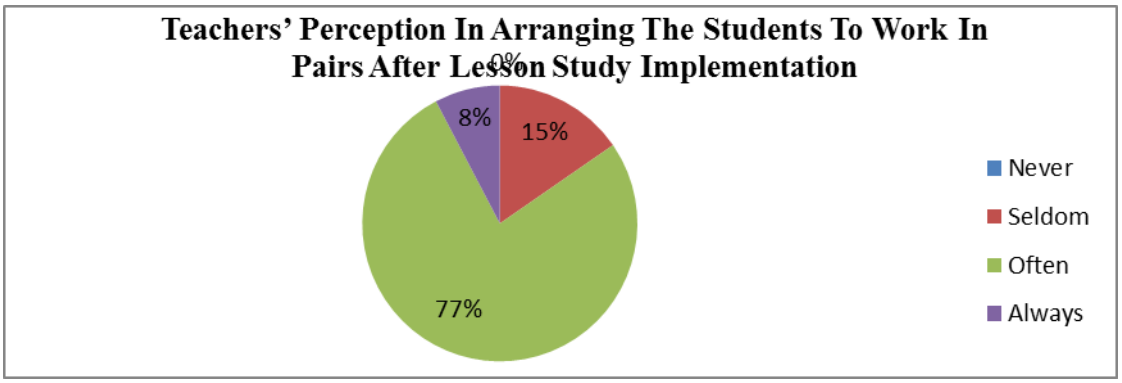
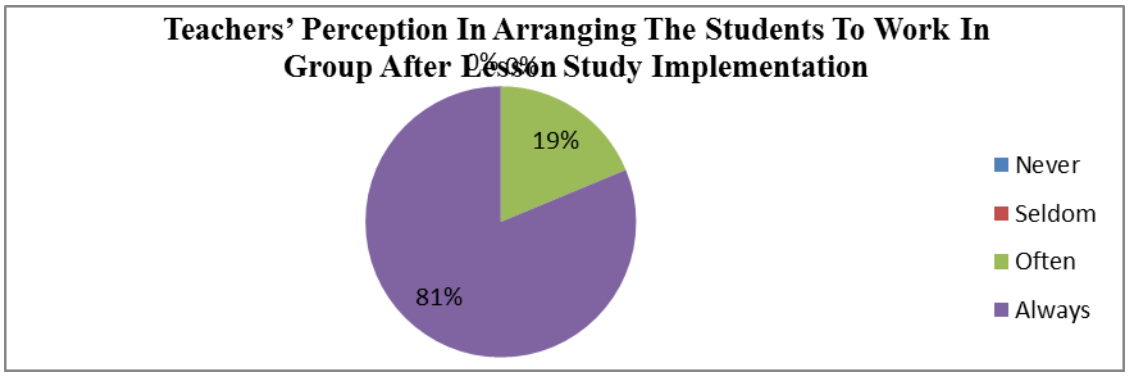


Chart 4.1.14

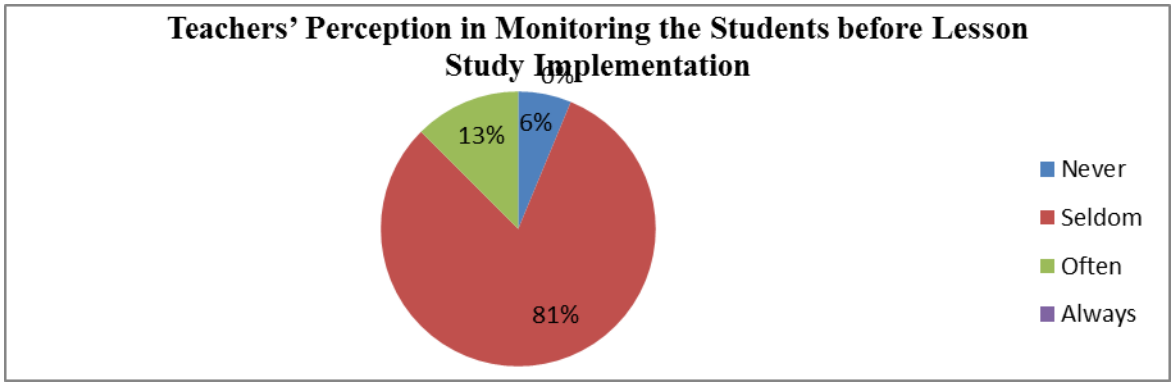


The other aspect focused on classroom management is teachers' perception in monitoring while the students are working the task in the class. Monitoring students is one activity for teachers in managing the class to be conducive and help students while they face some difficulties. According to Cotton (1988), activities pursued by teachers to keep track of student learning for purposes of making instructional decisions and providing feedback to students on their progress.

Moreover, Cotton (1988) also mention that there are some activities that the teachers can do such as questioning students during classroom discussions to check their understanding of the material being taught. The other activity is circulating around the classroom during seatwork and engaging in one-to-one contacts with students about their work. Additionally, the teachers can assign, collect, and correct the students' homework or tasks. The teachers can also conduct periodic reviews with students to confirm their grasp of learning material and identify gaps in their knowledge and understanding. Therefore, the teachers' perception before the implementation of lesson study were documented by collected the teachers' answer about how do teachers monitor the students in the class.

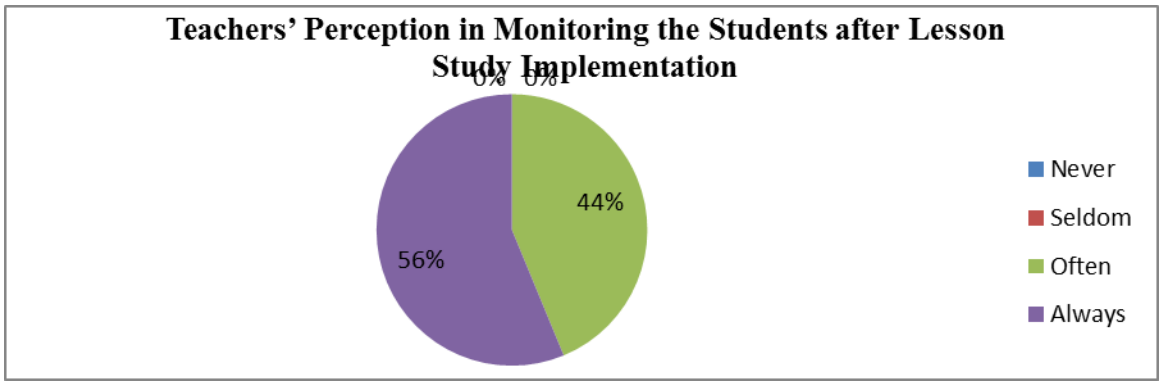
According to the data obtained from questionnaire and interview, the teachers seldom monitored the students in the process of teaching and learning in the class. it was because the teachers had perception that if the students had some difficulties in doing some activities such as doing the task, the students would ask to the teachers. Therefore, the teachers' preferred to stay on their chair and wait the students works t be collected. The teachers believed that the process of monitoring students could be conducted by considering the students' works and monitoring the students in the class were not necessary to do. Based on the data, only 13 % teachers who often and 6 % teachers who always monitor he students while they are working in the class. Otherwise, 81 % teachers answered that they seldom to monitor the students in the class. The data about teachers' perception in monitoring the students in the class are described in Chart 4.1.15 below.

Chart 4.1.15



However, after the implementation of lesson study, the teachers gave different answer which represents their perception. The teachers considered that monitoring the students was the important thing to do since in the implementation of lesson study, the teachers learn and share each other that monitoring the students while working in the class could support the atmosphere for students to learn and make students to learn easily while facing difficulties and more focus to involve in learning activity. According to the data from questionnaire, almost all teachers monitor the students in the process of teaching and learning. 56 % teachers answered that they always monitor the students and 44 % teachers answered that they often monitor the students in teaching and learning process. The perceptions of teachers after lesson study implementation about monitoring students are described in Chart 4.1.16.

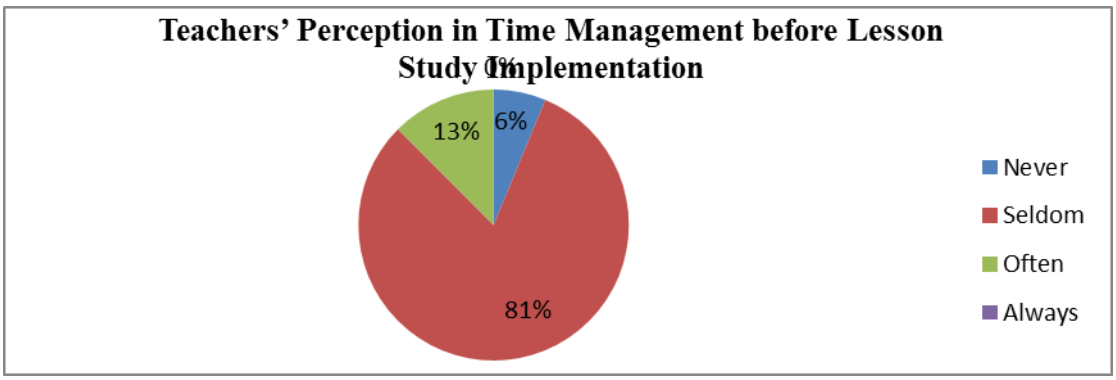
Chart 4.1.16



The last aspect in classroom management focused in the study is teachers' perception in arranging the time allocation for teaching and learning process in the class. Arranging the time allocation isn't only usually conducted by planning teaching and learning process in the lesson plan but also how do the teachers arrange the time during teaching and learning process. According to Horng (2010) and Master (2013) mentioned that time management is an important element for teachers' effectiveness and school's results. Two main components of time management are planning and scheduling of work. Therefore, the teachers should manage the time well both in planning and in implementation.

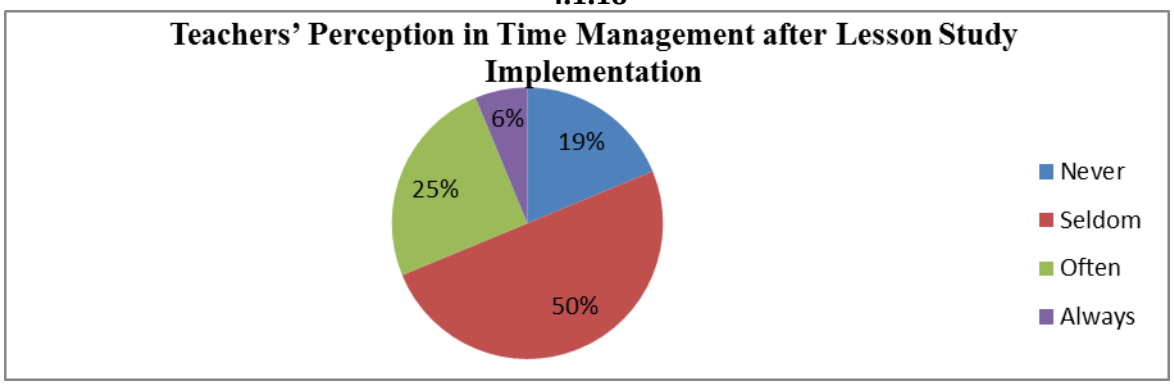
Based on the data obtained from questionnaire, the teachers gave their answer that they seldom to arrange the time allocation specifically both in lesson plan and during teaching and learning process. 81% teachers said in the interview that arranging the time allocation was something useless to conduct since the teachers said that if the time is over during teaching and learning process, they would continue to the next meeting without any specific planning. It could be concluded that the teachers weren't used to make planning to arrange the time allocation. There were only 13% teachers who answered often. Otherwise, 6% teachers answered never to arrange time both in lesson plan and during the implementation. However, No one of the teachers who answered that they always arranging the time allocation for their teaching and learning process. The data can be seen in the Chart 4.1.17.

Chart4.1.17



After the implementation of lesson study, most of the teachers gave different answer to the questionnaire. According to the data, the number of teachers who arrange the time allocation for teaching process increased comparing to before the implementation of lesson study. According to the data, 25 % teachers responded that they often, 6 % teachers answered that they always arrange the time allocation both in planning and the implementation in the class. However, there were 50% teachers who still seldom to arrange the time allocation both in planning and in the class. The data about the teachers' perception after the implementation of lesson study can be seen in the Chart 4.1.18.

Chart 4.1.18



CONCLUSION

To conclude the investigation of the study about the teacher' perception in classroom management in English teaching before and after the implementation of lesson study, the study concludes that the implementation of lesson study can change the perception of teachers in classroom management. Before lesson study implementation, the teachers were seldom managing the classroom such as arranging the students and teacher seat position and implementing the classroom rules. The reason was because before the lesson study implementation, the teachers were difficult of how to manage the class and they preferred to be teachers center in conducting teaching and learning which made the students learn passively such as listening to the teacher and doing some task in the text book. In addition, the teachers also seldom arranged the time and implemented the rules during teaching and learning process which impact the teaching and learning process wasn't planned well. Otherwise, after the implementation of lesson study, the teachers are behaved to collaborate and share each other which make the teachers easier and understand of how to develop lesson design and make the teachers easier of how to manage the class. Therefore, the teachers always manage the class such as arranging students and teacher' seat position and implementing classroom rules in the class.

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IMPROVING STUDENTS' METACOGNITIVE SKILLS THROUGH MATHEMATICS LEARNING BASED LESSON STUDY

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Abstract. This research is an quasi experimental research using pretest-posttest control group design, which aims is the different of average improvement of the students' metacognitive skills through mathematics learning based on lesson study and conventional. The experimental unit was all tenth grade students of SMA Negeri 2 Palopo determined by Purposive Sampling, Class X.3 as the experimental class and class X.4 as the control class. The research instrument used was a test of students' metacognitive skills and observaton sheet. The resulst show that there was significance difference (P>0,05) of the students' metacognitive skills between mathematics learning based lesson study (experimental class) and the students' metacognitive skill taught by conventional learning (control class). Based on the results conclude that mathematics learning based on lesson study can improve the metacognitive skills of students in class X of SMA Negeri 2 Palopo.
Keywords—Metacognitive Skill, Mathematics Learning, Lesson Study.

INTRODUCTION

Mathematics learning is difficult for students, one of them is the use of knowledge about cognition. The way students think, plan, ignite various kinds of math problems is a concern for educators. According to Langrehr the results of the study showed that student learning outcomes significantly increased after those with certain thinking skills. The low level of student skills can be done because the strategies applied in learning have not changed the level of awareness, and only place on understanding concepts [1]. Corebima stated that reasoning empowerment is almost never or very lacking and continues at every stage of learning in Indonesia. The low ability to think of these students is very closely related to students' metacognitive abilities [4]. Specifically, metacognitive knowledge is a statement about cognition, obtained from long-term memory. This includes knowledge or explicit, beliefs, and theories about yourself and others as active, and can be done with various tasks, tasks and activities. Metacognitive knowledge includes (beliefs, ideas, theories) about various functions, such as memory or thoughts, what can be done and how to do things [2].

A study of Keiichi revealed several findings, such as: (1) metacognition played an important role in problem-solving activity; (2) students tended to be more skilful in solving problems, if they have metacognitive knowledge; (3) within a problem-solving framework, teachers often stressed a certain strategy to solve an issue instead of noticing the other important aspects of problem-solving activities; (4) teachers tended to express some moderate level achievements, which are important in reasoning and problem-posing strategy [3].

Metakognitif ini meliputi aktivitas seperti orientasi/monitoring pengertian persyaratan tugas, merencanakan langkah-langkah yang diambil untuk proses tugas, mengecek dan

mengatur proses kognitif jika terjadi kegagalan, dan mengevaluasi hasil proses. Kemampuan metakognitif sebagai bagian dari proses pengaturan diri, walaupun kita sadar bahwa pengaturan diri tidak dapat dikurangi untuk kemampuan metakognitif [2].

Metacognition is people's thinking awareness of her/his thinking process, whether on what she/he knows or what she/he does not. Metacognition has two components, namely: (1) metacognitive knowledge and (2) metacognitive skill. Brown & De Loache said that a metacognitive knowledge is highly related to someone's declarative, procedural, and conditional knowledge on solving problems, while Moore said that metacognitive skill is highly related to prediction skill, planning skill, monitoring skill, and evaluation skill [3].

Peirce emphasizes that metacognition must be trained to be a skill that will guide students to learn and find their own knowledge. Students who have a high level of metacognition will demonstrate good metacognition skills, such as planning the learning process, monitoring the learning process, and assessing their cognition [6].

Lucangeli & Cornoldi said that a substantial amount of data has been accumulated on four metacognitive skills: prediction, planning, monitoring, and evaluation. In mathematics, prediction refers to activities aimed at differentiating difficult exercises (e.g., 126 / 5 =...) from the easy ones (e.g., 126 - 5 =...) in order to be able to concentrate on and persist more in the high-effort tasks. Planning involves analyzing exercises (e.g., "It is a division exercise in a number problem format"), retrieving relevant domainspecific knowledge and skills (e.g., how to do divisions), and sequencing problem-solving strategies (e.g., division of hundreds, tens, and units in mental mathematics). Monitoring is related to questions such as "Am I following my plan?" "Is this plan working?" "Should I use paper and pencil to solve the division?" and so on. In evaluation there is self-judging of the answer and of the process of getting to this answer [6].

Significant improvement in metacognitive skills is an effect that results from learning, both on students, institutions and society, because it needs to be considered learning strategies that have the potential to reveal metacognitive skills. Metacognition has an important role in regulating and controlling one's cognitive processes in learning and thinking, so that learning and thinking done by a person becomes more effective and efficient [5].

One of the solution that can be conducted to adress this probles is by implementing Lesson Study. Lesson study as an effort to continuously educate the teachers professionally with a collaboration principle. Collaboration with fellow colleagues improves the quality of learning. It exposes detailed learning problems and offer effective solutions. Five motives that Lesson Study can be pursued: 1) bringing the goals of educational standards to the real world in the classroom, 2) promoting improvements based on data, 3) aiming achievement of various students' qualities that affect learning activities, 4) providing fundamental needs to improve learning, and 5) upholding the value of teachers [7].

Lesson study is a type of classroom research in which a few teachers investigate teaching and learning in the context of an actual single class lesson. When the teachers complete the study they document their work in a report that describes the lesson they designed, explains how the lesson worked and what they have learnt about teaching and learning from the lesson study experience [8].

According to Takahashi LS is not just a "nice to have, but a must have". He stressed that LS provides opportunity for classroom teachers to work collaboratively to seek effective implementation of new ideas, rather than struggle in isolation to understand how the ideas

look in his/her own classroom. He elaborated that LS provides access to outside experts, the knowledgeable others, so that each teacher can understand new ideas for improving teaching and learning with concrete examples. He added that LS as a fundamental driver for professional development permits teachers to learn not only new ideas for improving teaching and learning but also helps them to develop expertise[9].

Based on the above considerations, the researcher carried out a research entitled improving students' metacognitive skills through Mathematics learning based on Lesson Study.

METHOD

This is a quasi experiment research using pretest-posttest control group design. This research conducted at SMAN 2 Palopo academic year 2017/2018. The experimental unit was the Xth grade of SMAN 2 Palopo, by using purposive sampling then X.3 as an experimental class and X.4 as the control class. Instrumen used test of metacognitive skill and observation sheet. Analysis used descriptive statistics and inferential statistics.

RESULT

Experiment Class

The experimental class is the class taught by applying lesson study. The following is an overview of students' metacognitive skills scores before and after being taught using lesson study.

Table 1. Experimental Class Frequency For Pretest and Posttest

Statistic	Statistic Score	
	Pretest	*Posttest*
Sample Size	28.00	28.00
Maximum score	54.00	98.00
Minimum Score	30.00	74.00
Mean	42.60	88.67
Median	40.00	89.00
Modus	39.00	90.00
Range	24.00	24.00
Variance	43.35	34.81
Standard Deviation	6.58	5.90

In table 1 shows that the average score at the pretest is 42.60, an increase in the posttest is 88.67. The same is true of the normalized gain score shown in the following table.

Table 2. Score of Gain for Experimental Class

Gain Coefficient	Classification	Frequence	Percentage (%)
$g < 0,3$ $0,3 \leq g < 0,7$ $g \geq 0,7$	Low Middle High	0 7 21	0 25 75
Amount		28	100

In table 2 shows that the score of the improvement of students' metacognitive skills for the medium category is 7 students and the high category is 21 students. This shows that the average score of increasing students' metacognitive skills is in the high category.

Table 3. Score of Students Metacognitive Skill on Experimental Class

Metacognitive Skill	Score
Planning	94.25
Monitoring	88.71
Evaluation	83.05

In Table 3 shows that the scores of students' metacognitive skills for aspects of planning, monitoring and evaluation are in the very good category. This is supported by observations of students' metacognitive skills shown in the following table.

Tabel 4. Observation Result of Students Metacognitive Skill on Experimental Class

Activity of Students Experimental Class	Meeting			
	I	II	III	IV
Planning Monitoring Evaluation	64.28 % 50 % 60,71 %	71,42 % 67,85 % 78,57%	85,71 % 78,57 % 82,14 %	89,28 % 85,71 % 85,71 %

In table 4 shows that there was an increase in student activities related to students' metacognitive skills from the first meeting to the last meeting taught by applying lesson study.

Control Class

Control class is a class taught by learning that is applied by the teacher as usual or called conventional learning. The following is an overview of the scores of students' metacognitive skills before and after learning in the control class.

Table 1. Control Class Frequency For Pretest and Posttest

Statistic	Statistic Score	
	Pretest	*Posttest*
Sample Size	27	27
Maximum score	50	90
Minimum Score	32	65
Mean	39.88	78.85
Median	40	80
Modus	40	56
Range	18	25
Variance	26.10	31.20
Standard Deviation	5.10	5.58

In table 1 shows that the average score at the pretest is 42.60 has an increase in the posttest that is 78.85. The same is true of the normalized gain score shown in the following table.

Table 2. Score of Gain for Controll Class

Coefficient of Gain	Classification	Frequence	Persentage (%)
$g < 0,3$	Low	0	0
$0,3 \leq g < 0,7$	Middle	19	70.37
$g \geq 0,7$	High	8	29.62
Amount		27	100

In table 2 shows that the score improvement of students' metacognitive skills for the medium category is 19 students and the high category is 8 students. This shows that the average score of improvement in students' metacognitive skills is in the medium category.

Table 3. Score of Students Metacognitive Skill for Controll Class

Metacognitive Skill	Score
Planning	80.88
Monitoring	78.67
Evaluation	77.00

In Table 3 shows that the scores of students' metacognitive skills for aspects of planning, monitoring and evaluation are in the good category. This is supported by observations of students' metacognitive skills shown in the following table.

Table 4. Observation Result of Students Metacognitive Skill for Control Class

Activity of Students Control Class	Meeting			
	I	II	III	IV
Planning	62.96 %	66.67 %	70.37 %	70,37 %
Monitoring	55.56 %	62.96 %	66.67 %	70.37 %
Evaluation	59.26 %	59.26%	62.96 %	62.96 %

Table 4 shows that there was a slight increase in student activity related to students' metacognitive skills from the first meeting to the last meeting taught with conventional learning.

Test of Hyphotesis

Based on the normality test indicated that the significance score for the normalized gain score for $\alpha = 0.05$ for the experimental class $p = 0.105 > 0.05$ and for the control class $p = 0.200 > 0.05$ so the two data came from a population that was normally distributed.

Based on the homogeneity test shown that the significance score for normalized gain score for $\alpha = 0.05$ is $p = 0.415 < 0.05$, this shows that in the experimental class and the control class have the same (homogeneous) variance.

Based on the hypothesis test using independent sample t test indicated that the probability value is 0,000 smaller than the significant value = 0.05 then H_0 is rejected and H_1 is accepted, so it can be concluded that there is a difference in scores of an increase in the average metacognitive skills of students between those taught with learning lesson study with students taught with conventional learning.

CONCLUSION

Based of the result and discussion above then the conclusion of this research were there is a different between students tought mathematics based lesson study and students thought based conventional learning

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THE CULTIVATING OF SOCIO-EMOTIONAL THROUGH LESSON STUDY FOR LEARNING COMMUNITY (LSLC) TO THE STUDENTS AT KINDERGARTEN IDHATA

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Abstract. The attainment of maturity in socio-emotional affected the early childhood growth. This research would like to see the cultivating of socio-emotional through lesson study for learning community (LSLC) to the students at kindergarten IDHATA. The goal of this research was to describe socio-emotional of early childhood by qualitative approach. The result of this research indicated that the student's socio-emotional ability at IDHATA kindergarten got successfully enough through lesson study for learning community (LSLC). It could be seen the students have the ability to care and help each other's. They also have an eagerness to share the information. In the other occasion, the students showed the patience in finishing their job gathered by having high responsibility.

Keywords: Socio-Emotional, Lesson Study for Learning Community.

INTRODUCTION

Early childhood education is a level of guidance aimed at children from birth to six years old through the provision of educational stimuli to help growth, physical and spiritual development so that the children have readiness to face further education. Early childhood education is very focused on the basis for growth and six physical developments namely religion and morals, physical motor, cognitive, language, socio-emotional and artistic according to the stages of development that are passed in early childhood. Therefore, in creating a superior generation in the face of the development of the industrial revolution 4.0, it can be carried out by providing education that provides wide opportunities for students to grow and develop according to the potential, talents, interests and abilities of each child.

The problems faced by early childhood are things that can interfere with their development both the way they socialize with the environment and also the influence of emotions. In this case students in Idhata kindergarten still have difficulties in interacting with their friends they still tend to be alone in completing various tasks given by the teacher. Students are still embarrassed to share with their friends and even do not want to help other friends. Boredom is also still felt by students because of the way the teacher in teaching does not prioritize what is needed by students both in the form of centers and areas. This condition is because teachers are still pursuing targets that must be achieved in the curriculum so that there are still students who are neglected in learning.

The phenomenon found in Idhata Kindergarten is an interesting source of study to study. In this case Lesson Study for Learning Community becomes one of the solutions to solve various problems that occur. Through teacher training based on Lesson Study for Learning Community can improve the quality of learning in the Right-kanak Idhata Park. In

addition, teachers can collaborate in carrying out learning starting from the learning planning stage by analyzing the needs of students to the stage of reflection to find a way out of the problems found during learning.

METHOD

This research approach was an action research approach through lesson study. This study aimed to build socio-emotional development in Idhata kindergarten students. The research subjects was class I b that consisting of 20 students.

This study used a lesson study model developed by Lewis (2002) with the following steps:

1. Preparation
   The activities carried out at this stage were (1) researchers together with teachers and colleagues became collaborators and selected one teacher to be the model teacher, (2) together with the model teacher and collaborator teacher to determine the theme for the lesson study research namely "art" (3), Preparing lesson design (4) Preparing material and learning media, (5) making observation guidelines.
2. Teaching Planning
   The agreed learning plan consists of 2 meetings. Documentation data is also carried out through video and photo recordings.
3. Implementation the Activity
   In the implementation phase, this activity is carried out through three stages:
   a. Planning
      At the planning stage, the teachers involved in the lesson study together collaborated to compile a lesson plan describing student-centered learning. Planning begins with the activity of analyzing the needs and problems faced by students in learning, such as basic competencies, ways to teach students, anticipate the lack of facilities and infrastructure so that various real conditions can be identified that will be used for learning purposes. The results of the analysis to be from the needs and problems of students becomes a part that must be considered in the preparation of the lesson design, so that the lesson design become a truly mature plan that can anticipate the possibilities that will be occuring during the implementation of learning.
   b. Implementation Phase (Do)
      The second stage was the process of learning carried out by one of the teachers who agreed to practice the lesson design that had been prepared together. In addition, at the implementation stage also carried out observations or observations carried out by members or other lesson study communities.
   c. See Stages (Reflection)
      The third stage is a very important step because this stage is an effort to improve the next learning process which depends on the sharpness of each observer's analysis based on observations of the implementation of learning that has been carried out. This activity is carried out in the form of a discussion that must be followed by all participants who have participated in the open lesson activities. The discussion begins with the delivery of impressions from model teachers who have practiced

learning. After that, all observers convey responses or suggestions wisely to the learning process that has been carried out by accompanying the evidence that has been obtained from the results of observation not based on their opinions. Various conversations that developed became feedback for all participants to improve or improve the learning process.

Analysis technique

The data that has been collected is analyzed qualitatively because the data obtained are in the form of words and not a series of numbers and cannot be arranged in categories or classification structures. Data collected in the form of observations, photos and videos.

RESULT

Application of Cycle I Learning

At the first meeting the teacher in the Idhata kindergarten accompanied by the lecturer discussed to do some preparation to carry out the learning. The teachers were very enthusiastic in participating in this activity by determining one model teacher, the team member who became the observer gave various suggestions and input for the implementation of this activity. The steps of lesson study are carried out in three stages. Before going through these stages the teacher determines the goal by identifying what is needed by students and formulating the objectives of the curriculum. After that, the teacher determined to do three stages of lesson study, namely:

1. Planning

At this stage the teacher designs learning tools by analyzing students' needs and is included in the preparation of the Daily Activity Plan or lesson design which is based on learning communities. In addition, the lesson study team designed interesting learning media in accordance with the predetermined theme of the "Red and White Flag". Analysis of learning in terms of basic competencies, ways to teach students with a central method with the aim that students are more active and directed to be independent, help each other and share friends. In addition, the planning stage is arranged optimally to anticipate all possibilities that occur during learning.

2. Implementation

At this stage the model teacher applies learning based on the results of the planning that has been prepared together with the lesson study team members. At the time of opening learning begins with memorizing short verses and daily prayers. This activity became a learning culture conducted at Idhata kindergarten. All students who can memorize seem enthusiastic in following the initial learning activities while, for students who do not master memorization, they are silent and do not enjoy learning. In this condition the teacher has not directed students to be able to take part in learning and activities continue until the initial classical phase is complete. The teacher shows a picture of the flag and asks students to mention the picture shown by the teacher. After the student answers the teacher asks the other students to answer the color of the flag. Then after students answer all questions the teacher directs students to sit in groups called centers. In this learning there are three centers that have been formed, namely cutting centers, coloring centers and centers for filling collages. The teacher asks questions to each student then for students who can answer to

choose the center they want. After all students are in the center they still feel ashamed to join a different gender. So the two centers consist of male students and one female center. Each center is accompanied by a teacher. In learning activities students have not been seen to collaborate they are still individuals in completing tasks. At the center of the cutting, a student is seen to be slow in cutting because he does not know the correct cutting method. Unexpectedly, other students who became members of the group without being directed by the student teacher helped his friend to cut. For students who have completed the task given the opportunity to move to another center. From this activity, there were only gender differences but in communicating they were still shy and did not even communicate with male students. After students complete the task the teacher gives value from each center that has been completed by students.

At the end of the activity, the teacher asked the students to go back to sitting classically and the teacher reinforces the learning material. The teacher concludes and provides motivation and advice to students. Before students eat students read the prayer together. After that, students tidy up their eating utensils, throw trash in their place and greet the teacher to ask permission to go home.

1. See

In the see stage is the stage of evaluating learning outcomes that were carried out immediately after the implementation stage was done. The first opportunity was given to the model lecturer to convey the message and impression when learning. Furthermore, the lesson study implementation team discussed the results of observing the learning process that had been carried out. Observers provided constructive advice and input so that there were no misunderstandings and the model teacher is not cornered. Observation results from each learning activity became input material for the preparation of learning planning at the next meeting.

Application of Cycle II Learning

At the meeting of the two teachers who became the lesson study team jointly discussed to do better planning based on the input and suggestions that had been made at the first meeting. At this second meeting the model teacher was still cared for by the same teacher at the first meeting, this was done because the teams had agreed to focus on one class first so that significant results could be seen. The stages that are passed also consist of:

1. Planning

The teams have been seen focusing and understanding the lesson study. During the second stage of learning planning they revised the learning plan based on the analysis of student needs based on the problems that had been found in the results of the first cycle reflection. The theme of learning at this meeting was "Myself" and the sub theme "Body Members". There are two students who are targeted and need extra attention when learning at the first meeting. The reason for making these two target students based on the conditions faced by the students, they look inactive and tend to be silent. Therefore, this is an input in the preparation of learning plans in cycle II.

2. Do

In the implementation phase, the teacher teaches the material that has been prepared in accordance with the learning design. at the time of planning the lesson study team

established two target students. Two accompanying teachers pay special attention to the two target students to see how far they are developing in following the learning process. The learning indicators include knowing the characteristics of the limbs, coloring the fingers, filling the hand drawing collage and drawing a finger. Learning looks fun students follow and enjoy learning. When students sit in groups of students they still seem to work alone and have not been seen working collaboratively and helping each other among group members. In the middle of learning students have begun to look active and have seen each other's work done by friends so as to create communication between fellow group members. The accompanying teacher also directs students not to be dependent on the teacher but to share and help each other. An interesting thing when the two students who were targeted turned out to be enjoying their learning by entering into a group filling in collages and drawing hand drawings. In addition, there is a student who is in an unhealthy state at first seems not to enjoy learning, but he still persists to continue learning to completion. The student succeeded in participating in two activities, namely coloring the fingers and drawing hand drawings. After all activities have been completed by each student the teacher gives a value in the form of a star. The next activity, the teacher and students close the learning by repeating the material together and ending with prayer.

3. See

The last stage of lesson study is see. At this stage the principal acts as a moderator to lead this discussion. In honor of the teacher the model is given the first opportunity to convey the impression and experience during learning. After this session was finished, the principal gave the opportunity to the accompanying teachers and observers to convey the findings they had obtained as an accurate source of information to improve the quality of learning. the observers conveyed information that students in general had enjoyed their learning even though at the beginning they looked passive. After the model teacher and accompanying teacher direct students to be independent and help each other with group members they begin to communicate and collaborate with friends. The most valuable things found during the teaching and learning process take place, namely the patience of students to keep learning until the class ends. In addition, there is also a student who volunteered to help his friend who is still having difficulties to get the job done. From the conditions that have been found, it turns out that the learning community has been created in kindergarten students. If this condition continues to be fostered and developed, collaborative learning can be created in learning. It is highly expected that this attitude will become a learning culture for students to the next stage so that success can be achieved equally without selfishness to win by themselves. Therefore, lesson study for learning community is very effective to be applied in Idhata kindergartens in the scope of increasing children's social emotional.

CONCLUSION

The results of this research included:

1. Learning that is applied in Idhata kindergarten is in the form of a lesson study-based center with a collaborative learning model.
2. The results obtained in the improvement of children's socio-emotional include students sharing and caring with their peers, students have provided each other information

actively and students already have a level of patience in undergoing the learning process.

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A META ANALYSIS STUDY OF THE EFFECTIVENESS OF LESSON STUDY IMPLEMENTATIONS IN TEACHING

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Abstract— This study aims to find out: (1) the implementation of lesson study in learning, (2) Improving students' social learning skills as a nuturance effect in learning. This research is a type of quasi experimental research with post test only control group design. The sample of this study is 47 types of research determined by gradual random sampling technique. Data collection uses scale with expert test . Data were analyzed by multi-variat statistical analysis. The results showed 1) Implementation of lesson study in learning by comparing schools located in cities, suburbs, and villages, showed a significant impact using the F-test with the acquisition of Fcount = 16.57> Ftable = 2.41, 2) Lesson study can improve students' social learning skills as a learning nurturance effect. Based on this, it can be concluded that the implementation of lesson study can be a vehicle for contributing to the achievement of student learning progress.

Keywords— lesson study, learning progress, social learning skills

INTRODUCTION

Education is a vehicle to improve the quality of Human Resources and a vehicle to educate the lives of the nation. The teacher has a very important role in the learning process, even though the digital world controls almost all aspects of human life. For example in domestic work can be replaced with robots, in the world of education, teacher meetings with students can be replaced with e-learning or blended learning, but it is well realized that human formation is not enough only in the aspect of intelligence, but there are still many aspects that need to be developed. In learning other than developing of the children's ability to learn, there are more important things to develop, namely: learning skills. Aspects of learning social skills; such as: (1) learning to focus on learning activities, (2) learning to focus attention, (3) learning to work together, (4) learning to share or helping friends in learning difficulties, (5) learning to discuss and share. The mentioned learning skills, will not be replaced through digital learning. Therefore lesson study as a supplementary process in learning assessment mainly helps facilitate student to learn. In a relatively long period of time from 2012 to 2018, the lesson study has been conducted in elementary schools, middle schools, and universities in Buleleng regency, so that researchers see the potential if longitudinal studies are conducted to find out the effect of lesson study. in learning. Based on this background, Meta Analysis research on the effectiveness of lesson study in learning is considered potential to be implemented.

Meta-analysis research is: a way to integrate or synthesize research findings. In quantitative research, said that meta-analysis research is a statistical procedure used to look

for trends in the magnitude of the observed effects of a number of quantitative studies involving the same research problem or research topic. Based on the above opinion, this reported meta-analysis research combines the two ways described by Glass and Gall, which synthesizes research findings using lesson study settings in learning and in services by utilizing statistical analysis procedures. The general focus of this meta-analysis research includes aspects such as the following: (1) Research articles using lesson study settings, (2) Research covers the range of 2016 to 2018, (3) Articles as research subjects consist of research articles conducted by lecturers and students in the field of learning for subject teachers and in the field of services for teachers Guidance and Counseling. The main focus of this meta-analysis research is related to the analysis of articles. Articles are reviewed by experts by reviewing the related dimensions in each research article that is sampled. The dimensions examined include; (1) Using straightforward language, (2) Linkages with research titles, (3) Consistency of problem formulation, (4) Completeness of problem formulation, (5) Inherence of research titles with formulation of research problems, (6) Inherence of research hypothesis formulation with research problems, (7) Novelty Theory used to study the variables under study, (8) The number of theories studied to synthesize the formulation of grand theory or variable concepts measured, (9) Coherence of empirical support for grand theory or concept, (10) Completeness of grand theory or concept formulation, (11) Inherence of research titles with research problem formulation, (12) Inherence of the formulation of the research hypothesis with the research problem, (13) The novelty of the theory used to examine the variables studied, (14) The number of theories studied to synthesize the measured grand theory or variable concept, (15) Coherence of empirical support for grand theory or concept, (16) Completeness of grand theory or concept formulation, (17) Accuracy research conclusions to answer research problems.

Learning in the 21st century has a tendency to lead to active learning or student centered with a variety of innovative learning models. Therefore students must be truly actively involved in seeking knowledge. Teachers are expected to be able to choose learning models and methods that provide opportunities for students to actively build their own knowledge so that students are better able to obtain good learning outcomes in receiving each lesson given.

In learning in elementary schools teachers must be able to guide students. Therefore the teacher must be able to design an appropriate learning plan. Therefore, the teacher can do it through the lesson study activities.

Dharsana said that "Lesson study is an approach to improving the quality of learning which originally came from Japan". According to Daryanto & Rahardjo states that Lesson study is a model of educating professional development through collaborative and ongoing learning assessment based on the principles of collegiality and mutual learning to build a learning community. Thus, lesson study is not a learning method or strategy but through lesson study can apply various learning methods / strategies that are in accordance with the situation, conditions, and problems faced by the teacher.

So, lesson study is an approach to improving the quality of teaching and training (training) professional educators through collaborative and sustainable learning studies based on the principles of collegiality that help each other in learning to build learning communities.

Through Lesson Study, teachers are expected to be able to freely improve teacher performance and professionalism which ultimately can improve the quality of learning and produce high-quality students.

According to Hidayat the lesson study steps are:

1. Planning (Plan)
   Planning is carried out collaboratively based on problems in class to develop student-centered learning models. In general Plan's activities include academic excavation, learning planning and preparation of tools. Learning planning is done by taking into account the learning objectives and characteristics and development of students, which are carried out collegially and collaboratively.
2. Implementation (Do) and See
   Do activities are activities where a model teacher carries out learning in class, while the other teacher observes all student learning activities during the learning process. Observations can also be made by other people who have concern for education, with the target record of observation not directed at the teacher, but focused on the activities of students in following the learning process.
3. Reflection
   Reflection activities are carried out after the learning activities (do) have been completed, to see various things found in the implementation of learning, both by model teachers and observers. Teachers and observers share their findings regarding student learning activities during the learning process.

METHOD

This meta-analysis research covers 47 types of research and is a research that uses a quasi-experimental research design. Each study used an experimental group and a control group involving members of a sample of 1100 people.

Data obtained from the reviewer analysis on research articles include dimensions: (1) Using straightforward language, (2) Linkages with research titles, (3) Consistency in formulating problems, (4) Completeness of problem formulation, (5) Inherence of research titles with formulation of research problems, (6) Inherence of the formulation of the research hypothesis with research problems, (7) The novelty of the theory used to examine the variables under study, (8) The number of theories studied to synthesize the formulation of the grand theory / concept of measured variables, (9) Coherence of empirical support for grand theory / concept, (10) Completeness of the formulation of grand theory / concept, (11) Inherence of the research title with the formulation of research problems, (12) Inherence of the formulation of the research hypothesis with research problems, (13) Novelty Theory used to examine the variables studied, (14) The number of theories studied to synthesize the grand formula variable theory / concept that is measured, (15) coherence of empirical support for gra and theory / concept, (16) Completeness of grand theory / concept formulation, (17) Accuracy of research conclusions to answer research problems. Each dimension is scored using the following 5 scale:

1. Very appropriate to the statement given a score of 5
2. In accordance with the statement given a score of 4
3. Sufficiently in accordance with the statement given a score of 3

4. Less in accordance with the statement given a score of 2
5. Not in accordance with the statement given given a score of 1

The research data was analyzed using the F-test, and continued with the ES test. The F-test formula includes

dban = a – 1

dbdal = N – a

$$JK_{ant} = \sum \frac{(\sum X_i)^2}{n_i} - \frac{(\sum X_T)^2}{N}$$

$$RJK_{ant} = \frac{JK_{ant}}{db_{ant}}$$

$$JK_{dal} = \sum X_t^2 - \sum \frac{(\sum X_i)^2}{n_i}$$

$$RJK_{dal} = \frac{JK_{dal}}{db_{dal}}$$

$$F_{ant} = \frac{RJK_{ant}}{RJK_{dal}} \quad (1)$$

The next stage is the determination of Effect Size to determine the level of effectiveness obtained then the following formula is used:

$$ES = t \sqrt{\frac{1}{n}} \quad (2)$$

RESULTS

Data analysis used in this meta-analysis is to test hypotheses using the F-test. As well as to determine the level of effectiveness the effect size is used.

Based on the analysis carried out, the results of F_{count} = 16.57 with a significance level of 5% and the value of Ftable = 2.40. Based on these results, the F_{count} value> F_{table} so that it can be concluded that the effectiveness of the lesson study implementation in learning is obtained in schools located in the city, city and village.

Then to measure the level of effectiveness obtained, the calculation of effect size is used as follows:

ES = 4,07

ES = 4,07 x 0,33

ES = 1,34

CONCLUSION

The results of the meta-analysis study show: 1) Implementation of lesson study in learning by comparing schools located in cities, suburbs, and villages, shows a significant impact using the F-test with the acquisition of F_{count} = 16.57 > F_{table} = 2.41 with ES = 1.34 which is very effective, 2) Lesson study can improve students' social learning skills as a learning effect of nurturance. Based on this, it can be concluded that the implementation of lesson study can be a vehicle for contributing to the achievement of student learning progress.

The teachers are expected to be able to implement learning with cooperative learning models to attract students' attention and influence the implementation of the learning process. Then develop or provide innovations in learning through setting lesson studies to improve students' social learning skills, as well as developing good learning collaboration between teachers, students, and the environment.

For other researchers can do similar research to compare the effectiveness of the learning approach to improvement through several learning models in the industrial revolution era like today to be able to answer the challenges and see the opportunities that exist to improve the learning system in Indonesia.

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THE EFFECTIVENESS OF LESSON STUDY IN IMPROVING LECTURERS' PERFORMANCE

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Abstract. The aims of this research are namely to describe the quality of lesson study implementation on the lecturers of Faculty of Teacher Training and Pedagogy in Dwijendra University Bali and to analyze the effectiveness of lesson study implementation in improving the lecturers' performance in learning process. This research is an experimental research that conducting pre and post-test. The research method applied is descriptive qualitative. The sources of data consist of documents and lecturers that selected with purposive sampling technique. The documents are the chapter designs and observation sheets, while the research target are the lecturers' of Faculty of Teacher Training and Pedagogy at Dwijendra University Bali who have not get lesson study training yet. Totally, there are 35 lecturers.The final findings of this research shown that 1) the average score of lesson study implementation on the lecturers of Faculty of Teacher Training and Pedagogy Dwijendra University in academic year 2017/2018 is 94.45 with excellence qualification. 2) Based on the result of hypothesis test by using t-test, it indicated that the lecturers' performance in learning process after implementing lesson study is better than before (t-2,000; $p<0.05$). In addition, it shows the implementation of lesson study is effective in improving the lecturers' performance in learning process.

Keywords—learning process, lecturers, lesson study

INTRODUCTION

Teaching is an art. It is a skill that has to be developed every time in accordance with the growth of this digital era. Every educators, teachers or lecturers, has their own style in teaching. It is usually the comfortable for them to teach. Comfortable in this situation means the teaching method that ease them one to teach hence the students can understand and comprehend the teaching material easily. In addition, there are no rules for the educators to use particular teaching style or method to teach in the class. Therefore, it becomes their right to choose any teaching style they would like to implement for their teaching learning process.

Moreover, time goes fast that is in accordance with the growth of technology as well. The teaching style for the learning process tends to be questioned as the effect of it. The old fashioned teaching style needs to be refreshed hence a qualified learning process can be achieved. In this revolution era of 4.0 where quality becomes the prime focus than quality, therefore the style in teaching needs to be revised. Lecturing style in teaching is not effective anymore in creating a qualified teaching learning process as a qualified teaching learning process will give a good impact to both the educators and the students which in this era, it

could not be achieve. This is similar to the change point of view of Bloom's Taxonomy that stated lecturing only takes 5% from the whole taxonomy.

Besides, the lecturing teaching method makes the students bored and they tend to open their hand phone in the class, during the teaching learning process, to updating their status at their social media or merely for stalking their friends' status at the social media. This situation indicates the teaching learning process does not run effectively. In order to overcome those situations, lesson study activity is the effective one that can be implemented. Lesson study is an activity which students' learning process becomes the essential point of the activity[3]. It has three stages that need to be implemented, namely (1) plan, (2) do, and (3) see. All of those stages has to be conducted collaboratively in a group. The aim of lesson study is to create a qualified teaching learning process. It focuses on how the students solve the problems or questions given by the educator in group to get the correct answers. In other words, it stresses the learning process conducted by the students themselves. Lecturer as one types of educator at higher education need to implement the lesson study activity to increase the higher education students' critical thinking[7]. Based on the background of study above, the questions that need to be discuss are (1) how the quality of the implementation of lesson study for lecturers is and how effective the implementation of lesson study in improving lecturers 'performance is.

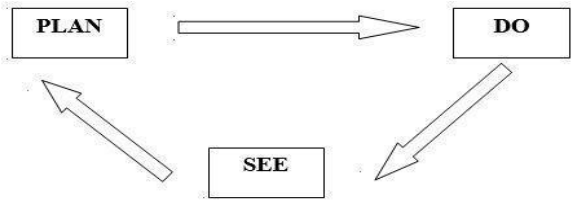
METHOD

This research is an experimental research that conducting pre and post-test. The research method applied is descriptive qualitative. The sources of data consist of documents and lecturers that selected with purposive sampling technique. The documents are the chapter designs and observation sheets, while the research target are the lecturers' of Faculty of Teacher Training and Pedagogy at Dwijendra University Bali who have not get lesson study training yet. Totally, there are 35 lecturers.

RESULTS

Lesson study is closely related to *Kounaikenshu*, namely a continuing professional development (CPD).Around 1960, *kounaikenshu* was basically a form of school-based in service training. The training is carried out continually where each teacher continuously conducts workshops with his colleagues to improve the quality of their professionalism. *Kounaikenshu* is a solution to various problems that arise in schools in Japan. These problems include bullying (intimidation from schoolmates), students do not want to go to school, student's academic achievement, etc. The application of *kounaikensh*u is divided into three parts, namely discussion before the teaching and learning process, teaching and learning process, and discussion after the teaching and learning process. The whole process aims to improve teacher competencies and generate new knowledge in the teaching and learning process. In the 90s, *kounaikenshu* evolved into *jugyou kenkyuu* where *jugyou* means lessons or lesson and *kenkyuu* means research. *Jugyou Kenkyuu* gives a bigger portion to teachers to express themselves in improving the quality of learning without having to be burdened with a rigid curriculum. This makes teachers and students more active and provides space for learning to be applicable.

Prof. Manabu Sato, a lecturer from the University of Tokyo, was one of the experts and one of the leaders of education reform in Japan who popularized the term *jugyo kenkyuu*. He expressed the need to create a learning community in school and open up the widest learning process in class to be observed by anyone[8]. Learning techniques that provide openness to input and criticism given based on the teaching and learning process that takes place is an open learning principle so that the teaching and learning process can be developed to be more quality[9]. In that era, many schools in Japan were mentally collapsed but with the formation of the concept of the learning community and the implementation of *jugyo kenkyuu*, the schools became resurgent[4]. Lesson study is an activity or a process of developing professional competence for teachers that is developed systematically in the education system in Japan with the aim of making the learning process in the classroom better and more effective[5]. The lesson study process involves groups of teachers with routine activities to discuss in planning the teaching and learning process, learning, observing the teaching and learning process, and discussing after learning to improve the quality of learning in the next process or meeting[6]. In Indonesia, lesson study is formulated in three steps: Plan (plan), Do (Implement) and See (Reflect). The stages are as follows:



Picture 1. The Stages of Lesson

The Quality Description of The Implementation of Lesson Study

The implementation of lesson study involving *plan*, *do* and *see* activities. In this research, there were 8 times of *planning*, 6 times of *do*, and 12 times of *see*. The results of the implementation of the lesson study stages is explained in the following:

1. *Plan*

Based on the observations in the *plan* stage consisting of 7 indicators, namely: (1) formation of lesson study groups, (2) creation of schedules of general activities of each team, (3) creation of rules for implementing lesson study, (4) creation of lesson design together, (5) preparation of lesson design begins with identification of problems in learning, (6) agreement and determination of the *do* and *see* implementation schedule, and (7) activeness of participants in the discussion, obtained from observations as in table 3.1 below:

Table 3.1 The Result of "Plan' Activity

Indicator	1	2	3	4	5	6	7	**Total**
Average	100	98.26	99.13	94.78	81.30	99.57	89.57	**94.47**
Qualification	Very Good	Very Good	Very Good	Very Good	Good	Very Good	Good	**Very Good**

Based on table 3.1 above, it is concluded that the *plan* activities were very good, as evidenced by the average quality of plan implementation obtained at 94.47 so that it was considered very good.

2. Do

The essence of the implementation of the lesson phase of lesson study is the implementation of the lesson design that has been made, where a lecturer acts as a presenter lecturer who brings lesson design in a real class, while other lecturers serve as observers. The position of the observer according to the agreement is spread on the edge of the class and behind the students in the classroom. Observers make observations in class based on the observation sheet that has been made and the agreed time.

Observation is mainly aimed at interactions that occur between students and students in groups, student interaction between groups in class, interaction between teachers and students during the learning process, student activity in learning and observing the time when students begin to learn and get bored of learning[10]. Observers are not allowed to intervene in activities carried out by students, so students do not feel disturbed by the presence of observers.

Based on the observations of the do stage which consists of 6 indicators, namely: (1) the lecturer who appears in accordance with the agreement, (2) the lecturer appears independently, (3) the presenter lecturer appears according to the lesson desgin that has been made, (4) observer activity does not interfere with the teaching learning process, (5) observers do not interact with students, (6) observers carry out the task in accordance with the agreed job descriptions, the observations obtained at the stage do as shown in table 3.2 below:

Table 3.2 The Result of "Do' Activity

Indicator	1	2	3	4	5	6	**Total**
Average	100	98.26	90.00	93.91	89.57	88.26	**93.33**
Qualification	Very Good	Very Good	Very Good	Very Good	Good	Good	**Very Good**

Based on table 3.2 above, it is concluded that the plan activities took place very well, as evidenced by the average quality of the *do*'s implementation of 93.33 so that it was considered very good.

3. *See*

The third stage of the lesson study activities is a reflection activity. The participants of this reflection activity were all lesson study teams, which included presenter lecturers, observers and other invited guests. The reflection activity was led by a lesson study participant based on the agreement as a moderator. At the time of reflection the lecturer who appeared as the presenter sat in front together with the moderator. Based on the observation

results in the see stage consisting of 12 indicators, namely: (1) the moderator introduces the lesson study team, (2) the moderator presents the rules of lesson study activities, (3) the impression and message of the presenter lecturer, (4) the presenter lecturer is given the opportunity to respond to observers' comments, (5) all observers were given the opportunity to speak and deliver their observations, (6) observer comments were based on concrete evidence of classroom learning, (7) observer comments were solutive and constructive, (8) observer comments focused on student learning activities, (9) reflection takes place in accordance with the predetermined plan, (10) the discussion goes well, (11) at the end of the discussion a final conclusion is made reflection, and (12) an improvement is made to the weaknesses of lesson design accordingly with the results of reflection. Based on the observations of all indicators, it can be reported as shown in Table 3.3 below:

Table 3.3 The Result of "See' Activity

Indicator	1	2	3	4	5	6	7	8	9
Average	100	100	100	98.57	97.57	81.1	83.2	83.4	100
Qualification	Very Good	Very Good	Very Good	Very Good	Very Good	Good	Good	Good	Good

Indicator	10	11	12	**Total**
Average	92,00	100	100	**94.64**
Qualification	Very Good	Very Good	Very Good	**Very Good**

Based on table 3.3 above, it is concluded that the *plan* activities took place very well, as evidenced by the average quality of the implementation of the saw obtained at 94.64 so that it was considered very good.

The Effectivenss of The Implementation of Lesson Study

In order to determine the quality of the effectiveness of the implementation of lesson study in improving the performance of lecturers in the learning process, measurements were taken twice, namely the measurement of lecturer performance in the learning process before and after the implementation of the lesson study. The measurement of lecturer performance in the learning process before the implementation of lesson study is carried out by observations made by the head of the study program and a development team implementing the lesson study. Based on the observation of the assessment team of 35 lecturers, the average score of the lecturers' performance in the learning process was obtained before the implementation of lesson study was 67.14 with standard deviation 8.50. If the average score of the performance of the lecturer in this learning process is compared with the assessment based on mastery learning, then the acquisition of the average score of the performance of the lecturer is included in the qualification. The findings obtained are: (1) in the aspect of planning the learning process, there are still deficiencies which are indicated by the absence of several descriptors from the assessment, (2) in the aspect of the ability to carry out the learning process there are deficiencies which are indicated by the absence of several descriptors.

One solution to overcome these deficiencies is by implementing the lesson study. After the implementation of lesson study based on predetermined stages and time, the average score of lecturer performance in the learning process is 78.18 with standard deviation 8.39. If the average performance score of lecturers in this learning process is compared with mastery learning, the average score is classified as good with a description of the findings as follows:

(1) the planning aspect of the learning process has increased, (2) aspects the ability to carry out the learning process is still lacking which is indicated by the absence of several descriptors from the assessment.

CONCLUSION

Based on the results of the study showed (1) the average score for the implementation of the lesson study for the lecturers in the Faculty of Teacher Training and Pedagogy Dwijendra University is 94.14 which is classified very good. (2) The qualification of the effectiveness of the lesson study in improving the performance of lecturers in the learning process is 0.36 based on normalized gain score which is ordinary classified formula.

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PEDAGOGICAL DIALOGUE: COLLABORATIVE LEARNING STRATEGIES

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Abstract. Collaboration between students is one of the competencies that is carried out in the 21st century learning. To improve this competency, a strategy and control is needed from the teacher as a facilitator in teaching and learning activity in the classroom. Not only from learning model, but also must be trained in habituation. To create, such habituation can be helped by giving teacher instructions and students' awareness of the importance of collaborating to create a superior generation. Habitual discussion, both class discussions and group discussions can be an indicator of collaborative learning habituation. Pedagogical dialogue can be used as one of the discussion strategies that are tried to be developed by science teachers at BPI 1 Bandung Middle School. Through this paper we want to share the results of the habituation. Of the 5 learning cycles in science class in grade VII, three of them will be discussed. The results of our analysis and studies show that pedagogical dialogue makes students more concerned about their peers (within and between groups), students 'knowledge becomes deeper and students' dependence on teachers decreases.It is hoped that after applying the refraction of this pedagogical dialogue students can foster a spirit of good cooperation so we hope that this pedagogical dialogue is carried out continuously in all fields of subjects.

Keywords: collaborative learning, pedagogical dialogue, lesson study, group discussion, intergroup discussion

INTRODUCTION

Learning science in junior high school level involves 3 subjects matter which are closely related, namely biological, physical and chemical. These three materials have an important role in human life so that students' understanding must be profound and contextual so that it can be useful for life.

A junior high school science teacher has its own challenges in meeting these needs. This is because universities in Indonesia have minimal science majors, so the qualifications of science teachers are divided into biology, physics and chemistry instructors whereas each material has very different characteristic.

Physics includes all physical changes that can be seen by the senses. All inanimate objects that change, whether they change shape, change position or change positions are studies of physics. Biology is all natural phenomena that concern living things. Moving animals, stretching plants, digestion of food is a study of biological science. While the chemistry study involves all processes that occur in living things and inanimate objects that are viewed microscopically.

Differences in these characteristics become a challenge and its own advantages to science learning because with the creativity of the science teacher, he can unite all these aspects so that students can view physically, biologically and microscopically. The challenge

that must be faced by a science teacher is the ability of teachers who must be able to master these three aspects, while in the upside is that a science teacher can provide information as a whole. If a science teacher can inform science material thoroughly, students are expected to be able to implement their knowledge in the form of attitudes.

Considering the very complex natural science material, a strategy is needed in the classroom so that teachers and students can be helped. That is, the teacher does not always have to explain all the material that students need because of the limited time to the amount of material. Likewise students may not fully listen to the teacher's answers. Because according to Confucius (in Vaillancourt: 2009) states,

"I hear and I forget. I see and I remember. I do and I understand "

Based on the statement, the science learning if only listening to the teacher's explanation will occur is the level of thinking of level 1 students (remembering). One effort to minimize this is practicum.

However, the phenomenon of practicum learning that occurs in Indonesia is again often tainted by the dominance of the teacher, both in the implementation of his own practicum and in class discussions so that according to the author it is like ordinary lecture learning which causes stagnant levels of students' thinking. In addition, according to Saito in the Research Teacher Seminar on Capacity Building through Lesson Study for Learning communities in June 2018 stated that teachers in Indonesia still adhere to 'UN oriented' where teachers feel they have a requirement to convey all material without regard to the level of students' thinking. In fact, this is not in line with the Indonesian government's program that expects the next generation of the nation to have 21st century skills including collaboration between students.

This will not be formed if learning is only done in one direction between teacher-students. It takes multi-direction learning that is able to hone and familiarize the collaboration process between teachers and students. So the writer tries a new habituation in the form of class discussion that focuses on the role of students in pedagogical dialogue.

Therefore, on this occasion the author will try to explain the lesson study-based learning experience focus on collaborative abilities through pedagogical dialogue in the classroom.

METHODE

This research was carried out in class VII D BPI 1 Bandung junior high school, located in Burangrang street number 08 Bandung. This class was chosen because the majority of students in this class have the capability on top of other classes. But the ego is still high enough so that there is no collaboration between students. The subject of the research is seventh grade D of BPI 1 Bandung Junior High School. This class has a number of students as much as 32 people consisting of 16 women and 16 men. Five students have a relatively good ability in learning science and four students who are weak in communicating.

Methods of research used descriptive analytical method; research that is based on problem-solving based on the facts and the facts that exist at the time of the incident, as well as a focus on actual problems that occur when the research is carried out. The approach used in this study is a qualitative approach. Qualitative research is research that produces data that

is not produce number obtained from the literature review, analysis and interpretation of the answers.

Based on the above opinion, the reason researchers using qualitative approach is to describe and explain natural events experienced by subjects in this research describes and explains how the process of changing ability students in collaborative teaching and learning activities of the professional competence of implementation results of teachers with the shape description words descriptive of its nature.

RESULT

On the stage of the plan, the MGMP team composed lesson design and worksheet with questions which are able to stimulate students to think. Here's one example is worksheet questions prepared for learning.

1. Berdasarkan pengelompokkan bahan pada kegiatan I, coba kamu jelaskan ciri dari masing-masing kelompok bahan tersebut dengan pengamatan PANCA INDERA!

These questions are useful to stimulate students to mention traits that test their solution using the five senses so that they could find a hallmark of each solution (a solution which we will use safe enough to be inhaled).

At this stage the plan is also a teacher with the composition of groups divides 2 male 2 female in hopes of good communication are happen.

At this stage do, teachers had already been instructed to work per group. Before the start of practical work, the teacher asked some students to assist in the demonstration in front of the class. These questions are useful to stimulate students to mention traits that test their solution using the five senses so that they could find a hallmark of each solution (a solution which we will use safe enough to be inhaled).

At this stage do, teachers had already been instructed to work per group. Before the start of practical work, the teacher asked some students to assist in the demonstration in front of the class.

Figure 1

From the picture above, students enthusiastically to help teachers do a demonstration in front of the class. It shows that there is a dialogue between teachers and pedagogical students so that students want to collaborate and be active in learning and teachers-ever open yourself to receive assistance.

From the results of the demonstration, teachers stimulate students distinguish 3 results demonstration in future.

Teacher: Who can distinguish between these three (results)?

By these questions can be seen teacher trying to create dialogue by inviting students to pedagogical thinking of students. After one person the students answer the questions, the teacher throw another question,

"What else?"

"Any ideas?"

With raised such questions, the teacher tried to dig up other students thought that it may happen the dialogue. But in this cycle has not seen students in intercultural dialogue digging ideas in more depth. On another occasion a teacher trying to explicate the challenging questions based on answers to students.

Student response to the question have attempted to answer more in-depth and not trying to dig back answers to students because based on the video documentation look the teacher does not respond and resolve the question until clear.

"Is the solution same or not? A said its color is the same"

If we analyze in terms of the performance of practical, there is collaboration within the group as expected. Even in the picture 3 seen male students moved his chair forward so that it could conduct discussions with female students. It showed a child's desire to do a collaboration with a group of friends.

Figure 2

Figure 3

There are things that are forgotten by teachers in an effort to develop a collaborative capability through pedagogical dialogue: teachers didn't instruct students to work between groups. This means that there is no instruction to do collaborations between groups so that each group still looks selfish in terms of wanting to be the fastest executed regardless of the confusion surrounding the group. It can be seen from Figure 4 that showed students are asking a thing directly to the teacher.

Figure 4

At this meeting teachers have no trust yet to students to do their own practice (Figure 5) as there is no instruction for mutual work between groups so that teachers still get around answering the question of students. Sure it is draining the energy of the teacher and of course the collaboration through dialogue between pedagogical students did not happen.

Figure 5

At this stage of the plan, the team compiled the MGMP lesson design and worksheet with questions which are designed to stimulate students to think. At this meeting the learning is carried out using demonstration method. Replacing the seating position where it was originally a group sitting in the same table 1, then at a meeting of the group this time have been sitting with the position as in Figure 6.

Figure 6

The meeting begins with teachers showing pictures of the railway. It is to stimulate the students to identify the problem. The pedagogical dialogue took place:

G: "What happened to the train? Raise hands! "
S1: "Trains cannot pass"
G: "Why?"
S2: "Enlarge Mam"
G: "Anyone want to add?"

Based on the above dialog snippet, visible intensity of the teacher asking has already started to involve more than one student, meaning that there is an increasing dialogue compared to previous meetings. It indicates the teachers started getting students to think not only the ' what ' but also requires a more in-depth answer. The teacher invited the student thought to what happened to the train.

In addition, from the dialog snippet above, teachers started getting used to orderly in reply. Seen from the instruction of teachers for raising hand first before answering questions.

Figure 7

Further, the teachers began to ask more in depth so that this kind of pedagogical dialogue occurs.

G: "What happens to the rail when it expands? Raise hands! "
S1: "Widen"
S2: "Trains cannot pass"
S3: "Lengthen"
S4: "Widen"

G: "If you expand what's changed?"
(no one answered)
G: "How can I not do this?"
S1: "There must be a gap"
G: "Can you repeat Faza?"
S2: (not answering)
G: "Or maybe Zelita has other ideas than to expand?"

Hear the answers to students based solely on what they see, the teacher starts by giving students thought provoking another stimulus.

The above footage of teachers continue to try the students to think so find answers themselves although students cannot give the answers expected. But at least the teachers are already trying to create a dialogue within the pedagogical concept of digging in more deeply.

At the time of start of demonstrations, teachers share the worksheet to each student. There are instructions from the teacher to keep discussion group even though each student get worksheet. That is, the teacher expects discussions within the group so formed a thought transfer from one student to another student.

At this meeting, collaboration between groups has not yet been formed. It is indicated because there's no conditioning of the teacher in the form of special instructions for asking for things that are not understood by them to other groups.

At the meeting this time also, on several occasions when the teacher is being explained how it works demonstration, teachers still answer questions when there are students who ask. It should have things that concern the workings and the concept returned to other students so the pedagogical dialogue formed. At this stage teachers still feel satisfy with an answer one child without any response from the other students.

At the demonstration, teachers demonstrate thermal expansion using Moessenbroech with 3 different types of metal. The teacher asked the students to help three people in front. Before it is heated, the teacher asked the students to measure the initial temperature and initial length is then written on the chalkboard so that other students can see the initial data. To minimize the numbers of students that can't see the demonstration in front of the teacher, a handycam is used, connected to the projector so everyone can see the all the demonstration.

G: "Who wants to express an opinion?"
S1: "Why does the metal 1 directly extend?"
M: "I think you can answer? Why?"
S2: "Oh I know ma'am. Because the fire is closer to metal 1. Then the initial temperature is also higher "
G: "Oh yeah ... anyone else wants to add?"
S3: "The metal is different in type bu"
G: "What's the other?"
(no one answered)
M: "Look, which one is stretched?"
S1: "Number 3 heavy metal bu"
M: "So from the answers, you want to ask Sidiq's opinion. How?"
S4: "So the metal 1 extends directly because the metal is different and the fire that knows more (so the temperature is higher)"

Based on the dialog above, teachers trust to students to suggest problems that they see from the demonstration in front of the class. Next the teacher becomes a facilitator in solving those problems. In the dialog that looks a lot more students who are actively involved in the dialogue. In addition to developing the concept, it also triggers a collaborative student ability because there is no collaboration then the problem posed by one of the students will not be solved. On the dialog visible teachers start ' not satisfied ' with student answer although no follow-up by asking other students to respond to the answers of the students. This means that the teachers only invite other ideas without challenging other students to respond to previous answers.

It is also can be seen that the teacher not only bring up the dialogue on the concept that is being taught, but also dialogue on science phenomena that occurs.

S1: "Mom, why is the fire shrinking? "
S1: "Why? Anyone?"
S2: "The sticks get smaller (run out)"
S3: "What's the other?"
S4: "The sponge is gone, ma'am"

Teachers intended to explore related concepts students knowledge often they see everyday on combustion.

The moment when burning is complete, 3 needle pointer on moessenbroech shows different numbers. Again the teacher gives the opportunity to students to pose problems.

S1: "Why does the second metal not move (second metal needle)?"
G: "Why?"
S2: "Because the metal is different. Who knows the metal is more dense or tight when exposed to fire ”

From the answers above looks S2 tried offering answers that the shape is like guessing. S2 does not know the truth but S2 try to help resolve the issues discovered by S1. From here the student collaboration in the form of a visible dialog pedagogical concept though it hasn't exactly.

G: "Oh yeah ... the others?"
S3: "The initial temperature is smaller"
S4: "Just keep talking about the temperature" (saying S3)

From the dialog above looks S4 answered chimed in linking data with the initial temperature of the lengthening of the metal. Actually, when seen from the concept that want explained by S3 is quite possible to be discussed but the S4 chimed in by refusing to answer from S3.

In the advanced dialog, teachers looks like trying to give a continuous stimulus so that students can find the reason why metal can expand. Teachers provide illustrations of real context so that the students can give an answer that not only in terms of the macroscopic. The dialog is visible from many students involved in the discussion. Some students start doing jumping material by linking material was being discussed with the material they already know.

From that dialog looks S5 started thinking of macroscopic thinking levels until finally he could describe microscopically that turns off the metallic constituents to break so that the elongated. Although the answer is given in simple words but the answer's already touching the metal part of the constituent molecules.

From there the visible presence of stages of thinking students in finding the pedagogical concept through dialogue with the help of stimulus-stimulus given teacher. And the invention of this concept will not work if between students and teachers not to collaborate in solving problems that are found from the results of the demonstration. Until eventually the student can connect between the concept of which has been obtained by the problem expressed in early learning

The meeting is also visible there are things that attract the attention that is one of the students helps correct the masks used by his friend. It will not happen if the communication

G: "What's the other?"
(no one answered)
S5: "Maybe because the substance inside the metal doesn't react to heat"
G: "Others want to argue other than that?"
S6: "The reaction of the metal if it is exposed is taking time"
M: "Okay, what happens to the metal when heated?"
S5: "become liquid"
G: "If you physically look like you are expanding, what happen inside?"
S7: "Oh, this, conductor! Heat conveyor ”
G: "Why is it (can it deliver heat)?"
S8: "I mean the metal is expanding, what happen inside?"
G: "Yes"
(S8 thinks)
S5: "It's easy to run"
G: "(Conveying the parable of the person who ate spicy rujak) Now what about metal? Farenzi wants to express an opinion? "
S9: (not answering)
G: "Okay, what happens when the metal is heated inside?"
S10: "There is a reaction"
G: "What is the reaction?"
S5: "Inside constituents are separated into longer ones"
M: "If so, if it is connected to the railroad tracks at the beginning, why should there be a gap between the rail connections?"
S9: "Because he said the compiler is separate, so it needs more space"

between the two of them did not go well. And communication can be created properly if communication in a group of intertwined nicely also. It means caring students grow in this process.

Figure 8

CONCLUSIONS

Based on the above, the exposure can be summed up some of the following:

a. At the confluence of the acid base salt material, teachers not yet accustomed to feeling dissatisfied over the student's answers so that no further answer to throw to the other students to unearth the thinking of other students. This means that pedagogical dialogue has not yet been formed. At the meeting the material expansion and material change in energy, students who actively participated in the class discusses dialogue increase. This means that the teacher is trying to embrace more students to participate actively in learning so observationally the most influential pedagogical dialogue can be summed up the thinking of students. Students become social interactions to think in complete one topic problems, which in the end the students can understand the material better.
b. Influence pedagogical dialogue against the teachers, namely teachers become more anxious in the face of the student until the student can find himself he thought patterns so that the students can contruct knowledge students want to wake up.
c. In terms of word choice in asking the question to the students, the teacher tried to invite ideas from students about a thing and developing other ideas with different previous ideas that students provide. In addition teachers tried to ask the students to explain a thought which was conceived by other students. At the beginning of learning, teachers always give challenging questions that make students able to guess/suspect what will happen.
d. From the conditioning of this pedagogical dialogue seen students attempted to collaborate within groups as well as between groups even though this pengkolaborasian still have to be instructed by the teacher so that dependence on the teacher is reduced
e. The third of the above study, the teachers and students there is a desire to collaborate.
f. Awareness students become more honed.

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MALAY LANGUAGE TEACHERS' PERCEPTION TOWARDS PROFESSIONAL LEARNING COMMUNITY (PLC) LESSON STUDY IN THREE DISTRICTS IN SARAWAK

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Abstract. *The study aims to examine the perceptions of Malay language teachers towards their understanding and knowledge of the Professional Learning Community (PLC) Lesson Study. Respondents for this study consist of 100 Malay language teachers who have been exposed to collaborative tools of PLC Lesson Study either through courses and workshops by the Ministry of Education, State Education Department and District Education Office. This study was carried out by distributing questionnaires to all respondents in Likert Scale. The data collected were analyzed using SPSS version 19. The data were translated into the form of frequency and percentage. The study was conducted in the districts of Selangau, Kanowit and Sibu in Sarawak. Researchers are keen to gain understanding and knowledge of Malay language teachers towards PLC Lesson Study as the PLC Lesson Study is found to have contributed significantly in the teaching and learning as well as to enhance teachers' pedagogical skills collaboratively. The findings showed that the respondents' perception of PLC Lesson Study was positive on the scale of 4 (61.5 percent) with mean 4.02*

Keywords
Professional Learning Community & Professional Learning Comunnity (PLC), Lesson Study (LS), Perception, Third International Mathematics and Science Study (TIMSS), Teacher Education Division (BPG) and Aminuddin Baki Institute (IAB)

INTRODUCTION

Lesson Study is the latest practice in the education community introduced by the Ministry of Education. The term Lesson Study refers to the learning in the Teaching and Learning process. It has been practiced for more than a century in Japan as a model of professional development of teachers (Isoda, 2007). However, this model was more solid in the 1960s and now, has become a part of the teachers' culture in Japan, especially in primary schools (Fernandez & Yoshida, 2004). Lesson Study, in Japanese is known as *Jugyoukenkyuu*. *Jugyou* means lesson or teaching, while *kenkyuu* is a study or research. In other words, Lesson Study is a study, research or an investigation on teacher teaching in the classroom (Zanaton, et al), 2013. The Ministry of Education Malaysia has introduced Lesson Study in the Professional Learning Community (PLC) at 289 schools in 2013 (Zanaton, et al).

In 2014, 82 schools in Sarawak were listed by the Ministry of Education (MOE) to practice the PLC. A total of 49 secondary schools and 33 primary schools were used as pilot schools for PLCs. The beginning and development of Lesson Study in other countries may be linked to a video study of TIMSS (Third International Mathematics and Science Study) in 1995. This video review involved three countries, namely the United States, Germany and Japan. The study found that the teaching and learning in Mathematics in Japan is effective

and of a very good quality. In the 'The Beginning Gap' book, TIMSS video analysis is described and Lesson Study is identified as a contributing factor to the high performance of teacher teaching in the Japanese classroom (Stigler &Hiebert, 1999). Since then, research studies on Lesson Study have shown that this model is able to improve and preserve the quality of teacher teaching and pupils' learning in the long run.

In general, Lesson Study provides a discourse or opportunity in improving teacher professionalism. It is a unique and a bottom-up model compared to other teacher professional development models. It is based on the teachers own initiative and not under the order of a superior. In order to incorporate the Lesson Study culture, teachers need to change the paradigm in line with the concept of lifelong learning. Based on this approach, school teachers collaboratively work on a daily lesson plan (RPH) that focuses on student learning. Collaborative practices that require the incorporation of ideas, experiences and skills will enhance the knowledge of the content as well as the knowledge of teachers' pedagogical content. The process in Lesson Study which includes meetings and discussions of a group of teachers will improve the knowledge, the development of ideas as well as the individuals' creativity in the process of building daily lesson plans together. This practice can also foster a sense of belonging among teachers in school. The benefits of such practices should be continuously nurtured and established until it becomes a culture of teachers in school. This practice is expected to produce excellent, quality and world-class schools.

Statement of problem

Education plays an important role in the economic growth and the nation-building. The development of world-class human capital is a prerequisite in bringing Malaysia into the global economic competition of the 21st century. Thus, the Government Transformation Program (GTP 1.0) has placed education as one of the National Key Result Areas (NKRAs) which focuses on all students to have access to education quality and affordability. The goal of the National Key Result Areas (NKRAs) is to improve student performance by focusing on four sub-disciplines: Preschool, Literacy and Numeracy (LINUS), High Performance School and New Deals to principals and headmasters.

Studies in school effectiveness found that student performance was influenced by high performance school systems supported by two key components which are leadership and teachers qualities. In order to improve school performance through overall quality improvement, all schools are positioned through the listing process and awarded ranks from Band 1 to band 7. A number of schools in the low-performing category have been given support and encouragement to improve their leadership and teaching and learning aspects.

Teachers and school leaders are given training for professionalism development by certain departments of the Ministry of Education, such as Teacher Education Division (BPG) and Aminuddin Baki Institute (IAB). Among the initiatives implemented by the BPG to ensure the sustainability of teachers' quality is the Professional Learning Community.

The selection of PLC as one of the initiatives in improving teachers' quality is based on the trend and education growth in well-developed countries towards the establishment of professional learning community among educators. It is seen as an effort that can enhance teacher professionalism. The concept of a professional learning community in these countries encompasses collaborative activities between schools and those outside the school community. Schools are allowed to invite stakeholders into the classroom to translate the

curriculum and its delivery, as well as collaborative activities between the stakeholders and the school to strengthen education delivery to improve student achievement.

This study will focus on PLC Lesson Study as a source of reference as it is one of the most well-known collaborative tools. It is also pupil- and teacher-friendly. This study is hoped to unravel the level of understanding and knowledge of the teachers towards the PLC Lesson Study. The researchers argued that this study needs to be conducted as the Malay language teachers in Selangau district had been exposed to PLC and its collaborative tools, especially Lesson Study.

Aim of study

This study was an early study of the researcher to find out the perceptions of Malay language teachers towards the collaborative tool of the PLC Lesson Study. Through the collaborative tool, the researcher will demonstrate how the Malay language teachers in Selangau district carry out the teaching and learning activities and improvement strategies. In addition, this study aims to see the level of understanding of Malay language teachers on Lesson Study as one of the strategies in their teaching. This study is also expected to prove that the working principle or principle of PLC members working in collaboration has resulted in the quality of teaching and learning of teachers (Mitchell &Sackney, 2000; McLaughlin & Talbert, 2001) which reflects the learning that occurs in each individual teacher has implicated the various school improvement programs at schools involved in the study.

METHOD

The data analysis has been done based on each question item using descriptive statistic method. The percentage value is calculated to examine the percentage of respondents who agree on each item. Each question item will also be further broken down based on the six PLC rubrics to examine the frequency and percentage of every item.

RESULT

There are eight items in this part which are Item 10, 12, 13, 17, 20, 21, 26, and 35. Item 10 scores the highest percentage for agree scale at 58%, followed by strongly agree at 24%, unsure at 15% and disagree at 3%. For Item 12, the highest percentage is recorded at 38% for strongly disagree scale, followed by disagree scale at 32%, unsure at 19%, agree at 7% and strongly agree at 4%. For Item 13, the agree scale scores the highest percentage at 72%, followed by strongly agree at 20% and unsure at 8%. Meanwhile, Item 17 scores the highest percentage for agree scale at 63%, followed by strongly agreed at 28%,, unsure at 8% and disagree at only 1%. For Item 20, the highest percentage is at 68% for agree scale, followed by strongly agree at 20%, unsure at 10% and disagree at 2%. For Item 21, the highest percentage is at 68% for agree scale, followed by strongly agree at 22% and unsure at 10%. Item 26 on the other hand records the highest percentage at 64% for agree scale, followed by unsure at 18%, strongly agree at 17% and disagree at only 1%. For Item 35, agree scale scores the highest percentage at 63%, followed by strongly agree at 25%, unsure

at 8% and only 2% of the respondents disagree and strongly disagree with the statement respectively.

CONCLUSION

The PLC is an important agenda in the Teachers Quality initiative under the NKRA as well as a key driver of the transformation of the Regional Education Office throughout Malaysia. The PLC will be an important driver that should be used as a work culture among school administrators and curriculum implementers ie teachers. All members of the PLC community need to make pupils' learning, collaborative work and key performance indicators (KPIs) focus on the planning of activities towards achieving the school. It is hoped that the PLC will be able to inculcate the following aspects;

a. Nurture knowledge and understanding about PLCs
b. Make PLC a platform by all educators to establish a best practice sharing network either at the district or school level.
c. Sharing and exchanging positive impact on the implementation of PLCs in schools.
d. Share and exchange ideas on solving issues arising during PLCs implementation in schools through inquiries and action research.
e. Sowing and nurturing a research culture among educators as a dynamic need to generate innovation in teaching and learning process in schools.

Through the findings of this study, it can be concluded that the Malay language teachers in the Kanowit, Selangau and Sibu districts of Sarawak are aware of the importance of the collaborative culture of PLC Lesson Study. They also understand and understand the importance of Lesson Study as a tool for enhancing self-professionalism and improving skills in teaching and learning aspects. PLCs will be a culture if there are three main ideas underlying them;(Hord 2011)

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THE PROCESS OF STUDYING A COGNITIVE EMPATHIC UNDERSTANDING: STUDENT INTERACTION APPROACH

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Abstract. Empathic understanding is one of skills in counselling. It not quite the same with reflection of feelings, yet it need to be in accordance with other's experiences and feelings (Hill & O'Brien, 1999). The challenge in teaching empathic understanding is to teach the cognitive side of empathy. This study explore the concept of cognitive empathic understanding through student center learning where students interact using paper work and sharing in class. In the first cycle in which students tell a situation and generate question from the situation, they also write down their own reflections. On next cycle, students will exchange paper works and try to understand other's feeling, thinking, doing in other's situation. The third cycle, students will share their experiences in understanding other's feeling, thinking and doing and discuss the similarity and difference in each other reflections. Results will be discussed further.

Keywords— empathic understanding, empathy, process, student interaction, counselling.

INTRODUCTION

The term counselling is familiar in the helping profession context, such as psychologist, counsellor, doctor, social worker, psychiatrist, teacher and so on. Counselling can act as the means to help people helping themselves [1], and the goal is not to 'solve' problem but facilitate people to deal with the problem more effectively or look for new possibilities in the way of looking the problem [2]. Therefore, the working alliance between counsellor and client is the crucial factor to make an effective counselling. Rogers introduce three key components; the unconditional positive regard, accurate empathy and genuineness as the basic foundations in the therapeutic progress. The counsellor needs to demonstrate skills which encompass those components in the counselling process and those components also need to be perceived by the clients. Thus, according to Rogers, who institute the term as person-center therapy, helping relationships only happened when there is empathic condition in counselling [2].

Empathy itself imply on understanding of other's experience as like their own self experience; including how they feel, think and act on that situation. Its term sometimes misunderstood same as reflection of feeling, which is a set of techniques to help client identifying and accepting their own feeling [3]. Counsellor used reflection to actively engage with the client so they will have better understanding about the client. Meanwhile, according to Rogers, empathy is more like an attitude to be in tune with other's experience. Thus, empathy does not work only about affective, but also in cognitive component to reach better understanding [1]. When empathy activated both affective and cognitive components,

counsellor will be able to use symbiotic term which help client to experience new way on understanding their situations.

Most of the time, empathy has been taught by practicing counselling skills. Students will practice it with their friends and supervised by mentor and lecturer. Through doing counselling practice, students develop their skills, mainly on reflection of feeling as way to understand other's. Students has been through three classes which trained them with counselling techniques (Counselling Psychology, Basic Counselling Skills and Group Counselling), they already familiar with counselling setting, in individual and group settings. Those classes focus on monitoring student's counselling skills which assess if the students have developed their skill and less focus on if their empathy has been attuned with the client. The weakness of this method is students tend to do reflection of feelings as way to understand client, and only repeating the term which used by the client. Likewise, this method still lacks on reviewing the student's cognitive empathic understanding of client's problem.

This paper will discuss the process in Micro Applied Clinical Psychology which focused on teaching the cognitive component on empathic understanding. The aim of this paper is to examine the student interaction approach as method to assess cognitive empathic understanding. In counselling settings, students were already familiar expressing their emphatic understanding through verbal language. Instead of making interaction based on counselling settings, this class opt to use worksheet as tools to communicate story and expressing emphatic understanding. Thus, students will learn to express their emphatic understanding through written words. This written skills in counselling context will play major role in the future, especially if technology would take part in counselling such as online counselling. The working relationship would not only be happening in face-to-face situation between client and counsellor, so counsellor should be able to express their empathy through written words. This is where cognitive empathic understanding will play significant role on understanding client's experience and expressing those understanding through written words.

METHOD

Class Settings

The class was divided into two classes, each class contains 45-50 students. There are three cycles and each cycle were carried out in one class meeting which consists of 135 minutes. Students were randomly paired with other students in the same class. We asked students to make a story board about their time in high school, and to bring the story board in the first cycle. Using those story board, they narrate their situation during high school, especially memorable moment. Students then did reflection such as what they taught, felt and did on that situation, and at the end they generated questions. On the second cycle, we gave their friend's worksheet that contained their narration of situation, and asked students to write down their own empathic understanding of how their friends feel, think and act. After that, they were given their friends question worksheet and tried to answer those questions. During the third cycle, students had their friend's response from the previous cycle. We asked students to compare their answer with their friend's answer and wrote down how they think and feel after reading.

Participants

The participant of this study were 100 students of Psychology major, which made up from batch 2014, 2015 and 2016. All of them have passed the Counselling Psychology, Basic Skills in Counselling and Group Counselling, they also taken the micro skill training session. In this micro skill session, they have practiced basic skill of counselling with client both individually and in group. Based on previous classes evaluation, there are several counselling techniques that students have not mastered, such as linking technique and the ability to identify client's core problem. Linking technique is used to relate one issue with another in individual context or relate one's person issue with other in group context. Most of the students were able to do reflection of feeling, even though they tend to imitate from the given example.

Measurements

So far, the measurement of empathy, either cognitive or affective was develop as self-report. In the context of counselling, there are no measurement to see the fitness of empathic understanding that given by students. Those classes focus on monitoring student's counselling skills which assess if the students have developed their skill and less focus on if their empathy has been attuned with the client. The assumption was the more students mastered the counselling skill, they would able to give empathy appropriately. Therefore, this class will try to measure the correctness of empathic understanding. In this class, students will be both a counselor and client so it was possible to obtain feedback directly from other students. For the pretest and posttest, we gave students a counselling case study, in which we will compare answers given by students and mentors. Mentors is Psychology students of batch 2014, 2015 and 2016 who were chose by lecturer because of their excellent counselling skills during previous class. Mentors were also act as an assistant lecturer in guiding students during practice skills, thus considered to have better empathic understanding. There were 20 students as mentors in this study.

Measurement of empathic understanding on this study consist of three cycle. In the first cycle, cognitive empathy understanding is measured by giving a case study to students and mentors. They were asked to write down their own empathic understanding of how the client feel, think and act. In the second cycle, cognitive empathy understanding is measured by comparing worksheet 3 and worksheet 4. Worksheet 3 was reflection sheet about their own feeling, thought, and act related to their story, meanwhile worksheet 4 was student's reflection sheet as a counselor related to how they feel, think, and act about their friend's story. The third cycle, cognitive empathy understanding measured by worksheet 5 and case study (posttest). Worksheet 5 was student's reflection sheet about how they feel, think, and act related to their friend's response on worksheet 4. The correctness of empathic understanding will be shown on worksheet 5. At the end, all of students and mentors were asked to analyze case study (posttest) that different from pre-test.

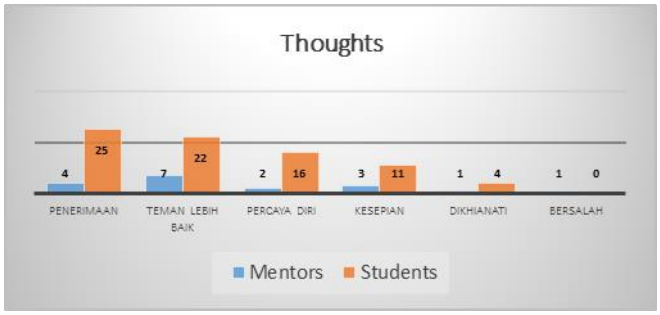
Data Analysis

In analyzing data, we used NVivo 10 to code data until we obtained a complete category, then calculate categories that appear most frequently. Pretest and posttest data were analyzed by comparing student's empathic response and mentor's related to thought, feeling, and the cmain problem. Mentor's empathy response act as reference to see the correctness on

empathic understanding. If student's category resembled mentor's theme, it shows the fitness on empathic understanding. Furthermore, posttest data was used to find out whether there will be an increase in cognitive empathic understanding. In third cycle, result of data coding on worksheet 3 and 4 in the form of thought, feeling, and act was compared and then divided to three category, "identical", "similar", and "not identical". If there is more response that classified as "identical" and "similar" than response that classified as "not identical", it means student's empathic understanding towards their friend's experience was correct. Similar to the previous technique, we coded worksheet 5 until we obtained categories on how they feel, think, and act related to their friend's response on worksheet 4.

RESULTS

We divided results based on the process on the class, the first cycle, the second cycle and the third cycle. In the first cycle, we gave a case study as pretest, and we used the mentor's answers as comparison of the approximate answers. On the second cycle, we compare the student's reflection of thinking, feeling and action with their friend's empathic understanding on thinking, feeling and action. For the third cycle, we code student's thinking and feeling after reading their friend's empathic understanding. We also did the posttest at the end of the cycle.*The first cycle*

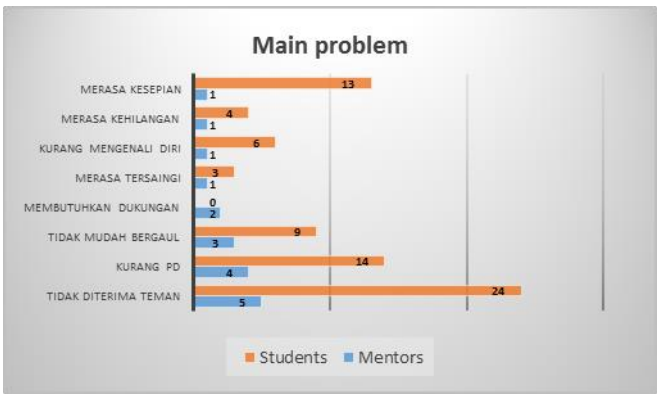


Pretest on client's thought

Based on the pretest, 78% of students has the similar answers with mentors in reflecting client's thinking. This shows that students and mentors comprehend the client's thinking on the same page, such as client's think that her existence was not important or her friend is much better than her. If we compare the content of thought on student's and mentor's answer, we can see that most of students (32%) express that client mostly thinking that her existence was not important. Meanwhile, most of the mentors (87,5%) focus on client's friend was much better than her. So, there still a slight difference on empathic understanding between mentors and students on client's thinking process.

Pretest on client's feelings

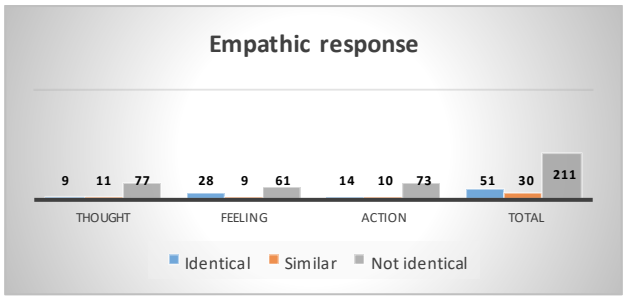
On the other hand, we can see more bigger numbers on reflecting client's feelings, on either mentors or students. This shows that mentors and students are more able on understanding how client's feels, so they can give more than one answer. When we look further in the type of feelings, most of the students (26,71%) choose annoyed, while mentors (28,57%) pick sad as the dominant feeling of client. Once again, we can see the slight difference response on understanding client's feeling.



Pretest on client's main problem

On identifying client's main problems, most of the students (73%) has the similar answers with mentors. The interesting part is 13% of students choose feeling lonely as client's main problems even though it was not a common answer on mentors, and 11% mentors who choose that client's main problem is needing support was not picked as answer at all. Thus, from the pretest, we can conclude that most of students can use cognitive component on understanding client's experience. Yet, they still have some trouble on identifying client's main problem.

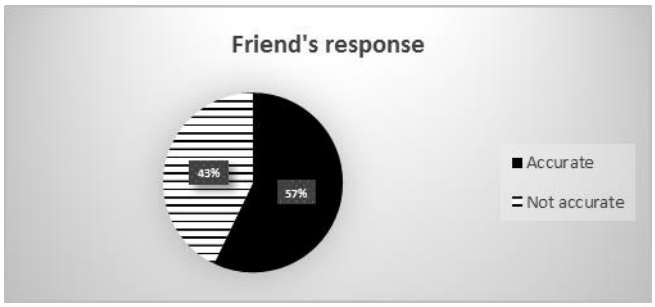
The second cycle



Student's empathic response

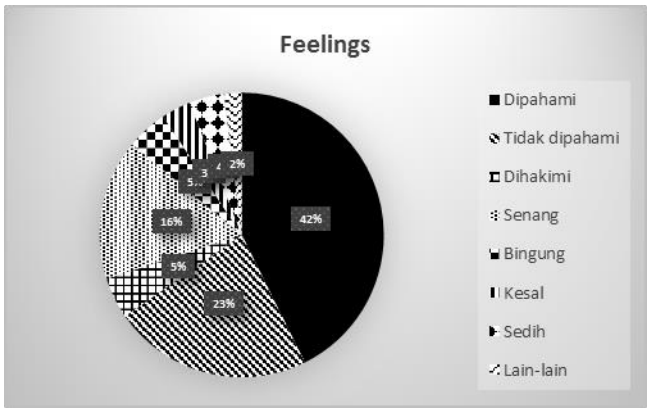
We established results in empathic response based on comparing answers on worksheet 3 and worksheet 4. We code the answers into three categories, identical word, similar word and not identical. Surprisingly as we can see from the table above, the total of not identical word is the highest than other categories. Words that reflecting thought are the largest not identical numbers (36,49%), followed by not identical word which reflect the action (34,6%). Meanwhile, we can see that most of the answers of identical word are on the reflection of feeling (54,9%). This outcome was aligned with our prediction that students were familiar with affective component of empathy. Most of students use terms of feeling as way to understand their friend's situation and still struggle using the cognitive component to comprehend especially in the way their friend's thinking.

The third cycle



Friend's empathic response

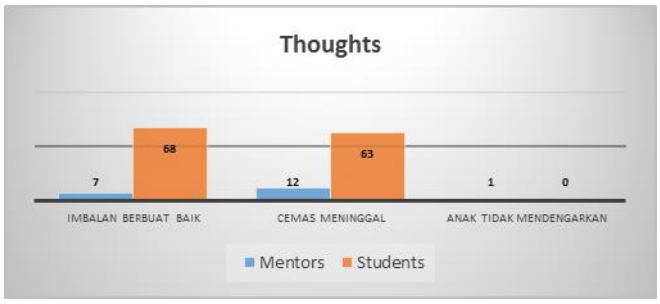
On the third cycle, we asked students to identify their feelings and thoughts after they read response written by their friends (worksheet 5). 79% students felt that their friend's response was accurate and in tune with their own feelings and thinking. Some of the students (21%) felt their friends could not gave the right response, they thought their friends did not understand their experience.



Student's feeling on friend's empathic response

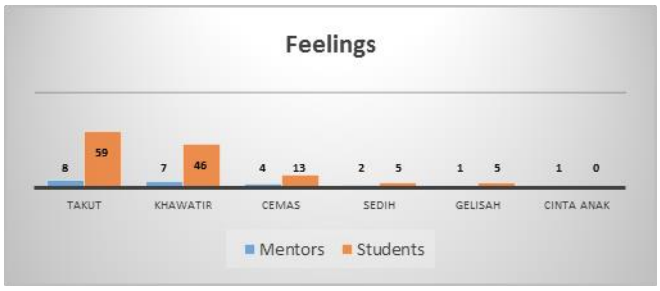
When we asked students about their feelings, most of them (42%) felt that they were being understood by their friend's responses. There are also students (23%) which felt their friends could not understand their perspectives and felt being judged (5%) from reading their friend's response. Although the primary feelings which emerge is happy (16%), there also

various negative feelings that encompass student's feelings such as confused (4%), sad (5%) and upset (3%).



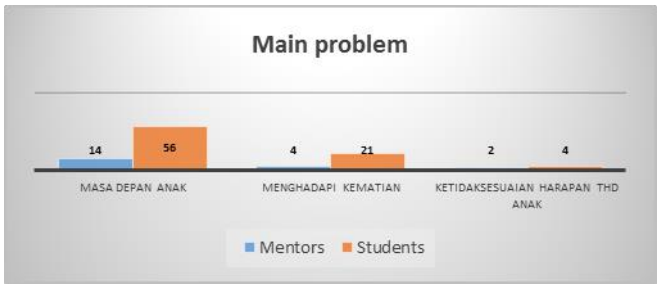
Posttest on client's thinking

On the post test, we can see the bigger numbers of similar answers between mentor and students. Mostly students choose that client doing good act to get something in return (51%), meanwhile mentor answer that client has lot of anxiety about death (60%). Therefore, there are slight increase on percentage of similar answers with mentors on reflecting client's thinking.



Posttest on client's feelings

As for reflection of feelings, there also increase of similar answers between mentors and students. Fear is the most common feeling in mentor (34%) and students (46%). If we look further, both mentor and students identify the same order of feelings, 30% mentors and 35% students put worry as the second feelings and anxious as the third (17% mentors and 10% students). We can conclude that students are becoming more accurate on understanding client's feelings.



Posttest on client's main problem

Students analyzed her children future as the client's main concern (69%) just like mentors (70%). In the second place, both mentors (20%) and students (25%) select facing death as client's main problem. This also reflect that students could identify better client's problem. Based on posttest, we can conclude that students are more accurate on understanding client's thinking and feeling and also more accurate on identifying main problem.

CONCLUSION

On the third cycle, we asked students to do discussion with their friend whom they exchange their worksheet with. The purpose of the discussion is to validate their empathic response by comparing their own way of thinking and feeling with their friends. We asked them to write down their insight from discussion and though we cannot code the data because of too much variation, we found that most of students were not comfortable with this written worksheet to give empathy. Most of them are afraid that they were giving judgement on how their friends thinking and feeling. When we probe about the difference in counselling practice, they feel more assurance in giving empathic response in practice rather in writing. In practice, they can clarify their empathic understanding by looking clue from the nonverbal gesture of clients, at the same time they cannot do by only reading and writing. Students are becoming more aware with their own value in understanding their friend's experience or in giving empathic response is another insight gained from the discussion. They learn that sometimes in trying to understand other's experience, they did not bracket their own value or experience, thus they will try to explore the client's experiences deeper in practice. From this experience they figure out the form of cognitive empathic understanding.

It is interesting fact that most of our students are more secure to test their own empathic understanding while facing the client. It shows that students were more comfortable with the affective component of empathy, which mainly act as emotional response to other's experience [7]. Thus, we can conclude by student interaction approach, students can improve their knowledge and understanding of cognitive component of empathy. Students are able to understand on how client's thinking and feeling with perspectives taking (cognitive) and emotional response (affective). The limitation of this study is student's lack of skills in writing, they found it hard to express and describe their experience through written word, they already comfortable to tell their story in counselling practice.

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INSTRUCTIONAL DESIGN LINEAR EQUATIONS IN TWO VARIABLES USING DART GAMES AND LESSON STUDY FOR LEARNING COMMUNITY (LSLC)

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Abstract. This study aims to design Local Instructional Theory (LIT) of linear equations in two variables using the PMRI approach and Lesson Study for Learning Community (LSLC) system. This study involved students, in cycle 1 involving six students and in the second cycle involved 32 students in junior high school 1 Palembang. Data were collected through student activity sheets using a dart game, pre-test, post-test, video, and interview. Data were analyzed by comparing the Hypothetical Learning Trajectory (HLT) and what happens during the learning process. The results of the analysis show that learning using the PMRI approach and the LSLC system can support and assist students' understanding of linear equations with two variables.

Keywords: Design Research, PMRI, LSLC, Linear Equations in Two Variables, a Dart Game

INTRODUCTION

Algebra is not just determining the value of the variable x and y but is a way of thinking. Students are expected to develop algebraic skills including procedural skills and conceptual understanding. But in reality found many students have difficulty in learning algebra where they do not understand the basic concepts well and why certain ways are used in its completion (National Mathematics Advisor Panel, 2008).

21st century skills or known as 4C (Creative, Critical Thinking, Communicative and Collaborative) are actually the objectives of the 2013 curriculum, not just the transfer of material, but mastery of skills and problem solving to problems that require high-level thinking (HOTS) very the teacher's creativity is needed in the process (Kemdikbud, 2013). The learning model / method / approach is no longer teacher-centered, but must focus on student activities. Joyful learning and meaningful learning are very suitable to meet the demands of the curriculum. A realistic and easy to digest approach.

Fun learning and meaningful learning are very suitable to meet the demands of the curriculum. A realistic and easily digestible approach will make learning meaningful where this is in accordance with the characteristics of PMRIs that use the Lesson Study for Learning Community (LSLC) system. LSLC is an activity system consisting of the stages "Plan, Do, See, Redesign".

Plan is a collaborative planning to design starting from the lesson plan, material, context and learning model, is a process where teachers discuss, share and provide input and deepening of the material, learn from various media or teaching aids and how to run the core activities . While the "Do and See" stage is a process for teachers to find and express problems that occur in learning activities and learn from each other about teaching skills.

Seating plan with the letter "U" which aims to allow students to see the faces of other friends who are expressing their opinions. The number of members 3 or 4 where men and women sit cross-legged can prevent students from chatting unnecessarily (Sato, 2012).

One of the algebraic material in the 2013 curriculum for junior high school is linear equation in two variables (Kemdikbud, 2013). The first problem that arises in this material is that students often make mistakes in using substitution and elimination methods, because students do not understand with every step that must be used. Many students do not understand when the system must be added or subtracted and when multiplication is made with a number to add or subtract the system. Students experience problems in solving story problems because of difficulties in forming the equation. One way to help students solve problems like this is to collaborate. This study aims to design Local Instructional Theory (LIT) of linear equations in two variables using the PMRI approach and Lesson Study for Learning Community (LSLC) system in junior high school 1 Palembang.

PMRI according to Soedjadi (2007) is a Mathematics Education as an adaptation of Realistic Mathematics Education (RME) which has been harmonized with the conditions of culture, geography and life of the Indonesian people in general. According to Zulkardi & Putri (2010) PMRI is a learning approach based on "real" things for students, emphasizing skills "process of doing mathematics", discussing collaborating arguing with classmates so they can find themselves and ultimately using that mathematics to solve problems both individually and in groups. According to Van den Heuvel-Panhuizen (Wijaya, 2012; Putri, 2018), the use of the word "realistic" does not merely show the existence of a connection with the real world but rather refers to the focus of Realistic Mathematics Education in placing emphasis on the use of a conceivable situation (imaginable) by students (Zulkardi, 2002).

PMRI (Indonesian Realistic Mathematics Approach) is an approach to learning that was born as an adaptation of Realistic Mathematics Education (RME). Two important Freudenthal views on mathematics are that mathematics must be connected with reality and mathematics as a form of human activity (mathematics as human activity) (Zulkardi & Putri, 2010: 4; Putri & Zulkardi, 2018; Putri & Zulkardi, 2017; Harisman, Putri & Zulkardi, 2018; Rahayu & Putri, 2018; Zulkardi, Putri, & Widjaya, 2018). In general, the Realistic Mathematics Approach (PMR) or RME has five characteristics: 1) the use of contexts, 2) the use of models (use of models), 3) the use of students own production and contructions (use of contributions from students' own results), 4) the interactive character of teaching process, and 5) the interviewments of various learning strands (integrated with various other learning topics). (De Lange, 1987; Gravemeijer, 1994; Putri & Zulkardi, 2018) The first characteristic suggests the importance of using context in mathematics learning which serves to limit the scope of the problem being solved so that students can focus more on solving problems. Dart games as a context in this study.

Lesson study was developed for the first time in Japan which was implemented as a teacher professional development program. Lesson study is believed to be successful in improving learning practices (Putri, 2014). According to Sparks (1999), lesson study is a collaborative process where a group of teachers identify learning problems, plan an improvement of learning, carry out learning (one teacher in the teacher group teaches it, while another teacher as an observer), evaluates and revises the learning, teach revised learning, evaluate again, and share (disseminate) the results to other teachers. While Shelley

(2005) defines lesson study as a process that involves teachers working together to plan, observe, analyze, and improve learning. Learning in lesson study is often referred to as "research lesson" or research learning. Briefly, lesson study is defined as a professional process that involves a group of teachers who plan, observe, and improve learning (Northwest Regional Educational Laboratory, 2004).

The stages in the implementation of LSLC are as follows:

a. Plan Phase (Scheduling & Planning); in this stage, the teacher who will carry out lesson study compiles a meeting schedule, determines the time and place and how many times face to face will be conducted in accordance with the course material. Furthermore, the lecturer invited other teachers as observers who would see and help him in compiling the material to be suggested in class. In the preparation of this teaching material, the lecturer concerned must formulate a learning problem that he discovered from the beginning, so that he can easily formulate the goals and achievement targets in the learning process.
b. Stage Do (Teaching & Observation); After the planning and teaching materials are ready, the teacher is included in the class and begins to carry out the teaching and learning process using the method that has been determined in accordance with the plans that have been made. When the model teacher was teaching, the other team members (teacher observers) observed the lesson.
c. See (Reflecting) stage; the discussion forum in Lesson Study requires constructive input from all observer teachers. This reflection should be carried out openly and comprehensively, covering all stages of the process so that the model lecturers have useful and comprehensive input, not fragments.

METHODS

In this study, researchers used design research methods. There are three stages in design research are:

1) The preparing for the experiment

   In the preparing for the experiment stage, researchers conducted a literature review on the comparative material, students' reasoning skills in similar situations, the use of PMRI as a learning approach.

2). The design experiment

   The design experiment stage consists of two cycles, namely cycle 1 (pilot experiment) and cycle 2 (teaching experiment

3) Retrospective analysis

   The third stage is the retrospective analysis, the data obtained from the teaching experiment stage is analyzed, the results of the study are used to develop the design of the next learning activity. HLT is compared to the actual learning activities of students (Actual Learning Trajectory) to answer the formulation of research problems

The subject of the study was the eighth-grade students of Palembang State 1 Junior High School consisting of 32 people and took place in Palembang State 1 Middle School. Mathematics teachers in this class act as model teachers. Group formation is based on the ability of students, namely high, medium and low ability students. One group consists of 4 students and in this class there are 8 groups.

Data Collection and Analysis

Data collection is done through observation using video recorder, and documentation. Data analysis is done by the researcher along with the supervisor to improve the validity to see the quality of a set of data and reliability. Reliability is illustrated by a clear description of the data collected (Rahayu & Putri, 2018).

RESULT

The first activity begins with the teacher by telling students how to learn which will be applied during the teacher's teaching. Then the student seat is arranged to form a letter "U" according to LSLC to create the expected learning process. Learning activities in the first activity are carried out in groups. At this stage the teacher arranges the student's seat, dividing 32 students into 8 groups, consisting of 4 people per group. Each group has a high-level student, middle-level students, and low-level students. Student seating is cross-arranged, male students are dealing with female students, and besides male students are also female students, so the sitting position of each male student crosses, so do female students.

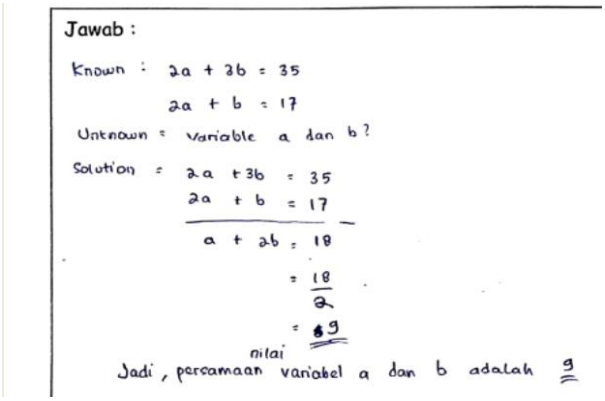
The teacher gives first activity to each group about darts and students are given the opportunity to observe the images contained in the LAS. The problem given in activity one regarding the dart game score contained in LAS 1. The game is played by four children and each child is only able to throw arrows in the two colors of the target area. The following are the target areas subject to arrows and scores obtained by players. Like the following figure 1.

Figure 1. Students sit to form a letter "U"

As an apperception, the teacher reminds us about the material of linear equations of one variable, what is the shape of the linear equation of one variable, and the solution of a simple problem related to the material of a linear variable one variable. Here are some students who come to the front of the class to work on linear equations of one variable followed by other students who listen, indicating that they also remember the material.

In the first problem given a mathematical model of linear equations of two variables and students are asked to determine what the value of each variable is. This question was answered by all students, only one student answered correctly, namely highly capable students, students with abilities capable of miscalculating equations 1 and equation 2 so that

the end result was wrong, and low-ability students were less careful in answering questions, only answering a and b equated with variables a. As shown in Figure 2 below.



The problem presented by the teacher in the first activity sheet is: "Observe the following picture of the game dart.

Ari, Budi, Dani and Toni played darts on the target board as shown above. Every child gets 4 throwing opportunities. The following is the score obtained by each child.

Think of various ways that can be used in determining the score for one throw in the black, blue, red and yellow areas. Write your answers on the paper that has been provided ". Based on the implementation of activity 1, it can be seen that the methods of settlement used by students are in accordance with the research conjecture in HLT. Groups one and two complete the problem using the guess and check method. Based on the process of replacing what has been used, students can understand the mathematical concepts contained in it and can be useful for subsequent learning activities. How to guess and check is always the alternative most often used by students if they don't know how to solve it. In this case the goal of learning activities has been achieved, namely students find the concept of a substitute process in solving problems.

Fibonacci and the Zhu Chong Zhi group in the first activity of the Fibonacci group attract the attention of observers because they look active during the learning process. Fibonacci groups are chosen because group members are active during the discussion process. The group consists of two high-ability students, one moderate-capable person, and one low-ability person.

In activities one and two students are given problems that are discussed in groups. In activity one, students are given the problem of scoring on darts. One way of solving that can be used to solve this problem is arithmetic calculations using the replace process. Understanding the concept of the process replacing it is the learning objective of activity one. This activity can be seen in figure 3.

Figure 3. Fibonacci group activity

Figure 4. Zhu zong zhi's group activity

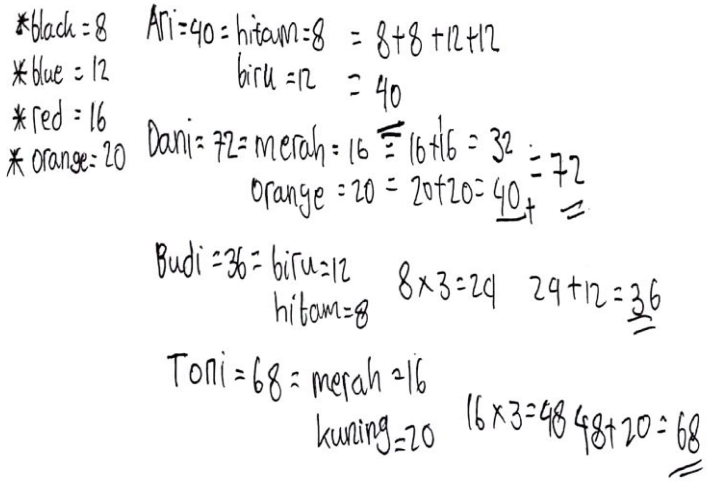
Each group looks so eager to solve the problems given using collaborative learning (Sato, 2014). Most of them solve it by guess and check. They guess the score of each color of the target area and then test the spread on the overall player score. Researchers found that there were groups that understood the difference from the score of each color in the target area were four. At first they used the guess and check method to determine the blue and black area scores. Next they only add four to the next regional score as explained in the following dialog quote. This group specifies the color of the target areas black, blue, red and yellow with letters A through D.

Guess and check is an alternative way that students often use. The model teacher does not blame the way students answer with guess and check because students are given the freedom to solve it and this is one of the conjectures of the researcher. But the teacher model gives motivation to students that it would be better if students were able to solve problems using a procedure not just by guessing.

Zhu zong zhi's group at their first meeting held a good discussion, M. Rizky the student was looking confused in understanding the purpose of the question so he asked one of his group's friends, Mustika, a high-level student, Mustika explained to M.rizky that this matter could use trial and error method (try and error). While Rafli, student 2, looked

confused but Rafli quietly paid attention to what was being explained by Mustika to M.rizky, the student was 1 so Rafli also understood the problem by finding the difference between each score.

So that in the first activity of zhu zong zhi group can work on LAS 1 correctly at first they did find it difficult to answer questions using try and error but after repeated trials and group discussions, finally the zing zhi zhu group can answer the questions correctly using the method of finding the difference between the black, blue, red and yellow colors where the difference between each score is 4 so they can answer the black score is 8, the blue score is 12, the red score is 16 and the yellow score is 20. can be seen in the following figure 5.



During the presentation, the teacher drew which groups advanced to explain their work. Fibonacci groups are one of the selected groups. In front of their friends in front of the class, they explained that they used the elimination and substitution method to get what value each color contained and to ensure that the results they got were correct, they tested the results or proved them by substituting their results into initial equation that corresponds to the problem in figure 6.

Figure 6. Student Presentation

In activity two, students are given the problem of scoring on the throwing game. Learning objectives in activity two are students can understand the concept of the process of spending and combination. In activity three, which contains three problems. Learning objectives in the activities of the three students are able to make mathematical models and students can complete mathematical models using substitution methods, elimination and a combination of elimination and substitution. Activity four is an individual test activity after the LSLC learning process on the linear equations of two variables material with the PMRI approach that has been applied.

The next learning activity is students are asked to determine how much score once throwing arrows in black, blue, red and yellow. Students are given the freedom to use their own ways to solve them. In writing down the answers to the given problems students are allowed to use pictures, words or letters.

CONCLUSION

The conclusion of this study are 1) learning activities using the LSLC system can help students become more active and brave during the learning process, such as asking questions and showing themselves during presentation activities. In addition, this system is good for students' development because students who experience difficulties will be trained not to be ashamed to ask for help from their colleagues, and colleagues who are more capable are trained to care with their peers; 2) the concept of replacing and spending processes used by students in solving problems given is the basis of how to solve linear equations of two variables 3) based on the HLT that has been implemented, it is known that students have been able to find a way to resolve linear equation in the two-variable which consists of substitution, elimination and combination methods.

The learning trajectory of the results of this study consisted of 3 activities, namely (1) the score of the dart game, (2) the score of the game to throw the ball, (3) create a mathematical model and solve the problem using elimination, substitution and combination methods. The trajectory generated by this researcher will contribute to the formation of LIT for the material linear equations in two variable using PMRI approaches and LSLC System.

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IMPLEMENTATION OF COLLABORATIVE LEARNING BASED ON STUDENT RESEARCH ON CLIMATE CHANGE AT MIPA FKIP TANJUNGPURA UNIVERSITY

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Abstract. The issues and impacts of global climate change require all parties to contribute positively to preventing and overcoming it in all fields including education. At the level of higher education, there should be awareness for these environmental conditions. Environmental lectures at the Mathematics and Natural Science (MIPA) Education Department of the Faculty of Teacher Training and Education (FKIP) of Tanjungpura University take place in three study programs namely Chemistry Education, Physics Education, and Biology Education. One of the lecture materials covers climate change and its impact. Therefore, to reach these learning outcomes, instructional tools such as teaching materials / instructional media can be coordinated together as a form of collaborative learning. The implementation of collaborative learning has been able to promote student creativity in designing simple experiments on climate change with regard to its effects on biotic and abiotic components.

Keywords: collaborative learning, research, climate change

INTRODUCTION

Climate Change has become a major topic of attention in several developed countries such as the United States (Weart, 2003). It began with the events of deforestation and degradation, especially concerning the availability of natural resources throughout the world including in Indonesia. According to Butler (2012), 10.4 million hectares of the world's forests have been permanently lost and 10.16 million hectares are going through deforestation and a decrease in forest canopy cover is above 10% every year due to illegal logging, fallen trees and fires (FAO, 2010).

The Impacts of Climate Change occur not only in forest areas, but also in water areas. The coastline of 158,000 km and 8.8 million km of ocean in its territorial sea provides millions of biodiversity including coral reefs (Scavia, et al, 2002). The availability of coral reefs which are producers of life in the marine world is also going through destruction. The research by Arman, Zamani, & Watanabe (2014) showed that the existence of extreme heating causes coral bleaching or loss of zooxanthellae algae that has deprived its producing role. Zikra, Suntoyo, & Lukijanto (2015) revealed that Climate Change can affect coastal and marine environments such as rising sea levels, changes in wind speed intensity, rising ocean waves, sea water temperatures, increasing CO2 concentrations, oceans absorbing more

gas, and becoming more acidic. Increased acidity of seawater has a significant impact on the coastal environment and marine ecosystems.

The emergence of these global issues and impacts requires all parties to contribute positively to preventing and overcoming these impacts in all fields including education. At the level of higher education, there should be awareness for these environmental conditions. This is in line with the adaptation agenda listed in the National Action Plan in dealing with climate change namely increasing awareness and information on climate change and adaptation as an early vigilant action on increasing climate disasters (State Ministry of Environment, 2007) which can be transformed in the concept of teaching. Environmental concern is the scope of science, where macro environmental lectures are part of Natural Sciences (IPA) which integrate the fields of Physics, Biology and Chemistry as a foundation for thought.

Environmental lectures at the Department of Mathematics and Natural Science Education of the Faculty of Teacher Training and Education (FKIP) of Tanjungpura University take place in three study programs namely Chemistry Education, Physics Education, and Biology Education. This learning environment is distributed in several courses presented by each study program including Environmental Chemistry (chemistry education), Environmental Science, and Environmental Physics (physics education), and environmental Science (biology education). The Semester Lesson Plans (RPS) compiled by subject lecturers revealed that the same range of material was taught in all three fields. Lecture material covers climate change and its impact so that there are several similar learning outcomes in the RPS. To reach these learning outcomes, the process of creating instructional tools such as teaching materials / instructional media can be coordinated together as a form of collaborative learning. Through collaborative learning, the learning process will be more dynamic and produce good outcomes such as the availability of textbooks as a shared reference and the teaching and learning experience shared by lecturers and students of the three study programs.

The aim of lecturing on environmental science at the natural science education study programs is that students have broad environmental knowledge, and are able to apply science to understand the phenomena of the universe through physical, chemical and biological studies (Sanjaya, 2011). The investigation process carried out in scientific inquiry can build life skills such as the ability to think, work and be scientific (Slameto. 2010). This is in line with the *Regulation* of the Minister of Research, Technology, and Higher Education (PERMENRISTEKDIKTI) No. 44 of 2015 Article 5 paragraph 1 concerning the standards of competence of tertiary education graduates which includes attitudes, knowledge and skills that refer to the description of the Learning Outcomes of the Indonesian National Curriculum Framework (CPL KKNI). Article 6 also describes attitudes which are behavior resulted from internalization and actualization of values and norms through the learning process, student work experience, research and or community service.

The environmental lectures that have been carried out so far have not been fully based on the learning process standards set forth in PERMENRISTEKDIKTI No.55 of 2017 Article 9 which states that the characteristics of the learning process are interactive, holistic, integrative, scientific, contextual, thematic, effective, collaborative, and student-centered. However, the results of interviews with environmental lecturers showed that instruction was still dominated by lecture methods and use of power point slide media. This shows that

instruction is still centered on the teacher / lecturer and has yet to be interactive. It can be seen from the instruction through the delivery of theory and question and answer session. This process has caused students to be passive and not have the confidence to ask further questions. Substantial delivery of the material and limited number of meeting hours have led to the provision of assignments by lecturers generally given before the final exam as a form of structured assignment.

According to Wood (2018) the environment can be a place for students and educators to learn. Therefore, in this environmental lecture, lecturers provide the opportunity to conduct field visits to see the condition of the surrounding environment, but the activities carried out are limited to identification of environmental vegetation. On the contrary, the implementation of lecture supporting practicum is carried out through water quality parameter testing experiments, but has not yet arrived at finding solutions to the conditions of environmental degradation, especially through research on the utilization of local potential. The learning process is not holistic because it has not comprehensively internalized local excellence and wisdom. In fact, this environmental instruction should have thematic characteristics by linking real problems in the environment through an inter-disciplinary approach such as between the fields of chemistry, physics and biology.

The lecture process in the three study programs on the topic of climate change has never been integrated with practicum activities. Therefore, in this study, the researchers seek to measure the students' ability from the three study programs collaboratively in making experimental designs. The limitations that the researchers set concern with the themes of climate change.

METHOD

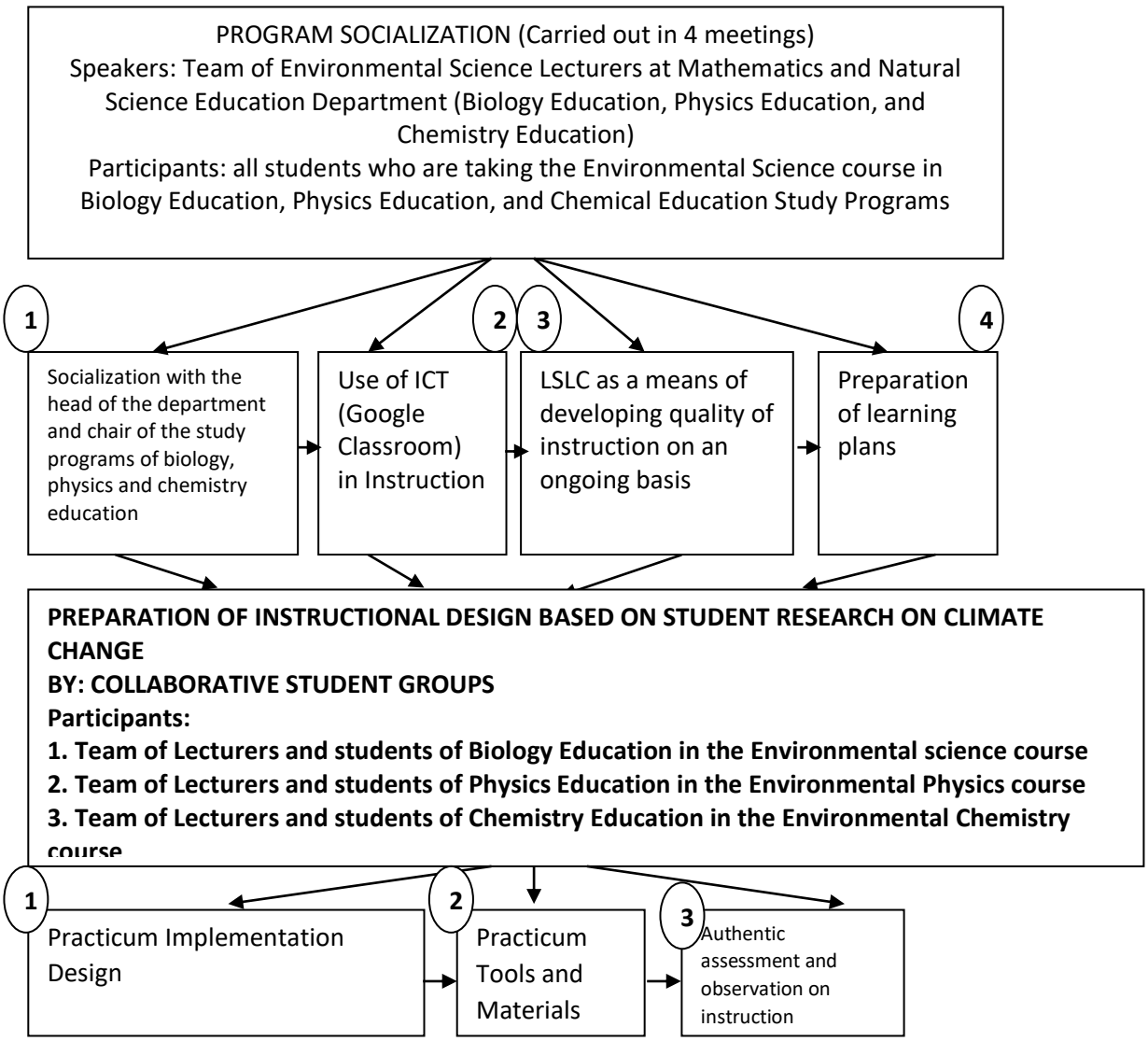
This research is a descriptive study with the implementation of lesson study. The stages carried out are illustrated in Figure 1 below.

Figure 1. Implementation of Lesson Study

In the *Plan* stage, the activities were to provide an understanding of the implementation of the practicum-based instructional process. The research team provided material on climate change that occurred especially in West Kalimantan. After 30 minutes, students asked questions about the causes of climate change. It was agreed by the research team and all students to design experiments on climate change and how they affect biotic and abiotic components. Students formed several groups with 6-7 students in each group. Students were given the freedom to determine their own research titles and design experiments in accordance with the agreed themes. The time given by all group members in designing the experiment was 7 days.

At the *Do* stage, the agreed location was the biology education laboratory. The lecture process began with a presentation on climate change by a lecturer for 20 minutes, then followed by the presentation of plans or experimental designs that had been prepared for one week by students in groups and continued with the practicum process with the guidance of practicum assistants and lecturers. This activity was observed by 9 observers. The activity ended with the presentation of each group in front of the class. The data obtained were class data in the form of effects of climate change on biotic and abiotic components.

The reflection process was carried out after the instructional process was completed. The implementation was carried out in the biology education laboratory for a session of 56 minutes. The activity began with a presentation from the model lecturer and was followed by a presentation of the findings from the observer during the observation process. In detail the lesson study activities are shown in the chart below.



RESULT

The implementation of collaborative learning was running smoothly. The implementation of the plan was carried out a week before the Do-1 began, and the implementation of the reflection and the second plan was carried out on the same day as the Do-1 and so on. The following were titles of the student experimental designs on climate change. There were 4 cycles in this activity. Research materials on climate change in each cycle are shown in Table 1 below.

Table 1. Titles of Student Designs on Completed Research on Climate Change

Cycle	Title of Research
1	Greenhouse Effects on the Earth
2	The Response of Living Creatures to Climate Change
3	Effects of Ice Melting on Sea Volume Surface Increase
4	Effects of Smoke Pollution on Temperatures on the Earth's Surface

In the implementation of Do-1, research on the Greenhouse Effects on Earth was done using 2 boxes as shown in Figure 2 below.

Figure 2. Presentation on the procedure by practicing on Do-1

In box I, the temperature was lower than box 2 because the plastic prevented the incoming sunlight from coming out. In box 2, there was steam in the 3rd minute. The temperature in the closed box was hotter than the temperature in the open box because some of the sun's heat energy had been absorbed by the sand in the closed box. When the sand releases heat energy, not all of them can come out, but some is reflected back. The results presented are shown in Table 2 below.

Table 2. Results of Research of Greenhouse Effects on the Earth

Time	Box I	Box II
5 minutes	33,5 ^{0}C	34,5 ^{0}C
10 minutes	33 ^{0}C	35 ^{0}C
15 minutes	32,5 ^{0}C	35,5 ^{0}C

The results of reflection on the implementation of cycle 1 indicated that the groups that conducted research were very cooperative and explained to each other. This indicated that each student in the group has carried out the learning process well. This is supported by the opinion of Clivas (2018) which states that the learning process is a situation built by students to learn, and the teacher performs his role as a planner who helps students to focus on problems. But not all group members understood by drawing conclusions from the results obtained. This is an improvement for the Do-2 presented in the second planning process. According to Huang (2017), instructional planning is a component in collaborative learning that emphasizes the learning process together with the observer team. This is important because it can be an indicator of achievement during reflection followed by further revisions for improvements.

The implementation of Do-2 on the Response of Living Creatures to Climate Change obtained the results as described in Table 3 below.

Table 3. Experiment Results of the Response of Living Creatures on Climate Change

NO.	BOX	OBSERVED OBJECT	TREATMENT	RESPONSE	TEMPERATURE BEFORE	TEMPERATURE AFTER
1	A	-Cricket -Plant -Ice Cube	1.Left in normal condition. 2.The box is left open. 3.Observed once in 30 minutes within 1 hour.	FIRST 30 MINUTES: - ice cubes did not melt quickly. - Crickets are moving without changes in all directions. AFTER 1 HOUR: - Ice cubes did not melt completely. - Crickets are still active without changes.	30 ^{0}C	28 ^{0}C
2	B	-Cricket -Plant	1.burned mosquito repellent is inserted and perfume sprayed	FIRST 30 MINUTES - Ice cubes quickly melted.	30 ^{0}C	33^{0}C

		-Ice Cube	into the box. 2. The box is closed using mica plastic. 3. Observed once in 30 minutes within 1 hour.	- Crickets moved to the sides of the box and are not moving a lot. AFTER 1 HOUR - Ice cubes melted completely. - Moved to the sides of the box and are motionless (crickets).		

Based on Table 3 above, it can be concluded that the final temperature in box A was 28^0C and box B 33^0C. The difference in temperature between box A and box B was affected by pollution by mosquito repellent and perfume and living creatures in box A were more active than box B. Conclusions drawn by students were far more perfect compared to the implementation of the Do-1. This is because the model lecturer provided direction on how to draw conclusions appropriately. According to Wood (2017), student conceptual change in the learning group focuses on the teacher as a learning agent. The results of the reflection showed that there were 2 students who were less active in the lab because they arrived late. In addition there was a student (male) who was less careful in conducting experiments causing a thermometer to fall to the floor. However, all students showed high curiosity and learning was conducive.

In the implementation of the Do-3, an experiment was conducted on the effects of melting ice on sea volume surface increase. The results are shown in Table 4 below.

Table 4. Results of Experiments on the Effect of Melting Ice on Sea Volume Surface Increase

No.	Things observed	15 minutes	30 minutes
1	Volume before heating	300 ml	385 ml
2	Volume after heating	385 ml	455 ml
3	Water found on mica plastic	No	No

Based on Table 4, students concluded that there was a change in the volume of sea water. The data obtained in the 15th minute showed that before heating the water volume was 300 ml and after heating it was 385 ml. Then in the second 15 minutes before heating the volume was 385 ml and after heating, the volume increased to 455 ml. On the mica plastic there was no moisture. The results of reflection on the implementation of Do-3 showed that there were 2 students not actively involved in the presentation. But the observation results showed that the 2 students who were not presenting were active in preparing tools and materials.

In the implementation of Do-4 about the Effects of Smoke Pollution on the Temperature on Earth's Surface, the results are shown in Table 5 below.

Table 5. Results of Experiments on the Effects of Smoke Pollution on Temperatures on Earth's Surface

No	Time	Box A	Box B
1	5 minutes (before burning)	28^0C	28^0C
2	10 minutes	45^0C	28^0C
3	15 minutes (after burning)	32^0C	28^0C

The conclusions obtained by referring to Table 5 compiled by the students are as follows: smoke material can increase the temperature on the surface of the earth; the more smoke on the earth's surface, the higher the temperature on the earth's surface, and it becomes one of the causes of the greenhouse effects or global warming. The results of the reflection on this experiment show that students lacked trust in their group friends, so the things they could discuss with their fellow group members were asked to the model lecturer. The practicum process was running smoothly and all group members were doing the lab work carefully. The results of the interviews with 12 students randomly showed that the process of collaborative learning like this is new to students and therefore the classroom atmosphere became unfamiliar to them. Two students stated that tey had the experience of the implementation of learning with an observer but this type of learning was different. The lecturer had similar opinion that the implementation of lesson study has a general format that is *plan, do,* and *see*. But it can be done in a various ways. This is supported by Lamb's (2015) research that lesson study is carried out varied across the world, but the general process is carried out through a cycle of planning, implementation of learning, reflection, and revision. The point is that lesson study improves the teacher's ability to teach a topic of the lesson in an effective way.

The results of the questionnaire given at the end of cycle 4 showed that students were happy with the lecture process that was integrated with the practicum implementation. In addition, the concepts learned became more meaningful.

CONCLUSION

The research on the theme of climate change was running smoothly in cycle 1 to cycle 4. The implementation of collaborative learning has been able to promote student creativity in designing simple experiments on climate change concerning its effects on biotic and abiotic components. The results of the questionnaire given at the end of cycle 4 showed that students were happy with the lecture process that was integrated with the practicum implementation. In addition, the concepts learned became more meaningful.

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THE DEVELOPMENT OF TEACHING MODEL PROJECT-COPY THE MASTER (PC-THE MASTER) BASED LESSON STUDY IN WRITING CULINARY FEAUTURE IN DEVELOPMENT WRITING SKILL SUBJECT

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Abstract. One of unique writings published in newspaper is feature. This type of writing is one of text types that has to be acquired by students. Higher education students need to be treated to understand types of text to know the development of their idea in more detail through the generic structure and language features. The development of Project-Copy the Master (PC the Master) based on Lesson Study in writing a culinary feature was conducted in three cycles. Every cycle and then the students were given culinary feature master texts (authentic texts) that were used as the guidance for them on how their writings constructed. The students were asked to set up a culinary project to build the basic path to their writings. This culinary feature texts were written by students throughout the consideration of pattern of organization of culinary feature master. This study aimed to 1) describe the result of students' writing of a culinary feature from implementing a teaching model namely PC The Master based on Lesson Study and 2) describe the development of Project-Copy the Master (PC the Master) teaching model based on lesson study in writing a culinary feature. The data were gained from the result of administering test, observation, and questionnaire. It is summed up that in the first cycle the category for the excellent performer was 15%, the category for good performer was 35%, and the category for low performer was 50%. In the second cycle, the category for the excellent performer was 35.71%, the category for good performer was 50%, and the category for low performer was 15.29%. In the third cycle, the category for the excellent performer was 22.22%, the category for good performer was 77.78%. It indicates that the students' achievement has increased in the third cycle. Generally, the result from observation and questionnaire showed that there was an improvement of an activity in acquiring text organization based on master and example, an activity in collaborating on a project over the group activity, developing an interesting title, materials of a culinary feature.

Key words: texts, culinary feature, writing

INTRODUCTION

So many types of writing are presented in newspapers. Generally, the dominant text is news. The News is writing that is widely read by people, not only because of its actuality but also because of the high curiosity of the readers. In addition to the news, an interesting article also presented in the newspaper is a feature. The feature is a typical essay that has the elements of news, but is presented in more depth and does not have to be characterized by the actual news. There are also many features. Among them are culinary features.

Many discussions about various texts with their linguistic structures and characteristics. However, the culinary features are presented in various newspapers, but scientific studies are not yet widely known. Even though this type of writing or text has its own characteristics among other types of writing, they are very different from the report text of observations, narratives, and descriptive, even news texts.

In the Indonesian Language and Literature Education Study Program, students are trained in productive skills writing it through one of the subjects, namely Writing Skills Development. The culinary features can be used as one of the contents of teaching materials in this course. Mastery of features is needed in the professional career development of students, as teachers and writers. There are many uses for understanding and writing skills of this feature that will be owned by prospective teacher students.

Formulation of the problem of this research, namely:

1. How do learning outcomes write culinary features with the application of the PC learning model The Master based on lesson study?
2. How is the development of the learning model of the Master-Based Project-Copy (PC the Master) based on lesson study in writing culinary features?

The purpose of this study was to describe the learning outcomes of writing culinary features with the application of the PC learning model based on lesson study and describing the development of the learning model of the Master of Education (PC the Master) based on lesson study in writing the culinary features.

The results of this study are expected to provide benefits to various parties in enriching the development of learning models, the learning process in universities, in accordance with the needs of lecturers and students.

Specifically, the benefits of the results of this study can be felt both theoretically and practically. Theoretically, the results of this study are the development of learning models from existing models. This model provides a wealth of theory in the development of cooperative models and stimulates scientific thinking and design project activities.

In the Popular Writing Book written by Ismail Marahimin (2005) revealed that if we learn to paint the Western way, we learn lines and shapes first, the anatomy, perspective, and color according to the sequence of teaching. It is said that in China in ancient times this was not the case. The person who becomes a painter will be given a finished and good painting, usually made by a master, a famous painting or painter. The prospective painter was told to copy the master's painting, to the best of his ability, as closely as possible. After ten twenty attempts, the student will get a new master to copy. That is so until the prospective painter can paint himself and begin to find a distinctive form that matches his personality form. This method is usually called Copy the Master, which means imitating the painting of an expert.

Writing lessons also recognize this method. Basically, this method requires doing exercises in accordance with the given master (Marahimin, 2005: 11).

Copy the master technique is one way to practice writing fun. This technique is the same as making the imitation of expert writing. Imitation or making imitation is one of the fundamental methods of rhetorical teaching in the Ancient Roman and Renaissance times. Imitation at that time was copying pure speech from a writer provided. When copying, they were taught to describe and find the means of speaking and writing, which led to various types of rhetorical analysis of their models. From the model can be taken and developed means of speaking, argumentative strategies, and arrangement patterns.

The copy technique of the master requires doing the exercises according to the master given. Training with this method is not necessarily the writing of a famous writer, but can also be taken from an article derived from an ordinary writer, which is considered a model, after modification as needed. Then first this model is read, viewed the contents and shape, analyzed and made the framework, and done other things that are necessary, only after that is the time to write. Of course what is written is not exactly the same as the model: this is the name copying around, copying, or even plowing. Actually what will be copied is the framework, or the idea, or even the technique. Changing stories is a story from a master who is copied into another or different (Marahimin, 2005: 20-21).

The following are steps to incorporate a project-based learning model and copy the master in culinary feature learning.

No.	The Master PC steps	Results/Products
1.	Project Determinations	Determine the topic of the topic and the target of the culinary location
2.	Designing Steps for Project Completion: • Read original essays (culinary features) • Understand patterns	Manuscript of Kompas culinary feature, one of the variants of the title: Fight to Maintain Sense
3.	Preparation of Project Implementation Schedule • Determine the time	Agenda of activities
4.	Completion of the Project with Teacher Facilitation and Monitoring • Lecturers look at project products in the classroom	Photos of culinary locations, culinary menus, student visits, draft material (in the form of food names, photos, history, method of making)
5.	Preparation of Reports and Presentations / Publications of Project Results	Write culinary features based on project materials (at the third meeting
6.	Process Evaluation and Project Results	Post-test is held (the value of writing culinary features based on criteria)

METHOD

The method used in this research is based on the lesson study. There are four stages: one cycle is designed with stages of the plan, do and see. The data obtained were reviewed and analyzed. The quantitative data were collected from test results and the qualitative data were gained from observation data and questionnaires (students and lecturers).

In the plan and do phase, the learning model used a combination of two models, namely Project Based Learning and Copy the Master. Which is then shortened to PC-The Master. The focus of this merger is in stages two and five in the project model steps. So the development in the second step, namely the design of the steps to complete the project is

filled with writing training using the specified writing model. The writing was developed by patterning the text structure of the model text. Imitated the structure of the text, the development of its ideas, and the style of writing.

In step five, the preparation of the report and presentation/publication of the project results is filled out by drafting the writing of the materials that have been obtained from the project visit to the culinary place in the specified area. Materials in the form of notes that contain the name of culinary, specialties of food flavor, data of the culinary owner/owner, location, business development, culinary connoisseurs, photos/documentation, interview notes, and description or storytelling.

RESULTS

The following presented data and discussion on the development of the PC-the Master model in writing culinary features of the three cycles have been implemented.

Assessment Category Writing Culinary Feature Cycle 1

No.	Category	Value Range	Total Student
1.	Excellent	86-100	3
2.	Good	76-85	7
3.	Fair	66-75	10
4.	Poor	40-65	-
5.	Very Poor	0-39	-

Based on the table above, the percentage of students included in the excellent category was 15%, good category as much as 35%, and poor category as much as 50%.

Assessment Category Writing Culinary Feature Cycle 2

No.	Category	Value Range	Total Student
1.	Excellent	86-100	5
2.	Good	76-85	7
3.	Fair	66-75	2
4.	Poor	40-65	-
5.	Very Poor	0-39	-

Based on the table above, the percentage of students included in the excellent category was 35.71%, good category as much as 50%, and poor category as much as 14.29%.

Assessment Category Writing Culinary Feature Cycle 3

No.	Category	Value Range	Total Student
1.	Excellent	86-100	4
2.	Good	76-85	14
3.	Fair	66-75	-

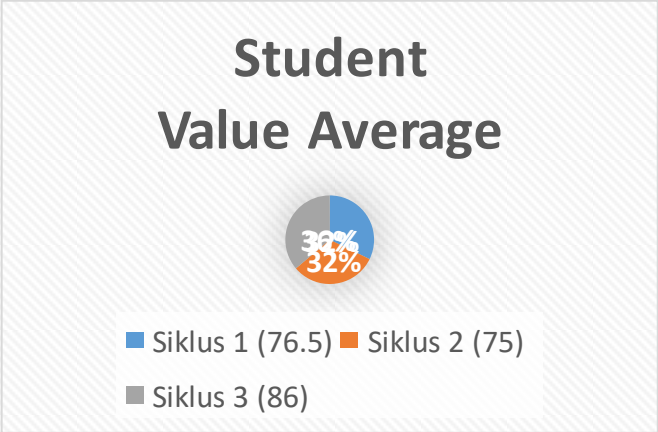
4.	Poor	40-65	-
5.	Very Poor	0-39	-

Based on the table above, the percentage of students included in the excellent category was 22.22%, the good category was 77.78%, and none included in the category of fair, poor, and very poor. This shows the ability to write culinary features of students getting better in the third cycle.

The average score of learning outcomes writes culinary features with the application of the PC learning model The Masters based on the overall lesson study can be seen in the following table.

Cycle 1	Cycle 2	Cycle 3
76,5	75	86

The average student score from cycle one to cycle three can also be seen in the diagram below.



Judging from the tables and diagrams above, the ability of students to write culinary feature texts experienced improvement in the third cycle. This shows that students' understanding of culinary feature texts improved.

The research was conducted at Universitas Pakuan located at Jalan Pakuan Number 1, City of Bogor. Universitas Pakuan has a Teaching and Education Faculty which includes an Indonesian Language Education Study Program which has Writing Skills Development Courses in even semester. The selection of these courses is to be studied because there are often interesting and appropriate student writings to develop.

In the Writing Skills Development course, students are given the task of writing various kinds of texts, one of which is an article. To explore students' ability to write articles and raise topics that are popular with today's society, namely culinary, it was chosen to write culinary features as the object of study.

However, writing articles that are considered difficult to bring up the idea of choosing a project-copy the mastery learning model. This is to see the ability of students in writing culinary features based on the master (original essay) provided. By using a master (original

essay), students can see the pattern of development of ideas compiled by the author so that they can follow the pattern in their writing. The master text (original essay) given to students is taken from the Kompas daily which is published every Sunday.

In the first cycle, students are given examples of hortatory exposition texts (procedures) to facilitate their understanding of culinary feature texts. Students are given pictures of processed foods that are related to each other.

In the second and third cycles, students are asked to carry out culinary projects. Students are grouped with four people. They were asked to go to the field, looking for information about culinary that was of interest to them. The information includes the name of culinary, culinary place, culinary owner or maker, what menu is served, what ingredients are needed, and how to make the culinary.

After that, they were asked to write culinary feature texts based on culinary data they collected with the culinary feature text structure, namely title, opening, body, and conclusion. The writing they wrote must follow the pattern of developing ideas from the text of the master culinary feature (original essay) that has been given. In addition, they were also asked to include supporting photos related to culinary that were discussed in his writing.

CONCLUSION

The conclusion of this study is that in the first cycle the percentage of students included in the excellent category is 15%, good category as much as 35%, and poor category as much as 50%. In the second cycle, the percentage of students included in the category is very good as much as 35.71%, good category as much as 50%, and poor category as much as 14.29%. In the third cycle, the percentage of students included in the excellent category was 22.22%, the good category is 77.78%, and none included in the category of fair, poor, and very poor. It shows the ability to write the culinary features of students getting better in the third cycle.

Development of a learning model of the Master of Science (PC the Master) based on lesson study in writing culinary features carried out in three cycles. Every cycle, students are given a text of master culinary features (original essays) as their guide in writing. Students are asked to work on culinary projects to be used as the material for their writing. Culinary feature text created by students must follow the development pattern of the master culinary feature text.

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IMPLEMENTATION OF LESSON STUDY USING LEARNING MANAGEMENT SYSTEM MOODLE IN EFFORTS TO IMPROVE LEARNING OUTCOME IN REVIEW OF JUNIOR HIGH SCHOOL MATHEMATICS MATERIAL COURSES, FACULTY OF TEACHER TRAINING EDUCATION, PANCASAKTI UNIVERSITY TEGAL

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***Abstract*—**Review of junior high school mathematics material courses is a compulsory subject in the Mathematics Education Study Program. Through this course, , students are provided with skills in teaching mathematics at junior high school. Students are not only able to master junior high school mathematics material but must have the skills to deliver the material. The purpose of this study was to find out how to implement Lesson Study in an effort to improve student learning outcomes in the Moodle-assisted mathematics material study review course and to describe the improvement in learning outcomes caused by the implementation of lesson study assisted the Learning Management System Moodle. Learning Management System Moodle is a web-based application that provides online learning services, this is in line with the current digital era.The research subjects were the second semester students and lecturer at Teacher traning Education Faculty of the Pancasakti University Tegal of Mathematics Education Study Program. The research process was carried out through 2 cycles. Each cycle consists of three phases: plan, do, see. Data collection techniques through interviews, observation, documentation and tests. Data analysis techniques using interactive analysis techniques which consist of 3 components, namely data reduction, data presentation and conclusion drawing. The results of the study showed an increase in the learning outcomes of the subjects of junior high school mathematics material studies in each cycle, which included cognitive, affective and psychomotor aspects after conducting learning activities. This proves that the implementation of the lesson study assisted Learning Management System Moodle is able to improve student learning outcomes in the study of junior high school mathematics material courses.

Keywords– *Lesson Study; Learning Management System Moodle; Learning Outcomes.*

INTRODUCTION

One of the graduate profiles generated from the Mathematics Education Study Program is to become an educator in mathematics. One of the knowledge that must be possessed in mastering the mathematics material in the Junior High School (JHS) curriculum. The ability that must be possessed by students as prospective educators is not only mastering the mathematics material but must have the ability and skills in delivering the material by applying learning methods and media in accordance with the material. This is so that students

become interested in mathematics subject. Ability and skills must be trained since students are in the initial semester, must always be improved so that later become professional educators. In an effort to improve the ability of students, research who are also subject lecturerto apply Lesson Study to improve student learning outcomes. According to Susilo (2013: 2) it is believe that Lesson Study is the right means to improve the quality of learning and develop the competence of educators. Also explained by Cerbin (2006: 253) that lesson study as a teaching improvement process. According to Susilo (2013:1) Lesson Study is defined as a model for educating professional development through collaborative and sustainable learning assesment based on the principle of tourism to build a learning comunity.

We now live in the industrial revolution era 4.0 where information tecnology is growing rapidly. We as part of the development era must be able to adjust to the environment. Learning resources can be obtained easily through the internet. LMS Moodle is an application of the concepts and mechanisms of teaching and learning that utilize information tecnology. Blanco Abellan (2009:78) said that Since 2005 Atenea has been based on Moodle an open source learning management system designed to help educators create quality online courses and administer learner outcomes. According to Hendayana (2010: 51) Quality of Indonesia Mathematics and science education needs to be improved for promoting quality of human resources with technology to be able to manage/ process abundant natural resources for better living. Through lesson study and application of the moodle learning management system, students are encouraged to use technological progress and obtain information about the progress of each learning to improve learning outcomes review of junior high school mathematics material courses. Blanko

The purpose of this study was to find out how to implement lesson study using LMS Moodle in effort to improve student learning outcomes in Review of Junior High School Mathematics Material Courses and to describe the improvement in learning outcomes caused by the implementation of lesson study by using LMS Moodle.

Learning outcomes are a change that includes cognitive aspects, psychomotor aspects, and affective aspects that result from the subject experiencing the learning process. Limitations in this study include learning outcomes in this study is learning achievement (cognitive aspect) and process skills (psykomotor aspect) observed in student learning groups during the learning process in the classroom, The research was conducted in two cycles in the Review of Junior High School Mathematics Material Course held from May to June 2018 with the research subjects of the second semester of the 2017/2018 academic year.

METHOD

The type of research is qualitative research. The study was conducted in May – June 2018, research sujects were students in 2nd semester of the 2017/2018 academic year in the Review of Junior High School Mathematics Material Courses. The research process was carried out through 2 cycles. Each cycle consists of three phases: plan, do, see. Data collection techniques through interviews, observation, documentation and tests. Milles and Huberman in Setiana (2012: 10) suggest that activities in qualitative data analysis are carried out interactively and take place continuously so that the data is saturated. Data analysis using interactive analysis model, namely data reduction, data display, conclusion data. Drawing / verification is used triangulation in developing the validity of the data obtained.

RESULT

Situation analysis is obtained through interviews conducted to find out the problems that occur. The results of the interview obtained that

1) *Students feel awkward and still embarrassed when asked to explain the material in front of the class.*
2) *Learning is done not in groups so that student discussion is limited.*
3) *Students are not used to applying the concepts and mechanisms of teaching and learning that utilize information technology.*

Leson Study is carried out through two cycles with the following results:

1) *First cycle*

a) *Plan phase*: Based on the results of the interview and analysis of the situation, the plan phase for the first cycle is carried out. planning the first cycle learning activities will be carried out in groups with the assumption that by making them into learning groups they will feel not alone. so that when presenting the material or the solution that must be resolved is to bring the results of the group. This can be a support for students who are still ashamed to stand in front of the class. At this stage a learning scenario is prepared to be used at the time of the do Lecturers use LMS moodle to store learning resources that can be accessed anywhere and anytime. Shown as figure 1.

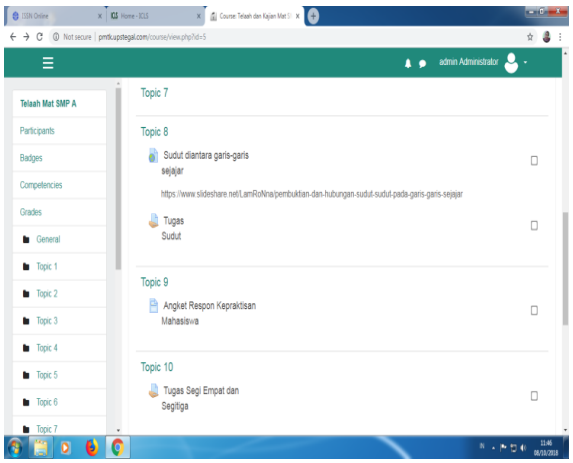

Fig. 1. Display of the material and tasks that have been uploaded using LMS Moodle.

b) *Do phase:* The phase is held on May 16 2018 at 10.00-12.30 p.m. with learning objectives students master the concept of angles and the characteristics of parallel lines when other lines are cut and able to explain the concept to students. with learning objectives students master the concept of angles and the characteristics of parallel lines when other lines are cut and able to explain the concept to students. There were four observers in the first cycle, one lecturer and three 8th semester students. In the fourth phase observers observe the process skills in each group.

c) *See phase:* In the see phase, information from 4 observers who observed the course of learning was obtained: there are still groups that only present the results of the solution

answers to the topics discussed in a way written on the blackboard without being explained, namely group 5, have been asked to explain before friends but waited for 8 minutes not to go forward to explain. Some groups seem unfamiliar with LMS Moodle media so that they are not able to maximize the existing learning resources. The tasks collected through uploading on the Moodle LMS have a poor appearance, as shown in Figure 2.

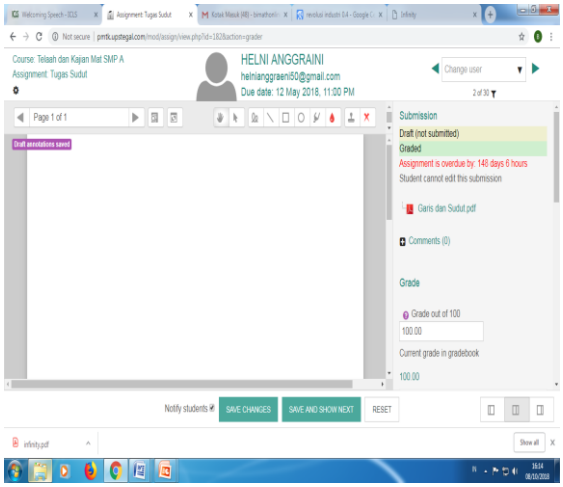

Fig. 2. Display of The tasks collected through uploading on the Moodle LMS have a poor appearance.

2) *Second cycle*

a) *Plan Phase:* In the second cycle begins with the plan phase. lecturers along with observers plan based on information on the first phase of the see phase. In the 2nd cycle plan phase, (1) learning is planned that presents the material and tasks before the start of the lecture (recitation assignment). (2) material can be seen in LMS moodle so that here students will be forced to interact with the learning resource. (3) Recitation assignments are given because they will train students to better prepare their mental and performance in explaining a case in front of the class. (4) Recitation tasks can also make discussion more lively because students have read the material to be discussed in class.

b) *Do phase:* The phase is done on June 6, 2018, attended by 4 observers. The four observers will observe the process skills during the learning process. The observer uses the observation sheet that has been compiled. Learning objectives in the second cycle are mastering the concepts of rectangles and triangles and are able to convey well to students. Students are divided into the same 6 groups as in the first cycle. Students are free to search for learning resources in addition to the learning resources provided in the Moodle LMS. This is done so that students are accustomed to using information technology and can experience how to find reliable learning resources. After learning is complete the next phase is see.

c) *See phase:* In this phase, information is obtained, among others: 1) almost all groups are able to have the courage to explain a material in front of the class. (2) the discussion that occurred in each group had progressed, almost every student was

involved in every case given, this happened because they had adapted to their group. (3) Students have had experience in sending assignments through Moodle LMS and can see comments given by lecturers.

Learning process skills also increase in each cycle. Preliminary observations are made before the first cycle is held. This is done so that the lecturer can compare the process skills in each cycle. Improvement of learning process skills can be seen in table 1.

TABLE I. TABLE OF PRECENTAGE OF LEARNING PROCESS SKILL

No	Group	Precentage Learning Process Skill Before the cycle	Precentage Learning Process Skill (First Cycle)	Precentage Learning Process Skill (Second Cycle)
1	Group 1	40	61,18	82,35
2	Group 2	40	60,00	83,53
3	Group 3	40	55,29	78,82
4	Group 4	38,82	65,88	85,88
5	Group 5	30,59	47,06	69,41
6	Group 6	49,41	81,18	95,29
	Average	39,80	61,76	82,55

There was an increase in the average learning achievement of 30 students which can be shown as in table 2, preliminary data is obtained when analyzing the situation. The preliminary data is compared with the data on learning achievement after the lesson study was applied using the Moodle LMS.

TABLE II. TABLE OF AVERAGE LEARNING ACHIEVEMENT

No	Time	Average of Learning Achievement
1	Before Cycle	65,67
2	After Cycle	82,43

CONCLUSION

The results of the study were an increase in learning achievement and student learning process skills. From the improvement of learning achievement and learning process skills it can be concluded that there is an increase in student learning outcomes in the review of junior high school mathematics material courses. This is in line with the research conducted by Setiana (2012) that through lesson study the learning outcomes of students can increase. In

line with the statement by Fernandez (2012) in his book entitled Lesson study: a Japanese application to improving teaching and learning mathematics.

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SCAFFOLDING LEARNING COMMUNITY THROUGH THE IMPLEMENTATION OF LESSON STUDY IN BIOLOGY EDUCATION STUDY PROGRAM PAKUAN UNIVERSITY

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Abstract. This study aims to describe the implementation of Lesson Study for Learning Community in Biology Education Study Program, Faculty of Teacher Training and Education, Pakuan University. The Biology Education study program started lesson study since received a grant from the Ministry of Research and Higher Education in 2012, and still consistently apply lesson study until now eventhough the grand has ended. No less thantwo courses implemented lesson study in every academic year. This can be caused by a high commitment of the lecturers to improve their learning quality. Based on the results of observation and questionnaire on courses which carried out lesson study, the lecturers received positive impacts such as: 1) implementation of lectures facilitates all students to learn; 2) enhancement the quality of learning process and results; and 3) establishment of learning community for both students and lecturers. These were followed by an increase in lecturer activities for research and scientific publication in seminars and journals. Similarly to students, their learning motivation and enthusiasm were increased significantly. These indicated that the implementation of lesson study in Biology Education study program has succeeded in scaffolding a learning community for both lecturers and students.

Keywords: Learning Community, Lesson Study, Biology Education

INTRODUCTION

The quality of teaching and learning in higher education must always be improved to produce students which are able to compete globally. The improvement of teaching-learning quality can be done in various ways, including Lesson Study. Through lesson study, educators can study collaboratively and sustainably based on the principles of collegiality and mutual learning. (Hendayana, 2007). Lesson study stimulates collaboration between lecturers because this activity involves the lecture model and also the lecture participants (observers) to join the process of teaching and learning. This is necessary because lecturers must always be evaluated and improved to achieve the desired quality education standards (Copriady, 2013). Lesson study can improve academic culture, collaboration skills, ability to conduct self-evaluation, and can motivate teachers to develop learning innovations. In

addition, through lesson study, the teacher ispossible to produce research-based scientific papers and teaching materials (Sriyati, 2007).

The Biology Education Study Program at Pakuan University has carried out lesson study activities since receiving a grant from the Ministry of Research and Higher Education in 2012. Furthermore, lesson study is always carried out in different courses in each academic year. This is intended so that the lesson study that has been carried out is able to build a learning community for lecturers in the Biology Education Study Program, Pakuan University. The learning community is formed when individuals collaborate and utilize the learning resources of their peers through sharing experiences (MKDP Curriculum and Learning Development Team, 2013). In the learning community, there is two-way or more communication that is involved in the mutual learning (Nurdin & Adriantoni, 2016). The learning community can be built through the lesson study stages which consist of a stage plan, do, and see continuously.

Lesson Study for Learning Community (LSLC) had a humble beginning from Professor Manabu Sato who believed firmly in the urgent need to revitalize education and led to the creation of learning communities among educators. Lesson study as an approach to teacher professional development emphasizes two elements, there are long-term practice and an implicit belief in the efficacy of learning. Effective professional learning is a long-term commitment and it is best conducted in a school community that promotes learning for all. Therefore, in order to develop such a community or culture, it is increasingly important for teachers to mutually observe and jointly reflect on practices at the classroom level (Saito, *et al.*, 2015).

Lesson study places teachers at the center of the professional activity with their interests and a desire to better understand student learning based on their own teaching experiences. Teachers organically come together with a shared question regarding their students' learning, plan a lesson to make student learning visible, and examine and discuss what they observe. Through multiple recurrences of the process, teachers have many opportunities to discuss student learning and how their teaching affects it (Murata, 2011). Therefore, this study aims to describe the involvement of Biology Education lecturers in the lesson study activities to improve their quality of teaching and learning.

METHOD

This study used descriptive research methods. Research subjects were lecturers of Biology Education Study Program, Pakuan University. The research data includes the courses which carry out lesson study from the 2012-2017, the process of lesson study implementation, the results of the implementation of lesson study on students, and the lecturers' response to the implementation of lesson study. These data were collected through observation, questionnaire, and document analysis techniques. Furthermore, the data which has been collected was analyzed using descriptive analysis techniques.

RESULTS

Lesson study is an activity that is able to foster and enhance the professionalism of a lecturer. Lesson study is described as a process consisting of the following steps: (1) collaboratively planning the study lesson; (2) implementing the study lesson; (3) discussing the study lesson; (4) revising the lesson plan (optional); (5) teaching the revised version of the lesson (optional); and (6) sharing thoughts about the revised version of the lesson (Fernandez and Yoshida, 2004, in Saito, *et al.*, 2015). Simply, lesson study consists of three activity: plan, do, and see.

The implementation of the lesson study in the Biology Education Study Program in 2012 received a very good response from the lecturers so that each year lesson study can be carried out for different subjects. The number of courses that have implemented lesson study in each academic year is presented in Figure 1.

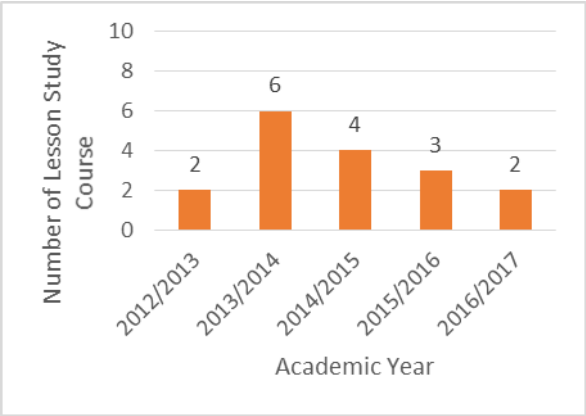

Figure 1. Number of Lesson Study Course in each Academic Year

Based on the data presented in Figure 1, lesson study was carried out in each academic year. The first year was carried out by two courses, namely Biotechnology and Biology Learning Strategies. Furthermore, lecturer enthusiasm increased until there were six courses in lesson study, including Animal Structure, Curriculum Study, Biology Learning Planning, Vertebrate Zoology, Plant Anatomy, and Cryptogamae Botany. In the third year, lesson study was carried out by the subjects of Plant Physiology, Learning Media, Basic Chemistry, and Animal Physiology. In the fourth year, lesson study was carried out by subjects of Basics of Science Education, Plant Morphology, and Animal Structure. In the fifth year, lesson study was carried out by the subjects of Reproductive Biology, and Learning Media. Although from the second to the fifth year the number of lesson study courses decreased, at least two courses were always carried out in lesson study in each academic year. In addition, the subject of lesson study courses always vary every year. This indicated that every lecturer in the Biology Education Study Program has an interest and motivation to improve the quality of teaching through lesson study.

The research results of the Biology Education lecturers who carried out the lesson study showed that the lesson study activities were able to improve the instructional ability of

lecturers (Sutjihati, *et al.,* 2014; Kurniasih, *et al.,* 2013) and increase students' enthusiasm for learning (Lathifah, *et al.,* 2016). The courses carried out with lesson study were able to significantly improve students' competence (Hidayat, *et al.,* 2015), increase collaborative activities both of students' affective and psychomotor (Rostikawati, 2014), train students' psychomotor skills and procedural knowledge (Kurniasih, *et al.,* 2014), foster students' critical thinking skills (Afrikani, *et al.,* 2015), and able to improve students' skills in creating interactive learning media (Susanto, *et al.,* 2014)

The lesson study activities which carried out at the Biology Education Study Program also received a positive response from both students and observers(Kurniasih, *et al.,* 2013; Sutjihati, *et al.,* 2014). Based on the questionnaire given to lecturers in Biology Education, most of the lecturers (83%) had been model lecturers and all lecturers (100%) had been observers in the lesson study activities.The lecturers were so enthusiastic when they were model lecturers (83%). The lecturers admitted that they could learn from the lesson study courses (100%), the lesson study activities could improve the effectiveness of the learning process (100%), increase students' motivation and learning outcomes (100%), and build collaborative attitudes of students in their group (100%). Nevertheless, some lecturers (60%) argued that preparation of lesson study requires more time and energy. However, all lecturers (100%) agreed that the lesson study activities helped lecturers to improve the teaching- learning process and most of the lecturers (83%) supported the continuity of lesson study in Biology Education Study Program.

The sustainability of lesson study activities provides an opportunity for lecturers in Biology Education to collaborate and improve their instructional abilities (Kurniasih, *et al.,* 2013; Sutjihati, *et al.,* 2014).Collaboration between model lecturers and observer lecturers with different backgrounds allows them to share their perspectives and experiences, so that everyone can learn at the best level of quality(Saito, *et al.,* 2015). This joint learning process has formed a learning community in the Biology Education Study Program. Through the learning community, the lecturers will be very qualified in the case of (1) making connection of gaps among theories and practice; (2) creating space to discuss problems of learning implementation; (3) improving retention of students; (4) sustaining pedagogical practice and theoretical concept of sciences; (5) guiding transformative learning; and (6) improving students' learning (Nai, *et al.,* 2016). With many positive benefits that can be obtained from the lesson study for the learning community, the lesson study needs to be continued in the Biology Education Study Program.

CONCLUSION

The lesson study-based course activities have been carried out by lecturers of Biology Education Study Program since 2012. Through lesson study activities, the lecturers work together to design a quality learning process, so as to increase students' motivation and learning outcomes. In addition, lesson study also stimulates the improvement of lecturers' instructional skills. Sustainability of lesson study at the Biology Education Study Program

has formed learning communities for lecturers as well as students. Therefore, this lesson study activity needs to be maintained and improved.

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LESSON STUDY IMPLEMENTATION: COGNITIVE ABILITY, A SKILL TO DRAW AND ARRANGE INSTRUMENTS BY GRADE X STUDENTS IN SUBJECT MATTER OF INTRODUCTION TO CHEMICAL INSTUMENTS AND MATERIALS IN CHEMISTRY LABORATORY

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Abstract. This research aimed to explore the chemistry teaching learning activity through lesson study approach. This approach is still rarely implemented by teachers nearby of Muhammadiyah University of Semarang. One of them was in SMA N 15 Semarang. We proposed a collaboration program between lecturer and teacher to implement said approach in subject matter of introduction to laboratory instruments. The type of this research is qualitative descriptive research. Three steps in research through lesson study approach were *plan, do, and see*. The subjects of this research were 36 students in grade X. The data collection technique used in this research was test, observation, and documentation. In this research students were expected to acquire some skills, which were skill to recognize chemical instruments and materials; to indentify and arrange instruments and materials; to draw the instruments and materials; and to arrange instruments and material in some certain arrangements of lab work. Whereas the concepts that were taught in this teaching learning activity were materials heating, solutions making, and the usage of titration, filtration, and extraction instruments. The early result of this research through observation, we observed that students were not able to use and differentiate simple laboratory instruments yet. In the next step, we could observe that there were significant improvements. The average score for pretest was 67.3 and for posttest was 73.14 with a gain score of 5.8.

Keywords: Chemistry Education, skills, Drawing Instrument, laboratory, Lesson study

INTRODUCTION

This rapidly changing era needs teachers who are creative in directing the teaching learning activity. Teaching learning activity should be arranged and executed well to get better results. One subject in science subject group is chemistry. Chemistry teaching and learning at school should balance the theoretical activity in the classroom and the activity on the field or in the laboratory. The importance of activity in the laboratory is because most of the theories and concepts in chemistry can be proved or tested in the laboratory. The test itself can be verification, proving, or discovery. The importance of laboratory activity, based on Amin by Atika (2017), is how it can improve students' skill in indentifying, observing, data collection, and data measuring as well as manipulating instruments for the trial. The success of the laboratory activity is measured by students' ability to use laboratory instruments and understanding their functions.

Based on the benefit of lab work activity, according to the grade X curriculum which was to show scientific behavior (having curiosity, discipline, honest, objective, open, able to differentiate facts and opinions, hardworking, keen, responsible, critic, creative, innovative, democratic, communicative) in arranging and executing trial and discussion which was established in daily life. Therefore, the laboratory activity can ease the students in recognizing, understanding, and constructing the concept of applying and using instruments as base for next laboratory work. The most important thing in lab work activity is to know the instruments and safety requirements in doing research process. Aside from that, introduction to laboratory instruments can be used as a foundation for students in knowing the name and function of said instruments. The instruments really needed to proses in research or laboratory activity especially in chemical laboratory. Knowledge of the instrument and functions of these materials in activities laboratory can minimize errors and reduce hazards.

Laboratory Activity give effect to success student in chemistry learning, Therefore, student directly observe symptoms or chemical processes, practice scientific thinking skills, and instill and develop scientific attitudes. Based on Raharjo (2017) that the type laboratory to student high school type I laboratory. Laboratory type 1 its laboratory basic science to organize education or workshop with facility simple instrument support (complete glassware), and ingredients that is managed is the general category material to serve students' educational activities.

In addition, the lack of laboratory activities in high school results in low knowledge of chemical activities at the University level. That its experienced by basic teknik of laboratory of the lecture chemitry education 2018/2019. Based on Eko Yuliyanto (2018) that skill basic student from senior high school graduation most of them do not know about 75% of laboratory instrument, do not understand the function of 85% and also have never used glass instrument by 90%. The low level of introduction and use of laboratory instrument is also considered dangerous (Budimarwanti, 2018) because the importance of this knowledge must be prepared from the beginning.

Laboratory Actifity it’s have big role to sucsess in learning chemisry. Besides that the role of the teacher in mentoring the implementation of the activity laboratory is very large. Based on Junaidi (2016) that teacher be main factor in create learning to be effective. So that it takes careful planning and enough time for these activities. The Important of teaceher’s role in makes the teacher's more motivated in improving the learning process. The process of improvement is always carried out by the teacher in several ways, namely evaluation and reflection. Improvements in learning can be carried out through the lesson study approach.

Lesson study is an activity to improve the quality of learning and teacher professional development. to implement lesson study teacher colaboratifely 1) studying the curriculum and formulating learning objectives and the objectives of developing the quality of students, 2) designing learning to achieve goals, 3) implementing and observing a research lesson and, 4) implement reflection to discuss learning that is studied and perfecting it and planning the next learning (Dudley, Pate. 2011; Susilo, dkk. 2011; Madawati,. 2015). In this case the collaboration of teachers from Semarang High School 15 with Lecturers in Chemistry Education carried out the implementation of Lesson study in Chemistry learning in high school. Remember big benefit from lesson study to motivation teachersand lecturersto do that.

Benefit *Lesson study* one of them is improving the quality of teacher learning in learning. In addition lesson study can be source science to skill observing, analyzing, collecting literacy and observation, and documentation skills. The results of observations and also documentation of the data can be used as learning resources for sustainable learning. It is Lesson study can change learning more be effective and efisien to increase sensitivy as observer (Hidayah 2017). Based on Supahar (2010) that the existence of Lesson Study makes the teacher can documenter the progress of his work, the teacher can get feedback from other members, and the teacher can publish and disseminate the final results of *Lesson study*.

Ever step in lesson study can give a recomendation to improvement chemistry teaching learning process. So that it can be proposed as a basis for the improvement of the next learning process. Based on result observation the first teacher in teacing the ingredients about the introduction of the instrument only through pictures and by the lecture method. Then a discussion was held which discussed the instrument and ingredients. There are weaknesses in the lecture method and visualization on the ability of students to understand about low instrument and ingredients chemicals. The low level of students 'understanding makes the students' ability to describe and also practice the use of instrument lower. This was also justified by the chemistry teacher at Semarang N 15 High School.

Based on the background description, the researcher tries to combine teacher knowledge with the lecturer so that collaborative research is created. The hope is that with the Lesson Study approach in high school chemistry learning ingrdient The introduction of instrument and ingredient increased understanding and also increased skills. The Skill that student must achieve in this research are the ability to recognize instrument and chemicals ingredients; Identifying, assembling instrument and ingredients, and describing instruments , and arranging ingredients in a series of instrument. While the concept taught in this learning is ingredients Heating; Making Solution; Use of Titration tools; Filtration; and Extraction.

METHOD

Research its using a descriptive quantitative approach that is through quasi-experiments.Research methods using one group pre test post test. Selection pupulation and sample in this research using *purposive sampling* teknik. Sample in this research it students class IPA X 1 in SMA N 15 Semarang semester one subjects chemistry. Divided into 6 group, each groub consists from 6 students. Research held in terpadu laboratory chemistry education muhammadiyah university of semarang. Teaching Material in the form of Introduction to instrument and ingredients chemicals. Step in this research using *lesson study* its *plan do* and *see.* In every step can be explained by :

1. Plan Step

This activity begins with analyzing the previous learning process, namely through the lecturer method. Next set goals, metothods, teaching materials and research strategies as outlined in the Lesson Design and Chapter Design.

2. Do Step

This step lecturer, college student (prospective teacher) and teacher subjects chemistry doing briefing before open class. Next observer from (teacher, prospective teacher, lecturer and waka curriculum). Proses briefing before start activity to open class lesson.

3. See Step

Reflection activities after implementation activities. This activity discuss about result observation activity student and teacher. Beside on result of the reflection obtained a recommendation to next activity in improving learning so that the behavior of students occurs a more positive shift.

The data collection techniques were test, interview, observation, documentation, and portfolio. in test technique, students were given some problems before the teaching learning process. the instruments were twenty multiple choice questions about the identification of chemistry instruments and materials in laboratory. the students' portfolio in drawing chemistry instruments and materials and it's arrangement in an experiment was analyzed using a prearranged scoring rubric.

Data analysis was performed using normalized gain score analysis.

$$g = \frac{score\ \ postes - score\ pretes}{score\ maxsimal\ ideal - score\ pretes}$$

Determination of scoring or N-Gain categories can be categorized as shown in table

1.Tabel 1. categories Scoring N-Gain

Price g	Criteria
$g \geq 0{,}70$	High
$0{,}30 \leq g < 0{,}70$	Medium
$g < 0{,}30$	Low

(Hake, 1998 in Ni'mah, 2018)

RESULT

The result of this research was students' pretest and posttest score. This data was then analyzed using normalized gain score method. The data is showed in Table 2.

Table 2. Average N-gain Data

Score		N-Gain	Criteria
Average Pretest	**Average Posttest**		
6,785	**73,142**	**0,179**	**Low**

Based on Table 2, the N-gain was categorized as low. There was no significant improvement in average score in cognitive aspect. Based on the observation data, this was caused by how the students were in a hurry while doing the tests because the teaching learning process was overtime. The students also expressed this fact when they were

interviewed by the college students. Despite that, there were still some increasing score spread. This can be seen in the data on Table 3.

Table 3. Student's N-gain Score Spread Data

g Value	Criteria	Total	%
$g \geq 0{,}70$	High	0	0
$0{,}30 \leq g < 0{,}70$	Medium	16	44 %
$g < 0{,}30$	Low	20	56 %

Based on Table 3, it could be seen that there were still some rise in students' cognitive skills. Thus, it could be concluded that there was a difference when the teaching learning strategy was expository and laboratory activity. This not only supported by how the students could interpret the instructions in pictures of instruments and instruments' arrangement but also how they could deliver them in verbal presentation activity. Table 4 showed the interpretation result of identification, pictures, and arrangement of laboratory instruments.

Table 4. The Interpretation Result of Identification, Pictures, and Arrangement of Laboratory Instruments

Subject Activity	Instrument Identification	Instrument Drawing	Instruments' Arrangement Drawing
Material heating	100%	100%	44%
Solution making	50%	80%	-
Titration instrument usage	100%	100%	44%
Natural indicator making	100%	100%	-
Filtration	100%	85%	40%
Extraction	75%	80%	-
Average	**87%**	**90, 83%**	**42,7%**

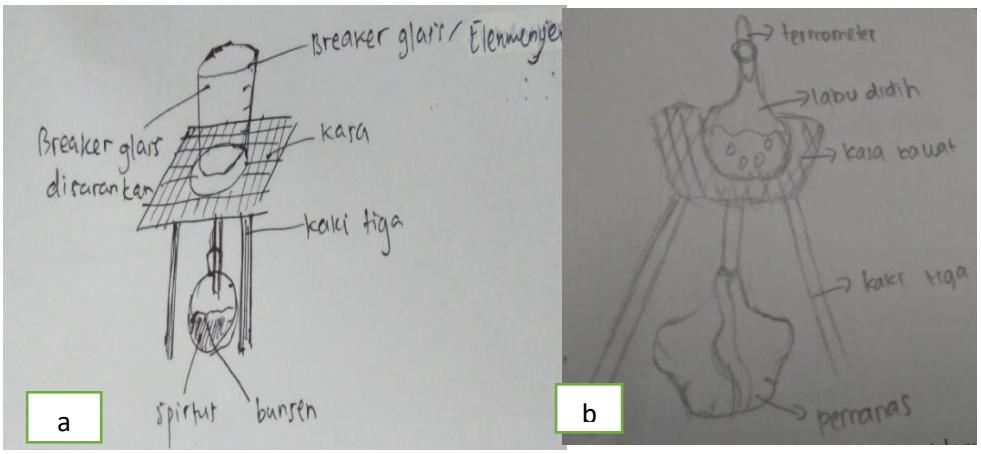
Based on Table 4, the students' ability in identifying chemical instruments were generally good, but not in identifying solution making, which was low. Some students could only mention three instruments in said process, which were watch glass, beaker glass, and volumetric flask. Students' identification results could be divided into six answer groups and showed in table 5.

Table 5. Students' Instrument Identification Result in Solution Making

Group	Instrument Identification in Solution Making
1	Volumetric flask, watch glass, beaker glass
2	Volumetric flask, watch glass, funnel glass
3	Volumetric flask, funnel glass, beaker glass
4	Volumetric flask, beaker glass, funnel glass, volumetric pipette, filler
5	Volumetric flask, watch glass, drop pipette, volumetric pipette, filler
6	Volumetric flask, watch glass, drop pipette, volumetric pipette, filler, scale

The variety of students' answers was a sign that students absorbed the analysis result in different ways. Those differences could be caused by the difference in guidance in teaching learning process. Those answers could be categorized as true, but incomplete and not detailed enough. Those details would help the students to do the experiments, especially in doing quantitative experiment where accuracy is to be expected. For example, in making HCl 1M from HCl stock, the instruments used are volumetric pipette, volumetric flask, filler, spray bottle for aquadest, and drop pipette (Hidayah, 2017). Solution making could be done from solid or liquid base material. The understanding of instruments' functions and solution making's aim should be explained before the teaching and learning process begin. Instrument choosing is very important in laboratory activity. If they the students couldn't interpret the instructions and pick some wrong instruments, there might be some doubt in the made solution. Therefore, it is very important to stress the aim and the necessary instrument for the experiment.

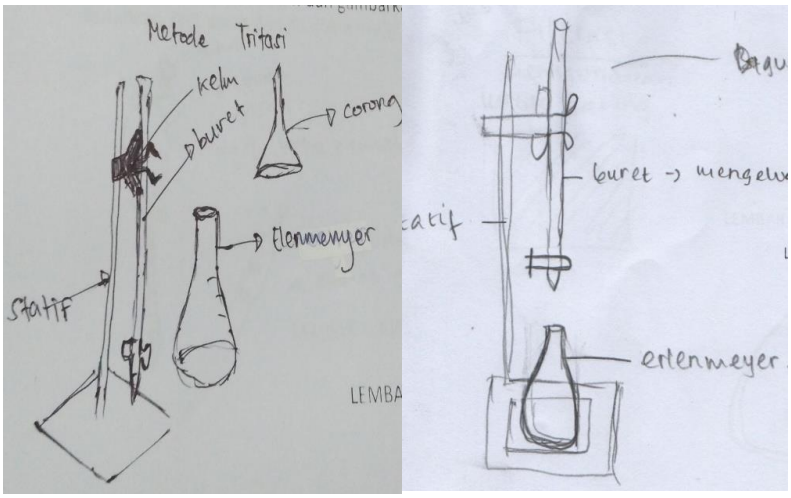
Students often see drawing as a trivial activity. Oemar Hamalik (1986) in Kurniawan (2014) said that drawing is everything that is expressed visually in two-dimension as an outpouring of feelings or thoughts. Whereas based on KBBI, picture is a replica of things, animals, plants, etc. In chemistry lab work, pictures are important tools to communicate the planning and report of said lab work. Pictures on chemistry lab work is used to express ideas and thoughts about instrument's shape, system, process, procedures, diagram, instruments' arrangement, and activity guideline. The existence of the picture can give the students information in a form that is relatively easier to understand. The students had very good capability in drawing as showed in Table 4. They could draw similar to the instrument's real shape. Some of the students' drawing in heating process can be seen in Picture 1.



Picture 1. Drawing of Instruments' Arrangement in Compound Heating Material

The ability to draw a series of tools is very structured and able to be read well so that it can be understood by other students about the work processes and stages in the process of the circuit. The variation of the heating process means that there are differences in functions and objectives in the experiment. In draw (a) only basic heating proses, compound and liquid not volatil can using heating like that. Whereas in figure (b) the heating is using a bath and as a container in the form of boil flask. Boil flask also connected with the condenser or setting the distillation and reflux apparatus. Moreover can be modification with plush termometer and can be using for thermometer

Component a series of heating processes are in activity laboratory with the experiment. In addition to the draw heating process, a series of tools for titration can be seen in Figure 2. Titration is basic activity in chemistry praktikum. One of its test kualitatif to determine a level compound. Standard equipment in titration using stabs, clamps, burettes, erlenmeyers, glass funnels, and glass beakers. Every instrumen can strung together with pay attention to the location and direction of the scale. accuracy in drawing really needed in this series. In this draw 2 don't shown scale and buret. Scale in erlenmeyer has been shown in this draw. The titration equipment component can be visualized through in draw 2.



Draw 2. Titration instrument series

Generally, students of grade xii ipa 1 had the cognitive and drawing skills, and also capable of arranging lab work instruments. students gave various responds to this chemistry teaching and learning process with lesson study approach. generally, they were glad because it made them feel cared for. it is very important to make a good teaching and learning plan so that the process could be clean and neat. using laboratory as a teaching learning tool helps the students a lot in solving problems and giving real experience.

Response positive given from teacher chemistry subject. Basically the teachers have never used or applied learning lessons in the learning. The teacher explanation of the following lesson study:

" *The impression of using the lesson study approach in general is very good because in learning really everything has been prepared. Activity has been prepare before in advance through the disign lesson. Besides, aspects of the aspects that will be assessed by students are also prepared. In the planning stage: teacher and lecturer discuss to prepare activity has been do. Start from frist activity, core and last activity. prepare also can be do to make instruments assessment. The implementation activities are also very well seen from students who are enthusiastic in carrying out learning, seen from the questions they asked the teacher and assistant, then when asked to draw a chemical tool they already knew. then when asked to draw a chemical instrument they already knew. It turns out that the drawing results are very good and detailed. This impelementation activities closing with presentation from each grub, and it turns out that each group can use it well and look they enjoy and are not burdened. In every each other groub presentation, other grub also give attention very well* "

Response Positive not only from teacher subject chemistry, studen but also from student intern, they have an amazing experience. Experience good lesson study very meaningful. Hopefully the teacher candidates can implement it when they return to their respective universities.

CONCLUSION

Lesson study giving a very extraordinary role to the improvement of the learning process. In this study the cognitive abilities of students have not been measured precisely so as to produce a low N-Gain average. But in the interpretation of data drawing, stringing instrument and also identify produce drawing that are able to be digested and read well and systematically. Positive responses presented by lecturers, teachers, students and prospective teachers are evidence of the importance of applying lesson study in educational institutions.

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INTEGRATING LUWU LOCAL CULTURE INTO THE TEACHING OF READING COMPREHENSION (STUDENTS' PARTICIPATION AND PERCEPTION)

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Abstract. Integrating local culture into the teaching of EFL classroom is commonly paid less attention by teachers espeially in teaching reading comprehension, meanwhile it has been an agenda in national curriculum now. Most of teachers provide their students with the text derived from the English speaking countries which reflect the native speakers' cultures. This somehow brings problem for the students in understanding the subject and it effect to their classroom participation since they have limited prior knowledge about the text. This particular research is done in order to find out the students' classroom participation in reading comprehension class with the integration of Luwu local culture and how students' response to it. The data derived from self assessment rubric and questionnaires. The result of the research found that students' participation trhough the integration of Luwu local culture is in competent level and they have positive response to the integration of Luwu local culture into the teaching of reading comrehension.

Key words: Luwu local culture, reading comprehension, students' participation, and perception.

INTRODUCTION

English reading comprehension is a complex thing to be done by the students in EFL studies because they have to understand what they have read. Since its complexities, the students did various ways in order to understand the passage being read, including looking up the meaning of the words in the dictionary but after doing it, they are still fail to understand the text. Some factors can cause of it, one of them is the students' background knowledge about the text they have read. As suggested by Duke and Pearson (2002:206) that in order to understand the text being read, students have to compare and integrate it to their prior knowledge, but the problem arise then is when the students do not have any background knowledge on what they are reading and this problem happened to the most of students in Indonesia now including in Luwu. Most of the passages which are provided by the teacher/instructor as the teaching material are the text derived from the English speaking countries which reflect the native speakers' cultures. This somehow brings problem for the students in understanding the subject and it effects to their classroom participation since they have limited prior knowledge about the text.

To solve the problem, one way can be done by the teacher is integrate local culture into the teaching of reading. The important of doing this research is that it gives some benefits for the students: the content will be more meaningful if the process of teaching it related to students' cultural background, it would promise a potentially effective solution to boost the

English Language teaching program (reading comprehension) in Luwu to facilitate as well as to develop students' knowledge on the target language, and enhance students knowledge about their local culture as one of the way to save the local culture of Luwu from extinction, but it doesn't mean that culture of the target language should be denied.

Referring to this problem then the researcher integrate Luwu local culture into the teaching of reading comprehension since the use of local culture brings some benefits for both teachers and students. For teachers, it plays very important role in improving students' motivation, engagement and interaction among the students (Segni and Davidson: 2016) meanwhile for students, it motivates them to understand more the language since the content is familiar for them (MC Kay:2000).

The process of teaching reading comprehension in this research was done through lesson study. The teaching process was done through plan, do, and see. The teaching and learning process was done by one of the eight semester students (instructor) who conducted a research for his thesis. Before doing the teaching process, the instructor had plan with his lecturers and involved some other students who conduct the similar research and invited some observers to observed his class and after the teaching process, he had reflection.

Cultural Content and English Teaching

Many people believe that teaching English should be about English element and English culture, they less consider that the students' local culture must exist in teaching English as stated by Crawford in Richards and Renandya (2010: 88) that effective teaching material is the one that providing cultural and linguistic input and rich selection of integrated activities. A related assertion stated by Kramsch in Prastiwi (2013) that cultural exists whenever the language is being taught. Functioning EFL as the context for local cultural knowledge acquisition makes the students experience a negotiation between their own culture and the cultural knowledge of the target language. Being introduced to the target culture through teaching materials and class activities essentially helps the students to recognize their own identity that identity formation happened. From this assertion, it can be assume that learning foreign language can be done comprehensively if the context of the target language culture is understood by the students. In order to understand the culture of the target language, students should have knowledge on their own local culture to help them catching the cultural concept of the target language by comparing their similarities and differences.

Local Culture in Teaching English Reading Comprehension

Linguistic knowledge can affect one's reading, but cultural factors plays more important role in the reading process, most of the true and serious reading barriers are not only from the language knowledge itself, but also caused by cultural differences between the target language and our mother tongue. Sometimes we find that the students may recognize and understand the meaning of each in the text, but they are still not so clear about the meaning of the whole sentences or paragraphs (Choudhury, 2014:7).

Based on this statement, then it is very important to integrate local culture of Luwunese into the teaching of reading comprehension. Folktale of luwunese can be used in narrative text, a text about wedding ceremony for descriptive text, how to make traditional food for procedure text, issues on education, government, social life in Luwu for

argumentative text and many more. By integrating those culture into reading context, it can help to preserve Luwunese culture.

Students' Participation

Warayet A. (2011) describes that participation is not only relies on the students' capability to give oral participation but also non-aral participation but this research examined only on oral participation. Peterson, R. M. (2001) classified participation into two, they are classroom participation and course participation. According to him classroom participation is the participation which relates to the students' involvement by being vocal and active in answering and asking question and participating in the discussion which happened in the classroom. Meanwhile course participation is the students' participation which is not only happened in the classroom but it may be outside the classroom. It involves readily speaking, thinking, reading, role taking, risk taking, and engaging oneself and others.

For sure, in this research the researcher focused he research on the classroom participation. As Fritschner (2010:342) says that student participation takes place by simply attending class or by orally participating in class through comments or questions or even giving oral presentations. This also includes how far students develop an on-task behavior and take effective part in the task or activity assigned to them. While Dancer and Kamvounias (2005:23) has also divided students' participation into five categories, they are: student attendance, preparation, and contribution to class discussion, and group skills and communication skills, but in this article the operational definition used for inclusion is "students' classroom participation" which consists of asking and answering questions and making comment and active listening during the teaching process.

METHOD

This present research involved the fourth semester students of English Education Study Program of Palopo Cokroaminto University which consist of 20 students. A descriptive method was employed. To get the data about the students' classroom participation, the researcher required the students to have self assessment of their classroom participation, the researcher administered 'students' classroom participation rubric' to them and ask them to respond to it honestly. The rubric consist of one general statement which ask the student to list up some ways that they have actively participated during the teaching and learning process and four items of classroom participation, they are "asking question (to the instructor and group)", "answering question (instructor and group)", "giving comment", and "active listening". The assessment rubric applied in this research used three Likert scale 1-3 (3 = always, 2 = sometimes, and 3 = never). For sure, having self assessment is not the problem anymore for the students involved in this research since they had done it before. The questionnaires were used to get the data about the students' response. The questionnaires consist of twelve statements and each item of the questionnaire was followed by five-point Likert response scale, with the alternative labeled: "strongly agree", "Agree", "Doubt", "Disagree", and "Strongly Disagree".

A. Finding and Discussion

This research aims at finding out the students' classroom participation in reading comprehension class with the integration of Luwu local culture and how students' response to it. The teaching and learning process was done through Lesson Study. The video recording of reading comprehension teaching-learning process, conducted four times lasting 100 minutes each, revealed that by integrating Luwu local culture into the teaching of reading comprehension, makes students participate more in the classroom. Students tend to give more comment, ask some questions about the material and answer the given question. They also kept themselves participating in group discussion. Meanwhile the result of the questionnaires reveals that students have positive responds on the integration of Luwu folktale into the teaching of reading comprehension.

In the first meeting, the passage discussed was the Story of Sawerigading….the second was

Based on the result of the analysis, it is found that the students' classroom participation is

Table 1. Asking Question

Assessment Categories	1st Meeting			2nd Meeting			3rd Meeting			4th Meeting		
	3	**2**	**1**	**3**	**2**	**1**	**3**	**2**	**1**	**3**	**2**	**1**
Asking question to the instructor	4	0	16	2	1	17	0	3	17	0	2	17
Asking question to the group mates	8	4	8	12	3	5	12	2	2	14	3	2

The data presented in the table 1 illustrates the number of the students participate during the teaching and learning reading comprehension with the integration of Luwu local culture by asking question to the instructor or group. It is evidenced from the table that the number of the students who always ask question to the instructor from the first to the fourth meeting kept going down. It means that most of them avoid asking question. In contrary, the number of the students who always question to the group mates keep rising from the first to the fourth meeting.

The result of the self assessment illustrates that, in participating to the classroom, students tent to ask question to their group mates then to the instructor. The data supported by the students' answer on the open ended question written on the self assessment form. Most of them wrote "I ask questions to my friends".

Table 2. Answering Question

Assessment Categories	1st Meeting			2nd Meeting			3rd Meeting			4th Meeting		
	3	**2**	**1**	**3**	**2**	**1**	**3**	**2**	**1**	**3**	**2**	**1**
Answering instructor's question	0	7	13	1	2	17	0	3	17	0	5	15
Answering group mates' question	7	2	11	4	15	1	4	15	1	11	8	1

Table 2 reveled that, from four meetings of the teaching and learning process, there is only 1 (5%) student who always answer the instructor's question, it is on the second meeting. Meanwhile the number of students who sometimes answer the instructor's question is varied but most of them choose never. On the other way, the number of student who

always answer the group mates' question is 7 (35%) in the first meeting and decrease in the second and third meeting but then it significantly climb up in the fourth meeting to be 11 (55%). Moreover the number of students who sometimes answer the group mates' question increase from the first to the second meeting and it remain steady in the second and the third meeting but it reduces in the fourth meeting. Even so, the number of students who doesn't participate in answering group mates' question decline I the first meeting to the second and keep remaining the same to the fourth meeting.

The number of students who always and sometimes answer the group mates' question is large then those who answer the instructor's questions. In relation to this point, when the instructor propose question, seldom students were brave to answer it by her/him self, in fact they answer it together with the others. It proves that the students still feel reluctant to the instructor. This problem becomes a discussion in the first reflection phase. Some of the observers suggest varying the students' activities,

Table 3. Giving Comment

	1st Meeting			2nd Meeting			3rd Meeting			4th Meeting		
Assessment Categories	**3**	**2**	**1**	**3**	**2**	**1**	**3**	**2**	**1**	**3**	**2**	**1**
Giving Comment to the group discussion	12	1	2	16	3	1	17	2	1	18	2	0
Giving Comment to the classroom	0	5	15	4	15	1	6	12	2	7	13	0

In relation to 'giving comment to the group discussion', overall the students are active from the first to the last meeting. In the first meeting there are 12 (60%) of the students who always give comment to the group then it keeps going up to the last meeting. On contrary, the number of students who do not give comment to the group go down from 2 (10%) to 1 (5%) and even it reaches 0%. Meanwhile in giving comment to the classroom, there are only no one do it in the first meeting 5 (25%) students sometimes do it but then it improves in the second meeting and go down in the third and fourth meeting but it is not significantly. The surprising thing here is in the first meeting there are 15 (75%) students do not give comment to the classroom.

Giving comment to the group discussion seems enjoyable for the students. It is assumed that they do so since they have high curiosity in understanding deeply the passage being read. Another assumption is the students have background knowledge about the text since the information given in the text is around them. Meanwhile giving comment to the classroom is one of the problems in the first meeting. Some of the observers complained about it in the reflection phase and offered some techniques to improve it. The instructors then tried to do his best, that's why from the second meetings to the fourth meeting seldom students avoid giving comment to the classroom.

Table. 4 Active listening

	1st Meeting			2nd Meeting			3rd Meeting			4th Meeting		
Assessment Categories	**3**	**2**	**1**	**3**	**2**	**1**	**3**	**2**	**1**	**3**	**2**	**1**
Active listening	18	2	0	19	1	0	20	0	0	15	5	0

The observation of the observers found that in "active listening", most of the students listen actively from the first to the fourth meeting, even all of them choose being active in listening in the third meeting.

Table 5. The percentage of students score in questionnaire

No	Criteria	Score	Frequency	Percentage (%)
1	Very positive	84-100	12	60
2	Positive	64-83	8	40
3	Undecided	52-63	0	0
4	Negative	37-51	0	0
5	Very negative	20-36	0	0

Based on the data in the table 5 and mean score the researcher found that the student' perception toward the integration of Luwu local culture into the teaching of reading comprehension is in very positive classification. It can be seen that 12 (60%) students get the score which classified very positive score, and then 8 (40%) students get positive score and the researcher did not find the students who choose undecided, negative and very negative. It can be concluded that majority of the students give very positive perception toward Luwu folktale as teaching material to teach reading comprehension since it helps them to participate in the classroom.

CONCLUSION

Integrating Luwu local culture into the teaching of reading comprehension indeed help students to participate more in the teaching and learning process. Students can participate more in asking and answering question, giving comment and listening. Students also have positive perception to the integration of Luwu local culture into the teaching of reading comprehension.

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TEACHER'S ABILITY TO USE AND DEVELOP INSTRUCTIONAL MEDIA THROUGH LESSON STUDY AS A TEACHER PROFESSIONAL DEVELOPMENT MODEL

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Abstract. Various ways can be done by the teacher in building students' learning communities, including developing instructional media. The ability of teachers to utilize and develop instructional media directly affects the quality of learning and students' learning outcomes. Lesson study acts as an ideal medium to produce effective learning strategies by utilizing and developing thematic wetland-based media. The goals of this study is to describe the ability of teachers in determining and utilizing wetland-based media to build and develop students' learning communities. The research method or approach used as a solution offered to solve the problem in this study is the assistance of Lesson Study in the target school, which is SMPN 14 Banjarmasin. The subject of this study were all mathematics teachers at SMPN 14 Banjarmasin. While the object in this study is the ability of teachers to utilize and develop instructional media by utilizing wetland-based media. Data collection techniques that used are observation and interview. The results showed the following: (1) In the preliminary activity, the teacher was less creative in utilizing instructional media related to apperception and motivation activities as an inspirational media to build students' learning abilities. Teachers have tried to facilitate the students to interact through teaching props as media, but was unable to make students actively participate. (2) In the core activities, the teacher was less innovative and creative in utilizing and empowering various types and forms of media as a learning resource for students, however, the teacher was able to choose the right teaching props as a instructional media for students and strive to build students' learning skills through the teaching props. However, the teacher was still unable to use the media as a tool to develop students' learning abilities. (3) In the closing activity there was no effort made by the teacher to build students learning abilities, because the teacher did not do self-reflection related to the abilities that students successfully master.

Keywords: instructional media, lesson study, development model

INTRODUCTION

There are many ways that the teacher can do in building the students' learning community, including developing instructional media. The ability of teachers to use and develop instructional media directly affects the quality of learning and student output. Therefore, coaching the mindset of teachers in developing instructional media is the main target in order to produce high quality learning outcome. In this regard, the results of observations carried out by the Lesson Study Team of the Provincial Education Office showed that The Pilot School, which is SMPN 14, did not induce their experiences to other schools. This also impacted on the lack of school experience related to efforts to foster the ability of teachers to utilize and developing instructional media.

On the other hand, although some teachers at SMPN 14 have used various methods and media in the learning process, they haven't oriented on how students learn, let alone reflect on the

evaluation and reconstruction of subjects after the learning takes place. In addition, there is still a lack of collaboration between teachers in designing the lesson, lack of learning community between teachers as well as between students, and between student-teachers. This reality further narrows the teacher's insight, because the teacher does not get the learning experience directly from the learning done by others. Therefore, it is necessary to find an effective way or pattern as a medium to develop effective learning innovations in order to improve the quality of learning and teacher professionalism. One of the concepts that will be developed is lesson study. Lesson Study is a model for educating coaches by studying learning that is carried out collaboratively and continuously based on the principles of collegiality and mutual learning, to build a learning community [2]. Regarding this, one of the philosophy of Lesson Study is learning from learning. This activity intends to foster the mindset of teachers in developing various ideas to utilize and develop various instructional media that are realistic and related to the students.

The optimal use of media to get the desired learning outcomes requires training and a long time, to understand the characteristics and the utilization [4]. While in Indonesian context, LS is defined as a model of professional development for educators by studying teaching and learning activities collaboratively and continually, based on the principles of collegiality and mutual learning to develop a learning community among educators [2]. This means that lesson study can act as an ideal medium to produce effective learning strategies in utilizing and developing instructional media. With the implementation of lesson study as an inspirational media, it is expected to develop the mindset of teachers in improving the quality of learning at SMPN 14 Banjarmasin.

Djamarah [1] states that if the media is a source of learning, then broadly the media can be interpreted as humans, objects or events that allow students to gain knowledge and skills. Therefore the teachers should be able to design media that is related with student environment. While the media that are used in each part of learning should also be connected to each other, like in apperception, motivation, and core activity.

Lesson Study

Lesson Study can be interpreted as a model for educating professional development through collaborative and ongoing learning assessment based on the principles of collegiality and mutual learning to build learning communities. According to Lewis [3] the idea contained in Lesson Study is actually short and simple, that is, if a teacher wants to improve learning, one of the most obvious ways is to collaborate with other teachers to design, observe and reflect on learning. Based on the definition of Lesson Study, there are 7 key words, which are professional coaching, learning, collaborative, sustainable, collegiality, mutual learning, and learning communities. Lesson Study aims to continuously educate the professional profession so that there is an ongoing improvement in the professionalism of educators. Assessment of learning must be done periodically, for example once a week or fortnight because building a learning community is to build a culture that facilitates its members to learn from each other, mutual correction, mutual respect, mutual help, mutual restraint. However, it must be realized that building a culture can’t be done in short time, it will require a long time. The period of time needed to build a learning community culture has no limit, the longer the better.

With regard to learning, there is no perfect learning strategy, there is always a gap to improve it, therefore learning must be studied continuously in order to be better and better. Learning studies are intended to find solutions to learning problems so that there is an

improvement in the quality of continuous learning. The learning assessment cycle is carried out in the following three stages that consist of Plan, Do, and See.

Through Lesson Study, the teachers collaboratively seeks to translate educational goals and standards into the real world in the classroom. They try to design learning so that students can be helped to find learning goals designed for a subject matter. Rock & Wilson [6] states that through lesson study teachers work in a unified effort to study classroom lessons and initiate positive change for instructional practice and students' learning. While Tall and Verhoef [10] also states that external stimuli, like scientific literature, discussions in a lesson study team and reflection on classroom practices, made teachers aware of students' thinking and learning processes besides classroom management. According to these, Lesson Study could be considered as a development model for teacher's ability and collegiality.

Instructional Media

One aspect that makes mathematics difficult to understand is because the objects are abstract. This makes mathematics require more effort from the students so that the concept can be well understood. Especially for junior high school students who are still in the transition period from concrete to abstract thinking processes, it is necessary to have tools that can facilitate students in the learning process. One solution that can be applied is to use instructional media that serves as a "bridge" to help students transition from concrete thinking processes to abstracts. Instructional media is a tool that can be used to convey the message to the students for the purpose of learning to be achieved. Each instructional media has unique characteristics, so it needs careful planning in using and utilizing the media [9]. Besides paying attention to media planning, the use of media must also be designed as attractive as possible in accordance with the characteristics of learning [5].

This corresponds to innovation in mathematics learning, one of them is the use of media that is supported by the advancement and development of technology [7]. Besides facilitating students in understanding the material, the use of instructional media in teaching of mathematics can improve motivation, attention and learning achievements of the students [8].

In relation to the above formulation of the problem, the aim to be achieved in this study is to identify:

1. The development of teachers mindset in designing instructional media to improve the quality of learning and students' learning outcome.
2. The ability of teachers to develop ideas to utilize and develop instructional media to build and develop students' learning communities.

METHODS

The research method or approach used as a solution offered to solve the problems in this study is mentoring Lesson Study in the target school, which is SMPN 14 Banjarmasin. In general this assistance includes covering initial activities, mentoring core activities and mentoring closure activities.

In connection with the target school in this study, the subject of this study was all mathematics teachers at SMPN 14 Banjarmasin. While the objects in this study are the research objectives, namely the ability of teachers to utilize and develop instructional media by utilizing instructional media.

This study was designed with a Lesson Study mentoring approach. In this case mentoring included mentoring initial activities, which included LS socialization and developing learning

design and tools (lesson design). Furthermore, the core of Lesson Study's mentoring as a medium to foster and develop the mindset of teachers in improving the quality of learning is reflection, which is to reflect the results of the design in learning. As the closing activity in this mentoring is the dissemination of the results of the teacher's research after Lesson Study. In this regard, the solution to overcome the problems in the target school is related to fostering the mindset of the teacher, so that teachers can develop their ability to improve the quality of learning and students' learning outcome. This assistance includes three stages in accordance with the stages in the Lesson Study, starting from mentoring in developing learning tools (Plan), mentoring in the implementation of learning (Do) and mentoring in Reflection (See).

Work procedures to support the realization of Lesson Study mentoring in target schools in accordance with the target of mentoring, namely to foster and develop the mindset of teachers to improve the quality of learning and student output, the steps taken are:

1. Do some analysis,
2. Identify priorities,
3. Develop work plans.

The collection techniques used to obtain data related to the teacher's ability to build students' learning communities are:

1. Observations carried out during Open Class (OC)
2. Guided free interviews conducted with model teachers and other teachers who act as observers.

In connection with the qualitative approach used in this study, the data analysis is inductive. This means that the analysis based on facts (data) obtained, then developed with technical triangulation and source triangulation.

RESULTS

A. *Description of the results of planning activities (Plan)*

The implementation of the planning activities carried out for 6 materials, namely: perimeter and area of rhombus; perimeter and area of the kite; perimeter and area of trapezoid; surface area of cube and cuboid; volume of cubes and cuboid; prism surface area. Everything is distributed in three plans, each plan discusses two learning material (Do).

Each plan activity is carried out to hold a discussion forum with the teachers to design ideas that will be applied in learning for every two Do. In general, activities are in the plan stage, namely:

TABLE III. RESULTS OF PLAN 1 ACTIVITIES

Material	Activity	Observer
1. The circumference and width of the rhombus **2.** Volume of cubes and cuboid	1. Designing learning ideas, namely: ✓ The idea of contextual media used in apperception, in accordance with the rhombus, cubes and blocks ✓ The idea of media is related to contextual motivational material ✓ The idea of cognitive conflict to develop the use of media as a source of students' learning 2. Designing instructional media in the core activities, related to rhombus building, cube and cuboid. ✓ Media for motivation	6 members

	✓ Media for apperception ✓ Media for core activities 3. Predict students' learning reactions related to media use 4. Preparing Lesson Plan	

Learning from Plan 1 and Plan 2, the teacher begins to be creative in designing media that is used as a source of students' learning. However, the main problem remains in determining and developing communicative media. In this case the teacher is not able to use the school environment or the student environment as a medium. Likewise in developing media that has been previously designed.

Furthermore, the results achieved in mentoring the plan through Lesson Study are as follows.

TABLE IV. RESULTS ACHIEVED THROUGH MEDIA ASSISTANCE PLANS

P	Material	Result
1	1. The circumference and width of the rhombus 2. the volume of cubes and beams	1. Design results obtained related to the idea of using instructional media include ✓ contextual media apperception ✓ media for contextual motivation ✓ The idea of cognitive conflict to build students' learning communities 2. The results of the development design related to instructional media include ✓ Media for motivation ✓ Media for apperception ✓ Media for core activities 3. Obtained the teacher's understanding of mathematics in designing ✓ The idea of learning mathematics ✓ Mathematics instructional media ✓ The idea of cognitive conflict to build students' learning communities 4. Found the difficulty of the teacher in designing ✓ The idea of learning mathematics ✓ Mathematics instructional media ✓ The idea of cognitive conflict to build students' learning communities 5. There is collaboration between teachers related to insights / ideas in developing learning activities based on
2	1. the circumference and width of the kite 2. volume of cubes and beams	
3	1. circumference and area of trapezoid 2. prism surface area	

		students' learning problems in building students' learning communities 6. In the second and third plan, there is an increase in the understanding and creativity of teachers in designing various elements to build students' learning communities. ✓ The idea of creative and contextual mathematics learning ✓ Context / real instructional media

B. *Description of the results of Do activities (implementation of learning)*

In accordance with the material planned in the plan, the implementation of learning in this study was carried out 6 times. In this case it is carried out for three weeks and is carried out twice a week. Then reflection is done after completing two lessons (Do).

From the results of observations during the Do_1 and Do_2 activities, it was seen that teachers were less capable, especially in using the planned media. This fact has an impact on the efforts made to develop the media as a source of students' learning, because not all students have the same learning rights. This can be seen from the systematic learning group that has not been able to encourage active participation of all group members, for example when the teacher asks students to observe the instructional media in groups, only some members were seen active.

Fig. 3. Implementation of model teachers in class VII C of SMPN 14 Banjarmasin

Furthermore, in the fourth week, the Do_3, Do_4 and See activities will be carried out as a follow up of the plan in the third week.

In general, the problems that occur in Do_1 and Do_2 are repeated in Do_3 and Do_4 activities, although there has been an increase but not significant. The student's tendency to be creative has been formed, but the teacher does not take advantage of the potential that already exists.

From observations during learning activities (Do), in general there has been an increase from the Do_1. In this case the creativity and ability of the teacher in utilizing the media to build students' learning communities during the learning process, still needs to be honed and developed. This is natural because there is no perfect learning, there is always a gap to improve. Teachers must have the opportunity and commitment to learn from the learning done by peers.

Results on Learning Activities (Do)

The core of the Do activity is the implementation of the lesson design and learning tools compiled in the Plan. One of the supporting factors for the success of learning conducted by teachers in Do activities is Plan. However, a teacher is also required to be able to improvise

learning activities in accordance with student conditions that occur when learning takes place. This is because the lesson plan does not predict student reactions that occur during the learning process.

TABLE V. RESULTS ACHIEVED THROUGH MEDIA ASSISTANCE DO

Do	Do Materials	Results
1	Perimeter and area of rhombus	1. Identified teacher weaknesses in: a. Apperception and motivational activities related to the use of media as a source of students' learning. b. Motivate students to dare to play an active role in expressing opinions in the learning process related to efforts to use the media used as a source of students' learning c. Determine the media related to apperception material and how to do apperception
2	Volume of cubes and cuboid	Physical activity and mind of students have not been involved
3	Perimeter and area of the kite	Teachers are less able to utilize the media chosen as a learning resource for students
4	Volume of cubes and beams	Teachers are less able to utilize and empower students' abilities as learning resources for other students in learning.
5	Perimeter and area of trapezoid	Presentation of the results of group discussions has not been used as a medium to build students' learning communities.
6	Prism surface area	Teachers are less able to mediate classroom conditions that are interactive but not participatory, becoming interactive and participatory.

Obstacles and constraints on Do activities are more complex than Plan activities. In Do activities, the success of learning activities is influenced by the teacher's ability to appreciate what has been designed in the plan. In addition the teacher must be able to utilize the selected media, student environment and students' learning problems as a medium to build and develop media as a source of students' learning.

The results of the study show that some of the main problems that occur during the learning process, especially in the preliminary activities, core activities, and closing activities are as follows.

1. Preliminary activities

In this activity the teacher has tried to use the media as a learning resource for apperception and motivation material in accordance with the initial idea (plan), even though it has not been fully implemented. In the beginning, the teachers still not creative in utilizing the environment as

a medium and the potential of students as media. In connection with this, the result from observation shows that:

1) Teachers have not been able to utilize the learning environment of students as contextual media.
2) Teachers do not utilize student problems as instructional media.
3) Teachers are less able to utilize the potential that students have as instructional media.
4) Teachers have not been able to develop students' learning motivation.
5) Teachers have not been able to utilize apperception as a medium to develop students' learning motivation.

2. *Core activities*

The success of the core activities in developing students' learning abilities is strongly influenced by students' learning abilities that are successfully built by the teacher on apperception and motivation in preliminary activities. In this case the teacher has tried to build students' learning abilities but has not been able to develop it. In connection with this, some real obstacles that occur related to the efforts that must be done by the teacher in building students' learning skills are.

1) Teachers are less creative and less able to empower the media used in apperception, especially debriefing activities (initial information) in the core activities
2) Teachers are less creative and less able to utilize the ability and inability of students to argue as learning resources
3) Teachers are less creative and less able to utilize the potential of students as instructional media during group discussions
4) Teachers are less able to utilize the results of group discussions as learning resource media for other groups.
5) Teachers are less able to use class discussion as a medium to build students' learning communities.
6) Teachers do not use students who are actively participate in class as instructional media.
7) Teachers are less able to empower students who are not active through active students.
8) Teachers are less creative and less able to use the learning environment of students as contextual and realistic media as learning resources
9) Teachers are less able and less creative in mediating classroom conditions that are interactive but not participatory, becoming interactive and participatory.

3. *Closing Activity*

At the end of the activity (closing) the teacher tends to only give homework and assignments to learn the next material. In this case the teacher does not reflect on the students' abilities regarding what students have learned successfully. There is no effort made by the teacher to build or develop the students' learning community, except only to provide reinforcement about the concept just learned.

CONCLUSION

At the end of the activity the teacher does not reflect on the students' abilities related to what students have learned. Even though the teacher should do self reflection as feedback. In this case, self-reflection can be done in the form of process evaluation or conclusions regarding the mastery of concepts that are expected to be mastered by students.

Various methods and strategies can be carried out by the teacher in self-reflexion. An effective way that can be used by teachers is to utilize the potential that students have as media. The goal of utilizing the potential possessed by students is to strengthen concepts and improve misconceptions that might occur to students during the learning process. In connection with this, effective strategies used by teachers to make learning more meaningful are carried out exploratively and participatively so that the students are more proactive. This condition allows students to develop learning abilities.

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THE PERSPECTIVE OF PROSPECTIVE TEACHERS IN GAZING A QUALIFIED LEARNING : A CASE STUDY IN THE FACULTY OF TEACHER TRAINING AND PEDAGOGY'S STUDENTS AT DWIJENDRA UNIVERSITY

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Abstract. The aim of this research is to describe the qualification of a qualified learning and to analyze the perspective of prospective teacher in a qualified learning. The research method applied is descriptive qualitative . The sources of data are the prospective teachers of the students of the Faculty of Teacher Training and Pedagogy at Dwijendra University, Bali. The documents are derived from the distributed questionnaires to 93 students of the Faculty of Teacher Training and Pedagogy at Dwijendra University. It used content analysis and questionnaire to collect the data . Moreover, the results of the content analysis and questionnaire s were Analyzed to figure out the perspective of qualified learning. The final findings of this research are shown that 45% of students stated teaching learning processes are able to get direct learning experiences through it. 25% of students mentioned that adequate facilities have big impact for qualified learning. 20% of students stated that teachers need to have direct interaction with their students in teaching learning process for qualified learning. The last but not the least, 10% of students are mentioned that the teacher has to learn from the students, not to the selected students only, in teaching learning process to get a qualified learning.

Keywords: Perspective, Prospective Teachers, Qualified Learning

INTRODUCTION

The quality of education depends on the quality of the teacher. Shaffer Karen Thomas and Brown (2015: 177) [1] states that the teaching profession has evolved and become one in which expertise from multiple fields is integrated to support the educational outcomes of all children. The teacher is a renewal agent. The quality of learning depends on teacher innovation in an effort to improve the quality of learning to produce qualified graduates.

The implementation of the 2013 curriculum is a real step to improve the quality of education in Indonesia. The teacher-centered education paradigm has turned into student-centered education. The change in paradigm requires a change in mindset of education actors. The 2013 curriculum is implemented to realize the goals of national education, namely the development of the potential of students so that students become faithful and fearful people of God Almighty, noble, healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens.

Teacher's role is important in developing students' potential. In Law No. 14/ 2005 article 10: 1 on Teachers and Lectures [2] explained that teacher as agent of change is required to have four competents, namely the pedagogical competence, personal competence, social competence, and professional competence.

Pedagogic competence is the ability to manage learning process which includes understanding of students, designing, and implementing learning, evaluating learning outcomes, and actualizing the potential of students. Personality competence is a personality of educators who are steady, stable, mature, wise, and authoritative, an example for students, and noble. Social competence is the ability of educators to communicate and interact effectively with students, fellow educators, education personnel, parents and the community . Professional competence is the ability of educators in mastering the learning material widely and in depth which enables it to guide students in obtaining the competencies that are determined.

Mastery of the four competencies can be used as an indicator to assess teacher performance. Mastery of these four competencies is also very important for prospective teachers. Dwijendra University is Institute of Teachers's Education (LPTK) has responsibility of generating prospective teachers who have high competitiveness. Understanding of prospective teachers regarding professional teacher criteria is very important to observe. Therefore, a study of the prospective teacher's perspective on professional teachers needs to be done. The results of the study are useful for improve the quality of learning and quality of graduates of Faculty of Teacher Training and Pedagogy's Students **(**FKIP) Dwijendra University so that FKIP graduates have adequate competence.

METHOD

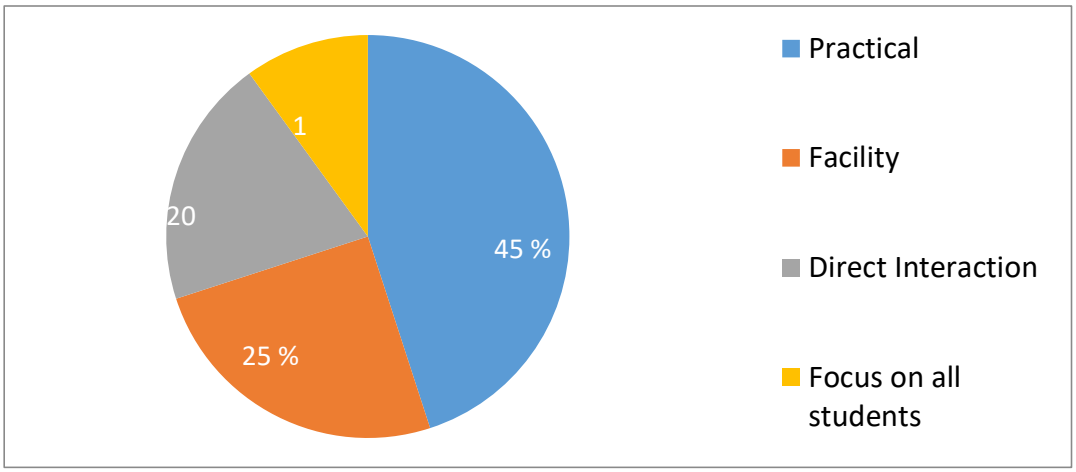
The research subject was the first semester students of the Faculty of Teacher Training and Pedagogy's Students (93 students). The students come from four study programs with 22 students from the Indonesian Education Department, 27 students from the Civic Education Department , 24 from the English Education Department , and 20 from the Primary School Teacher Education Department.

Data was collected by questionnaire and interview methods. Questionnaires were given to obtain data on the prospective teacher's subject to professional teachers. Interviews were conducted to explore information on the opinions of prospective teachers regarding professional. Data were analyzed by descriptive quantitative method.

RESULT

The results showed that there are four perspectives of prospective teachers on professional teachers. First, professional teachers emphasize practice rather than theory. Second, quality learning outcomes are determined by learning facilities. Third, learning is done by the interaction between the teacher and the student . Fourth, learning focuses on all students. The percentage of each point can be observed on the following chart .

Chart 1 Perspective of Teacher Prospective on Professional Teachers



1) Learning is emphasized in practice.

Learning practice needs in learning process. By practicing, students obtain experience in learning. This makes it easy for students to understand the learning process. Based on the chart above, 45% of teachers have perspective that professional teacher emphasize on practice in learning process. This is an implementation of contextual teaching and learning (CTL). CTL according to Sears & Hers in Glynn and Linda (2004: 52) [3] CTL emphasizes using concept and process skills in real world contexts that are relevant to students from diverse back ground. This approach "motivates student to make connections between knowledge and their applications to their lives and family members of citizens, and workers and to be involved in hard work that learning is relevant. One of the characteristics of CTL is modelling

Respondents stated that modelling is a method used by teachers in the learning process by demonstrating something as an example that can be replicated by each student. Modeling is chosen because it is seen to enable students during the learning process. Students not only have an abstract concept of a science but able to practice directly . In learning process, teacher is required to be more innovative and master the learning material. The learning environment is formed into a conducive environment so that the learning atmosphere becomes more enjoyable. Innovative learning and a conducive environment make teachers and students actively participate in learning.

Teacher learning is not the only one model. Furthermore, modeling can be designed by involving students. One student is appointed to be a model based on the experience that he knows. Models could also from outside whose have expertise in their fields (Trianto 2011 : 112) [4] . There are four learning phases in modeling methods such as :

a) Attension phase

The first phase in modelling learning is paying attention to a model that is interesting, popular or admired. The teacher can act as a model for students by presenting material clearly, interestingly and giving emphasis to important material or by demonstrating an activity.

b) Retency Phase

In the retention phase there is storage of information or activities that have been exemplified. Expected retention is long-term retention. This can be done by linking the previous learning to the lessons that will be discussed.

c) Production Phase

In the reproductive phase students repeat an activity process that has been observed before. Teachers should provide feedback on student behavior.

d) Motivation Phase

In the motivation phase students will be motivated to imitate the model (teacher). Providing reinforcement for a particular behavior will motivate students. By modeling students more easily absorb learning material. Learning activities will be designed through management . In the learning process students are given the freedom to be creative but still in accordance with the model being demonstrated. Motivation in the form of values, praise, or prizes will create motivation for students. Students who have not received reinforcement will be motivated to want to gain reinforcement as obtained by their friends. Strengthening received results in increased student activity.

2. Facilities

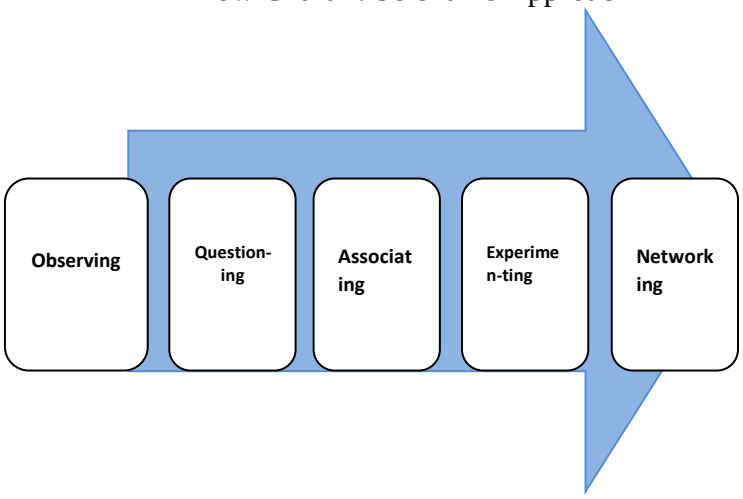
Facilities and infrastructure are important factors in learning process. Based on the *chart* above, 25% of prospective teachers state that the facilities determine a teacher's professionalism. Without adequate facilities, the learning process cannot run well. This shows that the role of facilities and infrastructure are very important to support the quality of learning .

Respondents stated that every subject has a different character from other subjects. Thus, each subject also requires different facilities. In order to organize learning, teachers require facilities to support the learning performance to be interesting. With the support of adequate learning facilities and infrastructure, teachers can innovate in learning so that students are motivated to participate in learning[5].

3. Direct interaction

Based on the chart above, 20% of respondents stated that the ability to interact is a characteristic of professional teachers . Without interaction, learning objectives is difficult to achieved. The 2013 curriculum with a scientific approach directs students to interact actively. According to respondents, the ability to interact is developed by observing, asking questions, , associating, experimenting and networking. Schematic scientific are presented in flow chart 1.

Flow Chart 1. Scientific Approach



A. Observing

Observing is a method that prioritizes the meaningfulness of the learning process (*meaningful learning*). Learning activities in the process of observing such as reading, listening, listening, seeing (without or with tools). Competencies developed are training in sincerity, thoroughness, and seeking information . In the process of observing students are expected to pay attention to what the teachers are presenting. For example videos or fims related to subjects.

B. Questioning

The question is a learning activity carried out by asking questions about information that is not understood . By asking, students get additional information about what is observed (starting from factual questions to hypothetical questions). The competencies developed are developing creativity, curiosity, the ability to formulate questions to form critical thoughts that are necessary for intelligent living and lifelong learning. [6]

C. Associate / Process Information

Associating / processing information is a learning activity in the form of information processing from experimental activities , as well as the results of observing reading other sources besides textbooks, observing objects / events / activities, and interviews with informants. Competencies developed in the process of associating / processing information are developing honesty, thoroughness, discipline, obeying rules, hard work, the ability to apply procedures and the ability to think inductively and deductively in concluding. [7]

D. Experimenting

The activity on experimenting is collecting information / experiments. Learning activities are conducting experiments, reading sources other than textbooks, observing objects / events / activities, interviews with resource persons. The competencies developed are developing conscientiousness, honesty, courtesy, respecting the opinions of others, communication skills, applying the ability to gather information through various ways learned, developing learning habits and lifelong learning. In this learning step, each student is required to try to practice what is learned. [7]

E. Networking

Networking is the activity of students to form networks in class. The learning activity is conveying the results of observations, conclusions based on the results of the analysis orally, in writing, or other media. The competencies developed are developing honest, thorough, tolerant attitudes, the ability to think systematically, express opinions in a concise and clear manner, and develop good and correct language skills. At this stage students present their abilities about what has been learned while other students respond. Other student responses can be in the form of questions, objections or support about presentation material. The teacher functions as a facilitator about this activity. [7]

4. Focus on all students

The learning process can work well when learning objectives are achieved. Each student has experience in the learning process. The system requires the teachers' skills in managing the class . This was realized by prospective teachers of FKIP, Dwijendra University. According to respondents, in learning the teachers must pay attention to all students. Based on the *chart* above, 10% of respondents stated that the skill in paying attention to all students was a characteristic of

professional teachers. In order to make each student to get attention, the teacher can divide students into several groups. Then, the teacher can observe student learning activities easily.

Respondents further stated that a teacher should have skills in managing the class. Teachers are able to do learning innovations so learning is not boring. As a result, students won't feel bored when the method applied is varied.

Rusman (2012: 93) [8] suggests that learning is seen as a system consisting of various components that relate to one another. These components include objectives, materials, methods, and evaluations. The method is an effort to implement a plan that has been arranged in real activities to achieve goals (Robert Heinich, Michael Molenda and James D Russell (1989: 7) [9] .The method is chosen by the teachers to assist students in achieving the maximal of learning goals. Learning methods are a series of deliberate activities by designing, developing, implementing, and evaluating with certain methods to facilitate students with the aim of achieving a competence.

CONCLUSION

Based on the studies that have been conducted there are four the perspective of the respondent to the professional teacher . First, professional teachers are teachers who prioritize practice in learning. Forty-five percent (45%) of respondents have perspective that professional teachers are teachers who emphasize practice . Second, teacher professionalism should be supported by adequate facilities or infrastructure . Without adequate facilities and infrastructure, the learning process cannot proceed well. With regard to facilities or infrastructure, 25% of respondents stated that facilities determine the professionalism of a teacher. Third, respondents stated that professional teachers are teachers who can interact with teachers and students. The number of respondents who stated that the ability to interact is a characteristic of a professional teacher is 20% . Fourth , the learning process can take place well if the teacher can manage the class well. The teacher in the learning process, gives attention to all students. According to respondents (10%), states that professional teachers are teachers who pay attention to all students.

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IMPLEMENTATION OF LESSON STUDY FOR LEARNING COMMUNITY (LSLC): IMPACT ON PILOTING SCHOOL TEACHERS IN BATU CITY

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Abstract— The LSLC implementation was conducted in five piloting schools in Batu City since 2016. The schools involved included Junrejo 1 Elementary School, Ngaglik I Elementary School, Muhammadiyah 04 Elementary School, Junior High School 1 of Batu and Junior High School 8 of Muhammadiyah. This study aims to identify the impact of LSLC on model teachers in piloting schools. Data was collected by interviewing and filling out questionnaires of teachers involved in LSLC activities. A total of 17 teachers were involved as model teachers, and 50 people were involved as observers during the 2016-2017 implementation. During this period, the school implemented two to four open lessons. The results showed that LSLC provided a different learning experience so that the teacher model was able to: 1) plan learning together with colleagues, 2) open classes for observational activities to get an overview of how students learn responses, 3) conduct collaborative learning reflection studies and 4) obtaining best-practices from new learning practices. Thus, the implementation of LSLC can make the model teacher more responsible for learning plans, implementation of learning and follow-up.

Keywords: Lesson study for learning community, teachers, piloting school, Batu City

INTRODUCTION

Lesson study becomes a role model for teacher development that is proliferating in various countries. This Japanese model is the essence of various teacher development models that have developed in the United Kingdom, the United States, India, Vietnam, Singapore, and Indonesia [1]–[5]. The flexibility of adaptation is one of the factors why Lesson Study can be developed by countries outside Japan with various cultures [6]. These variations of adaptation led to the development of perspectives on lesson study both from the standpoint of learning theory, learning design, learning review, expert mentoring, repetitive learning, to collaborative and constructive learning evaluation [6]–[9].

At present, from the perspective of the stakeholder involvement approach, the lesson study perspective shifts from a classical-based to the community-based approach. This broader perspective is then known as the Lesson Study for Learning Community (LSLC). The implementation of LSLC gives space to all components of education such as students, teachers, education practitioners, and even parents to learn from each other and cooperate [10], [11]. In another perspective, Hiebert, Gallimore, dan Stigler [12] stated that the community-based lesson study approach is a progressive step needed to change the individualism and conservatism commonly found in many teachers in America. In other words, the LSLC approach provides space for teachers to improve the quality of daily learning comprehensively. Concretely, LSLC is

intended to build a system of activities in schools to foster teacher professionalism and collegiality in order to work together in learning [10]

Teacher coaching is an integral part of achieving educational goals. Therefore, teacher coaching is a logical step that must be done to improve the quality of learning. However, to achieve these goals requires an integral unity of steps [12]. In other words, the development process should be implemented sustainably through the implementation of learning [13]. Within this framework, the guidance of the teaching profession is directed at improving the quality of learning.

Some experts have reported how LSLC is implemented as a teacher development model through improving classroom learning. The results of the study [14] show that LSLC strengthens teacher competencies in classroom management and planning learning. In line with this, (Cajkler, Wood, Norton, & Pedder, 2013; Fernandez, 2010; Julien & Daniel, 2017; Myers, 2012; Shernoff, Sinha, Bressler, & Schultz, 2017) states that LSLC implementation can be done in various ways. Activities include planning essential learning goals, selecting appropriate media, studying learning videos. Whereas [6], [8] emphasizes the focus of mentoring in conducting learning through the opening of a systemized class, observing student learning activities, predicting student learning responses, reflecting learning outcomes to redesigning learning to improve subsequent activities.

With these various achievements, LSLC is considered very appropriate and needs to be socialized, reviewed its principles and procedures to be appropriately implemented in the field. The implementation of LSLC in Indonesia is carried out with the pilot school model. It was developed in various regions such as Bandung, Bogor, Sukoharjo, Pasuruan, Malang, and Batu [20]–[23].

The implementation of the LSLC program in Batu City was initiated by the Faculty of Teacher Training and Education (FTTE) of the University of Muhammadiyah Malang (UMM) and the Batu City Education and Culture Office supported by Benesse Indonesia. The socialization of LSLC activities involved five piloting schools including three elementary schools and 2 secondary schools. The schools involved were Junrejo 1 Elementary School (ES), Ngaglik 1 ES, Muhammadiyah 04 ES, Junior High School (JHS) 1 of Batu and JHS Muhammadiyah 08 of Batu. Besides, this activity involved around 70 teachers from various levels of education.

With these numerous resource engagements, it is interesting to learn how LSLC has an impact on the teachers involved. This study specifically aims to investigate the impact of LSLC implementation on teachers involved in piloting schools in Batu City.

METHODS

This research was conducted using a qualitative descriptive design. The subjects involved were teachers from the Batu City piloting school who participated in the LSLC program. This research was carried out in the odd semester of the 2017/2018 school year. Data collected by interview method with the open-ended question model and questionnaire filling. The focus of LSLC activities that are considered includes open plan activities, open lesson, and reflection.

A. Participant

The respondents in this study were teachers from 5 piloting schools in Batu City. The teacher in question is a teacher who has been involved as a model teacher or an observer. The total number of teachers involved as respondents in this study amounted to 17 persons.

B. Procedure

Interviews and questionnaires are carried out after the implementation of LSLC for one semester. LSLC is conducted in various activities including 1) non-technical activities such as

socialization activities, lesson study workshops, and 2) technical activities, such as expert modeling classes, open plan, open lesson, and reflection. Respondents selected in this study must be involved in all the activities that have been carried out.

The frequency of LSLC implementation varies in each piloting school starting from 1 time (JHS 1 Batu) to 4 times (Muhammadiyah 4 ES). In each implementation cycle always consists of design, practice, and reflection. Designing lesson design as the initial and critical stage of quality learning. Practice examining how the process and student learning outcomes as the lesson design planned has been run, while reflection is used as a forum to discuss findings in the learning process and provide reinforcement for learning that has taken place.

RESULTS

During the implementation of LSLC, significant progress was obtained, including the benefits of the lesson study felt by schools, ranging from management, model teachers, observers to students at the school. The following are the benefit reports drawn from the results of the LSLC implementation based on written statements by model teachers and observers from piloting schools.

A. Impact of LSLC on schools

Responses from school management elements show that LSLC can be accepted as a way to assist student participation in learning (Table 1). Increasing student participation in learning is one of the impacts of LSLC implementation from the student side. Philosophically, increasing student learning participation is part of learning democracy facilitated in LSLC [24]. Increasing student participation in learning is inseparable from the collaborative efforts of teachers to create space for discussion between students on problems that must be solved together. Indirectly, interrelated relationships emerge between students such as mentoring between students in one group and between groups, peer-processes, and peer-discussion [6], [25]

Table 1. Comments on elements of school management towards LSLC

Respondent	Comments
Respondent 1	*"That in LSLC, students become more active. Besides, learning with LSLC can make a fun atmosphere for children, so they are easier to understand the material being learned. "*
Respondent 2	*"With the implementation of LSLC that has been implemented so far, I see that:* *1) Students learn more actively and fun.* *2) Students more easily understand the material.* *3) Students learn by experiencing themselves and find their own ways/steps in solving problems."*
Respondent 3	*"I get new things from coaching based on LSLC in our school, and this doesn't appear before, like:*

	1) Students become aware of the basic concepts of material taught. *2) Students can find their own way of learning.* *3) Students are more understandable and embedded in their memory about the material because they can find their own way ".*

Besides, the increase in students' interest in learning is one of the results that had previously been thoroughly discussed during the preparation of lesson design. As discussed earlier, the design stage is a fundamental stage in determining the essential aspects of each learning topic. The meaning is, in the LSLC implementation period, teachers are collaboratively able to find and develop learning goals and scenarios that are good for students' learning processes so that students are not faced with things that are not essential material [13], [16], [26]. This is an excellent achievement because the teacher in the learning process through LSLC can present school functions that are comfortable for students to learn and enhance their collaborative abilities.

B. *The impact of LSLC on the model teacher*

According to 3 respondents, professionally applying LSLC has an impact on increasing teacher competency in exploring student characteristics (Table 2). This is a skill that is needed by teachers in their professional service activities to students.

Table 2. Teacher model comments on LSLC

Respondent	Comments
Respondent 1	*"With LSLC I can feel to be a person who knows and understands the character of my students better. Besides that, I became easier to feel students who were experiencing difficulties".*
Respondent 2	*"LSLC activities have had a positive impact on me personally regarding preparing lesson design. I think not only concerning new knowledge about how to develop learning plans in LSLC, but the most noticeable thing is, how we need to think about making lesson design very deeply, especially in setting desired learning goals. Even more than that, I also feel not only in formulating goals, but also new skills in compiling scenarios of collaborative learning activities that consider and implement jumping status for students in high-ability categories*
Respondent 3	*"I feel LSLC activities have a positive influence on me regarding learning implementation, especially in seriousness to serve students who have different characteristics, some are easy to understand, but some are long time-consuming. In my opinion, LSLC makes me more painstaking to provide comprehensive services to all students. Through this coaching activity, I am required to implement active learning where all students learn in groups and self-study is more passionate. I am also encouraged to be more transparent in the implementation of learning because in the implementation of the open lesson, the class is open to being seen, witnessed and observed*

by observers".

The opinion of the two respondents has the same point of view regarding competencies that are felt to develop as long as they are involved in coaching within the scope of LSLC. When referring to research [2], [5] teacher professional development is a need that needs to be encouraged through the expansion and renewal of competencies possessed by the teacher. Exercises, skills, and beliefs are areas that need to be stimulated through the development of pedagogy, changes in curriculum and class-based technology.

Teacher professional development is a need that needs to be encouraged through the expansion and renewal of competencies possessed by the teacher. Exercises, skills, and beliefs are areas that need to be stimulated through the development of pedagogy, changes in curriculum and class-based technology [21]. Besides, the repeated training process and the implementation of the open lesson can gradually bring a positive influence to the teacher, including the skills in understanding the characteristics of the students they face. This is believed to foster confidence and confidence in the teacher in providing the best professional services [12].

On the other hand, other respondents' comments focused on the post-learning reflection function. The existence of a reflection phase at LSLC was felt to be very helpful for the teacher in gaining a comprehensive view of the learning process that had been planned and implemented (Table 3). The presence of observers during the learning process makes it easy for teachers to observe student activities in the process. The role of observers is very central as an extension of the eyes and ears to see and hear student learning activities

Table 3. Impact of LSLC on the views of teachers

Respondent	Comments
Respondent 4	*"After I participated in this semester, I felt that the LSLC activity had a positive impact on the model teacher regarding reflecting the learning outcomes where I as a model teacher was helped by observers. I think there is a benefit from the teacher observer, especially to reveal the learning events experienced by students that escaped my attention. At the time of reflection, I got a lot of complete information from observers about the impression of students learning in class. I am very grateful to observers because I can learn more from the learning that has been carried out through reflection activities because the observers are more observant in seeing my students."*
Respondent 5	*"I noted that with LSLC, I could learn firsthand how to be a teacher who can understand the different character of students. Besides, I became more skilled and learned from students about the difficulties faced by students."*
Respondent 6	*"I observed that coaching in this LSLC became more I learned how to learn students. Besides, I became more sensitive in seeing the difficulties experienced by my students. Coaching that is integrated into this learning process allows me to be able to analyze strengths, strengths, and even shortcomings of observations on how students learn".*

C. *Impact of LSLC on the observer*

Coaching through LSLC is not only felt directly by the model teacher, but also other elements involved such as observers. Although in the process of implementing learning they are not directly involved as teachers, observers remain an inseparable part of an LSLC coaching system. Some respondents stated that their involvement in LSLC as observers was able to learn a learning process from a different perspective (Table 4) because so far they have more often seen the learning process from being a teacher rather than as a student. It becomes a learning perspective that is new and interesting to them [4], [12].

Table 4. Impact according to observers about LSLC

Respondent	Comments
Respondent 1	*"With LSLC that has been done, I learned to be an observer in the student learning process, so that I can take a lot of best-practice from this process even since the preparation of the learning design. I feel this and have an impact on how individual competencies as a professional educator can improve through this coaching model.*
Respondent 2	*"I can find out the learning problems faced by students, besides that, I also get new knowledge about how the principles and philosophy of LSLC are. More than that, I gained a better understanding of how students learn and how the teachers teach.*
Respondent 3	*"As an observer, I can understand the position of students when getting information so that they can provide solutions to students' problems."*

CONCLUSION

LSLC has a positive impact on teachers regarding developing learning plans through deep thinking regarding the desired goals by considering and implementing status jumping for students with different characteristics from each other. Concerning learning implementation, teachers become more dedicated to providing comprehensive services to all students by implementing active and transparent learning because they are open to being seen, witnessed and observed by observers. Besides, the teacher gets complete information about the students' learning impression in class and can learn more from the learning that has been carried out through reflection activities.

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ADAPTING TEACHER'S STRATEGY IN TRIGGERING STUDENTS' PARTICIPATION IN LEARNING ENGLISH THROUGH LESSON STUDY

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Abstract. A teacher's strategy in managing classroom might be based on his experience during years of teaching. One of the factors that might be getting a little attention is that the world is changing; the students input are varying from year to year. This study was done to describe the students' participation in English classes by applying some distinguished strategies. It was found that the students were able to maintain their participation if the teacher provided the learning strategy in various ways, even though for the same material or topic. The students who are indicated in low achiever need more strategy to maintain their participation in the process of learning rather than intended on the material delivery. The limited time but more topics make the teacher need to compete with the time to execute the demand addressed to them. However, for private school, many policies that might also influence the process of learning itself, some of the leaders are supporting the process of learning, but some of them assign additional duties for teachers in beside their main responsibilities; teaching.

Keywords: teacher's strategy, students' participation, English learning

INTRODUCTION

In response to growing academic disillusionment, whatever the reason is, educators must actively work to include extracurricular activities in the classroom as incentive for students to enjoy the learning process. Meanwhile, on the other hand, some argues that personality traits influenced the development of intellectual skills. What happened in the classroom are mostly as a result of many factors. Students' participation in the learning process can be resulted from the teachers' strategy, class atmosphere, and the students' characteristics. The characteristics included the cognitive and the behavior. For vocational school students, English should be learned as a skill that may get them ease in handling their occupation after they went to school. The co-teaching process has been done in SMK Muhammadiyah 1 Semarang, a vocational private school in a rural area which is consisting of thirty (30) students in each class. The English class is scheduled at 1pm after the first break at 12. The component of the class is dominated by male students, 18 male and the rest is female. Based on the purpose of English learning, the students are expected to be able to create utterances as a means of communication to support their work field. Meanwhile, in the curricula, English for vocational school has been reduced into three credits and assigned the teacher to make the students become skillful in using the language. Further, in some private schools which are based on religious foundation or other foundation, some policies in the curricula manifested various activities in the form of internal and external classroom activities. Though, lesson study requires a high level of understanding, commitment and appreciation from principals and district administrators, heads of departments, and teachers of all ranges of experience. It delivers a message that in lesson study, not all teachers would be able to contribute in a process of improving quality because of many factors. Talking about commitment, not all teachers have the same dedication, commitment, in the teachers' community. It might be culture that brings different atmosphere in

particular fields, so is teaching. The differences in responsibilities of teachers, the nature of collegiality, and the pedagogic strategies of mathematics teachers are themes that emerged from the research and these are discussed in order to illustrate the engagement and challenges of lesson study in Indonesia (Kusanagi, 2013).

In addition, for schools in which the students' raw input categorized as low achiever, the teacher and students' relationship usually becomes closer because they used interpersonal approach in delivering the material. Students' participation becomes main indicator for the smooth process of learning, because the assessment results have shown the average competence of those students. Classroom processes and teacher–child interactions hold promise for reducing these disparities (Pianta & Walsh, 1996 in Sandilos et.al).

METHOD

Through the interview, observation, and the process of interaction between the teacher and the students, it can be described that the students rely on their teacher during the process. Whenever difficulties are met, only some of the students who are actively asking or finding the answer the questions or responding to the teacher's instruction. Most of them are busy with their own topic, talking about another subject, having chat with their friends who seem also not interested in English subject. In addition, whenever they got assignment from the teacher and then they are not really known what should be done, they would not deliver it to the teacher, and they prefer to be quiet and still. However, the teacher who has familiar with this kind of atmosphere, have tried to call them and stimulated them with jokes, questions, instruction, etc. Teacher's decision to call particular name was also part of teacher's strategy in maintaining the relationship during the classroom activities. Further, the teachers delivered that the most observed phenomena is the students' lack of vocabulary comprehension which is significantly as a result of low motivation. Another description was the students seem have no worries in having problems during the learning process. The low motivation will not lead to enthusiastic responses in many fields, not only in education, but also in workplace or other places.

RESULT

During the teaching and co teaching process, we have discussed about the lesson plan, the lesson design, and also the characteristic of the students. Both of us are trying to conceptualize the scenario based on our capacity in early meetings. After the first meetings, both of us have a little bit different opinion about what should be done, and what have been done. As teacher who has been teaching those students for two years, he considers that the most critical aspect from students' knowledge in English is vocabulary comprehension. The target demanded in the syllabus however; make the teacher being burdened if the material is not accomplished. For some reasons, the focus of the teacher is in the part of delivering the material, but not in the aspect of comprehension in appropriate way. As long as the students have already done the instruction, it seems that the students have already understood the teacher's explanation. On the other hand, English is learned as a means of communication that must be confirmed its usage in the field of many areas. Those who learn English may not only remember the vocabularies, even though grammar, vocabulary, and pronunciation are basic components in language. In national examination (UN) the teacher is also demanded to help the students to pass the examination, which deliver message for the teachers that they have to make the students comprehend the

material appropriately. In addition what is experienced by the teacher in SMK MUH 1 might have be different with the other schools, and the characteristics of the students have made the teacher designed his class like what he had in recent years. Based on the interview, those students delivered that they do not know the meaning of words in the book they have, and they thought that they cannot understand why they have to learn English. In some other way, it makes the students are not very keen to participate in the class, they likely to be afraid to the teacher. However, the students' responses in the classroom need to be forced in a condition to make them move and think, not only rely on their classmates who are more enthusiastic and competence. The angle of the student and teacher, anyhow, will likely have different perception because of the different purpose. The less participated students might be caused by some reasons; from thirty students, only six of them who are really engaged with the teacher, and they are aware about the topic that is being discussed. Further, six of them are those who are really seems uninterested to the lesson, and they have their own way to make themselves being comfort; chatting with their friends, pretending to read books, drawing on his book, and writing something that is unrelated with the topic being discussed. Those who do not belong to those both groups are students who have so-so interest and comprehension in the class. Those are easily influenced by which group that will lead them to go. The teacher usually has mapping the seat based on these characteristic to minimize the crowd in the class. One thing that might be different with what happened in Japan where lesson study originated, that the system of education and the policy of teacher's rule is different with what happened in Indonesia, especially for private school that has their own policies. Some students in private school go to school because their parents sent them, or because they have no other choice to go to a particular school and it may become one of the arguments that they are not very enthusiastic in the class. The strategy that is used by the co -teacher is by rearrange the seat, that the students seating in a circle so that they are directly facing the teacher to make the teacher realizing the students' participation, and there is no table in front of them, to prevent them putting their head on the table. The feeling of discomfort is obviously reflected from their faces, because they cannot hide from their friends' back. During the learning process, the teacher directly asking questions to each of them, and waiting for the answer. The teacher will not be moved if the students do not answer the questions, and it make the students prepare the answer, at least the students are paying attention to the teacher, not chatting with their friends because the teacher giving the question randomly in a circle. It can be said that this strategy takes much time and energy rather than cooperative learning, because the teacher should convince them to response the teacher's instruction. On the previous meeting, a cooperative learning strategy has been applied, and those students who are not very eager to participate, rely on their friends to accomplish the instruction given. It can be interpreted that the power of friendship is stronger than the teacher's strategy in executing the scenario. The thought of responsibility is also low for those students who are not very responsive, and it may not give advantage for the comprehension. Whenever the students are challenged to have personal duties, they will have more concern about the importance of being involved in the class. The awareness of classroom atmosphere is definitely importance, since this thought becomes an indicator that learning is importance, and above the reasons, it becomes the most determining from students' success in learning. Surprisingly, this responsibility is addressed to teacher. Teacher is demanded to create and control classroom behavior to minimize distraction and increase the students' engagement in learning (Ross &Ware in Sandilos et.al). the teacher's approaches in learning might be based on the teaching experiences that having various characteristic of the students, that is why experience in teaching is also become benefit for those

teachers in designing the classroom management. In contrast, the reality in social life and in educational aspect is not merely coherent. People learn faster from the society rather than from educational field and it make the teacher need to adapt the learning atmosphere from the social life. One of the examples is that English is learned as knowledge, not a skill that can be used in communication. Those students are not able to correlate the knowledge as life skill support, but as an exercise from the book, and get the satisfying score from the teacher to be reported to parents. The teacher's openness and wisdom in realizing that learning succeeds is determined by many factors, and one of those is the teacher itself. Many things that need to be done whenever a teacher cope with the learning factors to be succeed. He needs to adapt himself from the students' angle, the policy, the internal factors, and many other factors. Based on the co-teaching process, the most demanding but little bit difficult is how to change the perspective and not stuck in the old paradigm and stigma. The challenge to redesign and reconstruct the teaching style is not as simple as it thought. Further, the students' response to new- or different strategy and teaching style is also need more time, because those both sides are human; a social creature that his behavior sometimes influenced by people in their surroundings. Learning, from others perspective is more concerned on how someone is changing; thinking, behavior, perspectives, etc. And it may cause teaching- and learning is considered as a complex thing.

English often being misjudged as difficult subject, whether the difficulty is because of the content or because the internal motivation is still been debated by many people. However, to provide that, teachers experienced several challenges; multilevel instruction, groups, various assessments, and relationship building (Ankrum&Bean,2008; Schum, Moody,&Vaughn,2000;Schumm&Vaughn,1995). Somehow, it makes teacher have to become a super man with various demand and expectations. Some best practices that experienced by the teacher in several regions in Indonesia, showed that the policy makers, are very intensively involved. Those who have authorities will lead and drive the teachers to conveniently do the lesson study. In this disruptive era, collaboration is a new paradigm that need to be familiarized to all teachers, educators, and those parties who are concerned in education fields. The thought to conquer his or her ego may be the biggest challenge for people who still need appreciation from others. The term succeed is always interpreted by one's competence, not as a result of teamwork. The thought to force the students to do collaboration in accomplishing the problems and the sensitivity to others' difficulty still need to be empowered to make the atmosphere of learning is experienced. The science of survival by knowledge that is being learned is rarely understood because the indicator of succeed is the score which can be resulted from an exercise or doing assignment, but not the higher values of learning.

CONCLUSION

The most significant lesson from the lesson study from the co-teaching experience is that a teacher however is not a god who has perfect performance. It is not wise if the indicator of a teacher's succeed in teaching is good score of the students, nice behavior of the students, and also there is no final result of teaching. As long as teaching process is happening, the duty is not accomplished yet. An outsider who comes for about three or four months might not give the best perspectives, but as supporting insight of teacher in improving the positive atmosphere of his classes. If teaching is interpreted as a long life skill, the parameter of teacher's succeed is determined by many factors; from internal and external factors. The thought of improving teacher's quality will be coherent with the improvement of students' quality, and quality is not

indicated by cognitive competence only, but also the affective and psychometric as well. Those who are concern in educational field should pay attention also in the soft skill aspects; behavior, attitude, ethics, and emotional intelligence, spiritual intelligence which can lead to cognitive competence.

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IMPLEMENTATION OF LESSON STUDY IN INTERNSHIP PROGRAM FOR PROSPECTIVE TEACHER

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Abstract. An internship program is one of the programs implemented by universities that have educational study programs. This internship program is carried out in a short time and does not provide a lot of time for prospective teachers to get experiences as a teacher. For this reason, it is necessary to have an effective internship scheme to find optimal results. One effort that can be done is to implement the lesson study in the internship program. Implementation of lesson study in internship programs needs to be designed so that prospective teachers can carry out the result maximally. This article contains ideas for implementing Lesson Study that can be applied in an internship program. The implementation of lesson study in the internship program contains the stage of orientation, observation, action, and reporting. The orientation stage includes the activity of briefing the implementation of the internship program, the technical implementation of lesson study practices, reporting, and its assessment. The observation stage contains observation activities that are directly carried out by prospective teachers in partner schools. The action stage contains the main activities of lesson study practices, which are plan, do, and see. The reporting stage is the activity for reporting of the implementation of lesson study that has been applied by prospective teachers in the form of implementation reports and articles/paper for publications.

Keywords— Lesson Study, Internship Program, Prospective Teacher

INTRODUCTION

The education is not separated from the teacher. Teachers are born from universities that produces prospective teachers. According to Basit & Khurshid [1], Teacher education corresponds to the development of the skills and competencies of prospective teachers in order to empower them to meet the requirements of the teaching profession and to face challenges in it. Prospective teachers are equipped with several knowledge related to education and learning. The knowledge includes Pedagogical Knowledge (PK), Content Knowledge (CK), and Pedagogical Content Knowledge (PCK). This is similar to the statement of Lewis [9] which states that preparing prospective teachers is so complex. Prospective teachers need knowledge related to their fields with the support of philosophical and pedagogical foundations that prepare them to teach students with their limitations, teach students with a variety of learning and behavioral problems, and teach students with various cultural backgrounds. Therefore, prospective teachers need to be involved with programs that provide opportunities for them to learn by implementing theory in the form of practice. One program that covers theory and practice is an internship program.

The internship program provides opportunities for prospective teachers to actualize themselves in school. They have the opportunity to to be part of a school who are directly involved in carrying out teacher works at school. According to Doig & Graves [5], teacher development towards professionals is driven by the need to expand and update teacher practices, skills, and beliefs. The stimuli needed can be curriculum changes, new classroom technology,

progress in pedagogy, or its combination. The main goal is to improve outcomes for students, whether they will be focused on understanding, skills, attitudes, or involvement. In fact, the internship program is a small part of all educational activities received by prospective teachers even though it is a mandatory program. For this reason, the efforts need to be made so that the implementation of the internship program remains optimal despite time constraints.

One effort that can overcome the problem of time is to implement Lesson Study in an internship program. Lesson study is one program to enhance collaborative learning. Lesson study is a quality teacher development program through collaborative work between teachers and stakeholders. In lesson study, teachers communicate and work together with each other to solve problems in class. Communication and cooperation between teachers can effectively help solve learning problems [11]. Meanwhile, Lesson study is an emerging trend in North American teacher development and, although some researchers have examined the impact of lesson study on teacher practice in the field, several studies have considered the implications of lesson study to support the development of prospective teacher in teacher education programs [4]. In Indonesia, teacher development programs through Lesson Study in IMSTEP-JICA projects (Indonesia Mathematics and Science Teacher Education Project - Japan International Cooperation Agency) [10] and TEQIP (Teachers Quality Improvement Program) [7] .

Lesson study has advantages when applied in an internship program. The benefits obtained when implementing lesson study are able to develop new insights for prospective teachers related to the needs of students, be aware of various learning strategies, and the importance of working collaboratively [4]. By doing lesson study, prospective teachers learn to carry out a repetitive cycle of collaborative learning planning activities, teach in real classes, observe and evaluate learning, and reflection. Interaction in collaborative discussions provides opportunities for prospective teachers to learn to analyze and solve learning problems in order to improve the quality of learning [8]. Cerbin & Kopp [3] mention that Lesson study is an in-depth study involving teachers and prospective teachers: (a) systematically investigating student teaching and learning, (b) collecting and analyzing student learning evidence, (c) linking findings with theories that relevant, and (d) prioritizing their work in a form that can be reviewed and built by others. Indirectly, the internship program by implementing Lesson study can build Pedagogical Knowledge for prospective teachers.

There are three main focuses in professional development and teacher learning through Lesson Study according to Bjuland & Mosvold [2], namely student learning, observation, and looking at learning.

1. Focus on student learning. Through Lesson Study activities, teachers collaboratively design learning that makes students active, observes students when learning takes place, and reflects and redesigns learning based on student activities in previous learning. The whole focus is on student learning.
2. Focus on Observation. Observation is a crucial part of Lesson Study. Because learning is designed to make students learn, all attention is directed to how students learn.
3. Focus on the research lesson. Research lesson is a unit of analysis in lesson study. Observing the intended learning is a deep concern related to the problems that occur during the course of learning.

Through this article, the author conveys the concept of implementing Lesson Study in the practice of internship programs for prospective teachers to become part of the process of developing their abilities.

METHOD

The main activities of the internship program consist of four stages. These stages are the orientation stage, the observation stage, the action stage, and the reporting stage. Overall, the internship program implemented by implementing Lesson Study is eight weeks. A summary of the series of internships is presented in table 1.

TABLE VI. IMPLEMENTATION PLAN OF INTERNSHIP PROGRAM BASED ON LESSON STUDY.

Stages	**1st Week**	**2nd Week**	**3rd Week**	**4th Week**	**5th Week**	**6th Week**	**7th Week**	**8th Week**
Orientation	■							
Observation		■	■					
Action				■	■	■	■	
Reporting								■

D. *Orientation Stage*

The orientation stage is carried out so that prospective teachers get clarity in the implementation of the internship program. Prospective teachers are given guidance regarding the implementation of the Internship. The first thing to do is the initial data collection and check the participants. The activity continued with the provision of material related to lesson study, technical implementation of lesson study, and assessment of the implementation of the internship. Orientation can be done within one working day, so that the internship committee can carry out an orientation with a shift system if the interns are in large numbers.

The lesson study material provided covers the history of lesson study, the psychological and theoretical foundation that underlies the need for lesson study practice, the general scheme for implementing lesson study, examples of learning carried out involving lesson study practices. The technical explanation of the implementation of lesson study contained material about the assignments of prospective teacher, tutor lecturer's assignments, and tutor teacher’s assignments at the time before, during, and after the internship. Furthermore, the presentation of material about the technical implementation of the plan, do, and re-plan that needs to be done by prospective teacher. Assessment material includes the instruments of assessment in internship programs, reporting frameworks, and articles for scientific publication.

E. *Observation Stage*

Observations are carried out by prospective teacher directly to the intended school as an internship place. Observations carried out include observing the school environment, curriculum, and learning environment. Observation activities can be carried out in two weeks. The school environment is emphasized so that prospective teachers know the school management structure, school facilities and infrastructure, staff discipline and duties, and recognize school teachers and employees. The curriculum study emphasizes understanding related to the material details in accordance with the subjects to be taught by students, the planning of learning starts from effective week plans to learning plans and assessments, and the forms of reports carried out by the teacher.

The learning environment focuses on classroom observations. The class observed is the class used by the prospective teacher concerned in the practice of learning in the class (Open Class). Classes observed include the condition of students, the character of students and the

facilities in the class. The condition and character of focus students is carefully observed as a material consideration to determine the appropriate learning model applied in the classroom.

F. *Action Stage*

The action stage is the main of the internship. The principles of lesson study coincide with the idea that learning is a social and situated process; and for teachers, their own classroom is the best venue for them to learn and improve their teaching practices [6]. Prospective teacher can learn about learning. Learning activities take the form of direct prospective teacher practice in act the learning. Peers and tutor teacher observe the direct lesson and providing criticism, comments, and suggestions. In this case, all action activities are carried out in the form of plan, do and see-replan. Tutor teacher and prospective teacher act all of it phase collaboratively.

Phase plan is done by designing learning together. The plan is carried out by all prospective teacher in their groups and tutors. The plan includes a discussion of the problems that arise in the classroom, designing the appropriate learning model, arranging the implementation of learning plans and their assessment, and designing the technical observations. This collaborative plan is supported by the statement of Cerbin & Kop [3] that collaborative engagement encourages mutual understanding of goals, teaching practices, and student learning.

Phase Do is the implementation of learning carried out by the model teacher and followed by observers. Model teachers, in this case are prospective teachers who find teaching assignments in the relevant class, practice learning in accordance with the chosen and designed model. Observer observes students and looks at student activities during learning. This is in accordance with the opinion of Cerbin & Kop [3] that direct observation is done to observe students learning and thinking in class. Tutor teacher and prospective teacher group acted as observers.

Phase See as well as the replan phase is carried out by the tutor teacher and all the prospective teachers. The first thing to do is the presentation of teacher model expressions during learning. Followed by comments from the tutor teacher and prospective teachers. Next, the discussion is conveying the findings in the learning delivered by the observer and responded by the model teacher. Based on these findings, immediately determined the appropriate learning model that can be done for subsequent learning.

Plan, Do, See-replan are continuous activities. Plan, Do, See-replan is carried out for four weeks. So, the open class is carried out 4 to 8 times in the internship period. Thus, prospective teachers find the experience of designing, implementing, and evaluating the implementation of collaborative learning with peers and professional teachers.

G. *Reporting Stage*

Reporting is an important part of every activity. Reporting as a record that the activity has been completed. Reporting on internship activities in the form of activity reports and articles. Articles in this case can be used as material for scientific publications.

The activity report includes introduction, content, and closing. The introductory section contains the background of the internship program, the purpose of the benefits, and a description of the school environment as well as the students in the class regarding the open class lesson study. The contents section is in the form of a record of plan, do and see-replan activities that have been carried out by prospective teachers. The concluding section contains the conclusions and the suggestion. The conclusion includes a summary of the internship program activities that have been carried out. Suggestions contain input or expectations that can be done by the implementer of the next internship program. Reports are prepared individually by each prospective teachers.

The article describes all lesson study activities implemented in the internship program. The article section includes the introduction, main section, and closing. Introduction contains

background and study related to lesson study. The predecessor also contains field findings when making initial observations. The main section contains a description of the experience of tutors and teachers during the implementation of a series of plan, do and see activities. Closing contains conclusions and suggestions. Articles are arranged individually by each prospective teacher.

RESULT

Assessment is carried out as a form of monitoring the implementation of the internship program. Monitoring is carried out both in the daily life of prospective teachers in the school and reports that must be completed related to the internship program. Monitoring and assessment is carried out by tutor lecturer and tutor teachers. The tutor teacher assesses the implementation of the internship through the assessment form when the prospective teacher carries out classroom learning, assesses their attitudes in school, and assesses the final report prepared by prospective teachers. Tutor lecturer assess prospective teacher through the teacher appraisal form in carrying out classroom learning (when open class), internship reports, and scientific articles compiled by prospective teachers.

CONCLUSION

Teacher candidates are provided with knowledge related to Content Knowledge, Pedagogical Knowledge, and Pedagogical Content Knowledge. In addition to theory, they need to find opportunities to apply the CK, PK and PCK in the real class. One of the activities that can be carried out is an internship program. The internship program needs to be packaged in order to provide effective results. Lesson study can be applied in an internship program so that prospective teachers can learn through collaborative learning. Through Lesson Study, Prospective teachers are actively involved directly in designing learning, observing the implementation of learning, and simultaneously reflecting collaborative learning. Working collaboratively with their professional teacher will get a lot of input and stories of experience from the teacher, while with peers they will be able to share more openly. The implementation of the lesson study based internship program consists of four main stages, namely orientation, observation, action, and reporting. The orientation stage includes directing activities for the implementation of the internship program, technical implementation of Lesson Study practices, reporting, and assessment. The observation stage contains field observation activities that are directly carried out by prospective teachers to partner schools. The action stage contains the main activities of the lesson study practice, namely plan, do, and see. The reporting stage is the activity of reporting the implementation of lesson study that has been applied to prospective teachers in the form of implementation reports and articles for scientific publications. Assessment is carried out by the teacher and apprentice supervisor so that the internship can be monitored and implemented properly.

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CRITICAL THINKING SKILLS OF STUDENTS IN PRACTICUM ANIMAL PSYCHOLOGY THROUGHPREDICT, OBSERVE AND EXPLAIN (POE) MODEL BASED LEARNING LESSON STUDY

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Abstract. This study aims to foster students' critical thinking skills in animal physiology practicum course through the model-based Predict, Observe and Explain (POE)Lesson Study. This research uses descriptive research method, the material process of amphibia heart and blood vessel. Research carried out by stages based learning Lesson Study consisting of a plan, do and see. The research location FKIP UNPAK the execution time between the months of May to July 2018. The subjects were students of Biology Education Studies Program S1 class IV A and IV B who took the Animal Physiology course. Collecting data with engineering documentation, observation lecturer activities, observation of critical thinking skills, interviews with students, and the questioner. Data observed and critical thinking skills were analyzed descriptively to know their students' critical thinking skills. The results showed that the subjects animal physiology lab activities can foster critical thinking skills through the model-based Predict, Observe and Explain (POE)Lesson Study. Their ability to think critically look of the acquisition value of each cycle students. The average value of students' critical thinking skills was seen in the indicator analysis of argument 88.7 included into the category very well. The average value of students' critical thinking skills lows seen in indicators arrange a deduction concideration 75 included in either category. The results of interviews with the students to the evidence that through practical activities through the model-based Predict, Observe and Explain (POE)Lesson Study can foster critical thinking skills so that students in the learning process of students more active, creative and fun.

Keywords: model of Predict, Observe and Explain (POE), practical activities, critical thinking skills, and Lesson Study

INTRODUCTION

Scientific subjects in science require students to have better skills and knowledge. The role of the lecturer in the future will be more as a motivator and facilitator that will encourage students to find their own concepts or facts to learn, so that a scientific attitude will develop in students. To develop reasoning skills, students' scientific skills and attitudes required learning which can emphasize application aspects, analysis, synthesis and evaluation, not only relying on aspects of understanding and knowledge. For that we need a learning that can encourage students to be motivated to be more creative, confident and critical thinking.

Critical thinking is the ability to argue in an organized way. Critical thinking is the ability to analyze ideas or ideas in a more specific direction, and evaluate information where critical thinkers gather questions and problems, formulate clearly, conclude and predict relevant information, find ideas, think openly, and communicate effectively (Sahfriana , 2015).

Basically students have the ability to think critically in learning, critical thinking skills, namely the power of thinking that must be built in students so that it becomes a character or

personality that is imprinted in the lives of students to solve all the problems of his life by identifying every information he receives then being able to evaluate and then summarizing it systematically and then being able to express opinions in an organized manner. But this ability is sometimes not well developed because it is not supported by the right learning model. Therefore, it is necessary to have Predict, Observe and Explain (POE) learning models that are able to develop students' critical thinking skills in animal physiology courses, through practical activities.

Practicum activities can help students to observe, analyze observations, assess / reason and then conclude and be able to effectively communicate. Practicum is a structured learning activity and provides opportunities for students to get real experience in order to improve understanding of the theory or so that students master certain skills related to knowledge (Rustaman 2005). In line with the understanding of IPA as an "experimental science", practicum activities are basically inseparable from natural science learning activities, and biology is part of the Natural Sciences. For this practical work is one of the most important activities in the study of Biology, because Biology is a scientific field that aims to increase awareness of environmental sustainability for the welfare of the community, improve the competence of attitudes and skills, as well as an understanding of biological concepts provided (Ministry of National Education, 2003) In addition, biology is also a science based on experiments, meaning that it is impossible to study biology without practicum. According to Winatasasmita in Pradwinta (2005: 16) practicum can help in developing:

a. Cognitive competence, including training a theory can be understood, developing thinking skills, integrating different aspects of the theory and can apply the theory in real terms.
b. Affective competence, including independent learning, and learning to respect each other.
c. Psychomotor competence, including learning to stimulate and use equipment.

Based on the results of discussions with a team of lecturers who fostered the Animal Physiology practicum, problems were found in the practicum activities that had occurred. In general, students often experience difficulties in solving problems that exist during practicum activities, both individually and in groups. Often practicum activities that occur are more focused on the existing guidebooks, students demonstrate the stages of activities that are standard and limited, so that students cannot explore further understanding, creativity and the ability to think their criteria during practicum activities. In addition, the involvement of students in practicum activities is often uneven, the learning process tends to be passive and only a few students in groups that seem dominant and master the practicum.

These problems, of course, can result in students' critical thinking skills in practicum activities that tend not to be honed, and their creativity is not explored. In addition skills in carrying out practicum activities also do not develop evenly. This makes a problem that must be addressed immediately, given that they are prospective teachers who must have this ability as stock in carrying out professional tasks in the future. Therefore, in the implementation of the practicum students can formulate interesting problems, then from these problems each group feels anxious to know how to prove problems with the critical thinking skills of each student. The most appropriate learning model is the Predict, Observe and Explain (POE) learning model based on Lesson Study.

The implementation of the practicum by applying the Predict, Observe and Explain (POE) learning model based on Lesson Study is expected to overcome the various problems above, because through the learning model determined by the Lecturer Team practicum animal physiology courses in accordance with the situation, conditions, and can train students solve a

problems faced as prospective educators. It can also be said as an instrument that is used with the full ability by lecturers to improve the quality of teaching.

Predict, Observe, Explain (POE) models are used to improve students 'understanding of a concept and practice skills, explore students' initial ideas, provide opportunities for students to observe and try directly an object or phenomenon, generate discussion between students, foster curiosity and motivate students to investigate a problem. This POE model can improve student communication in providing explanations related to the relationship of an observed event with the theory (Ira et al, 2015). The POE learning model includes ways that a teacher can take to help students improve their understanding of the concept. Learning with the POE learning model students are given the freedom to explore or develop all ideas and their ability to find their own knowledge, where meaningful learning only occurs through discovery learning (discovery learning) which is a process in which students can explore, new discoveries that are not yet known or understanding which is similar to what is already known. The learning process with the POE model can be used by the teacher to be able to provide a deep understanding of learning design activities, where learning starts from the point of view of students rather than teachers or science experts. The learning process uses the POE model, students can construct new knowledge based on real observation (Djumadi and Erfan, 2014).

POE learning model consists of three main scientific methods according to Haryono in Hardiyanti et al (2014), namely: (1) Predict, make predictions or make a temporary guess on a learning topic. In making allegations, the participants were asked to think about the reasons why he made such an assumption. (2) Observe, conduct research, participants conduct experiments related to the problems that are given and observe what happens. (3) Explain, giving an explanation, namely an explanation of the suitability between the predictions (predictions) made by students and produced during observations.

Based on the theories that have been described it can be concluded that Predict, Observe and Explain (POE) is a learning model to improve understanding of a concept and train students' skills to observe and try directly an object or phenomenon and motivate students to investigate a problem.

Mulyana (2007) provides a formula for Lesson Study as a model for educating professional development through collaborative and sustainable learning assessment based on the principles of collegiality and mutual learning to build a learning community. In addition to the Lesson Study activities students are usually motivated to provide the best performance during the learning process so that they get positive notes from observers during the do-it process.

Practicum activities by applying the Predict, Observe and Explain (POE) learning model based onesson study by involving students to actively design experimental procedures themselves are expected to develop their creativity and critical thinking skills. In addition, psychomotor enthusiasm and skills in carrying out practicum activities are also expected to increase. Learning through practical activities allows students to develop a scientific attitude to develop fundamental skills, so that in the learning process students can understand the concepts they learn and find facts. Thus learning outcomes that include knowledge, skills, and attitudes as demands for competence in the curriculum developed at this time will be achieved.

In general, this study aims to foster students' critical thinking skills in practicum activities in Animal Physiology courses through Predict, Observe and Explain (POE) learning models based on Lesson Study Program in Biology Education Studies, Teaching and Education Sciences Faculty, Pakuan University.

The results of the study are expected to provide benefits for:

a. Researchers, add insight and experience carrying out practicums with Predict, Observe and Explain (POE) learning models based on Lesson Study. The results obtained can be used as materials to design further practicum activities on other topics or in other subjects.
b. Lecturers, provide alternative solutions to problems in other learning, increase motivation to always want to learn, increase knowledge about material substance, build networks or learning communities with the principle of collegiality as a forum for discussion.
c. Educational institutions, helping to achieve the vision and mission set through efforts to improve the quality of personnel and improve the quality of graduates.
d. The world of education, as information in efforts to improve the quality of education.

METHOD

The research was conducted in the odd semester of 2017-2018 academic year in June to July 2018. The research was conducted in the Laboratory for the Do phase, while the Plan and See stages were conducted in the Biology Education Study Room, Teaching and Education Faculty, Pakuan University Bogor. The research sample was the IVA and IVB semester students of the Biology Education Study Program, the Teaching and Education Faculty, Pakuan University which took the subject of Animal Physiology.

This research was carried out on practicum activities with material of Frog Heart and Blood Vessels. This research uses descriptive research method, which is a research method that is intended to gather information about an existing phenomenon, namely the state of the symptoms according to what they were at the time the research was conducted (Arikunto, 2002: 309). The research was carried out collaboratively and collectively among fellow lecturers in the team and the involvement of other lecturers who acted as observers or observers was intended to cultivate the spirit of collaboration and cooperate with open principles of mutual giving and receiving to improve the quality of the learning process.

Data collection was carried out by documentation, observation, interview and questionnaire techniques, using instruments in the form of observation sheets, interview guidelines and questionnaires. Each class is carried out with Lesson Study stages, namely Plan, Do and See. To find out the students' thinking skills, students use sheet instruments and assessment rubrics. The data obtained is then processed and categorized for each indicator of critical thinking ability. Determination of categories using normative categories according to Arikunto (2008: 245), as in table 1.

Table 1 Normative Category

Value Range	Category
80 – 100	Very Good
66 – 79	Good
56 – 65	Enough
40 – 45	Less
30 – 39	Failed

RESULTS

The activity carried out for this research is practicum using lesson studdy based learning Discovery model with descriptive method, therefore here will be explained one by one the

findings and discussion of each stage of Lesson Study in each cycle. The following is an explanation for the results and discussion:

A. Implementation of Lesson Study Stages

Lesson Study is an effort to improve the learning process and results that are carried out based on cyclic stages, which consist of: (1) planning (plan); (2) implementation (do); (3) reflection (see).

1. Plan

The *plan* stage is carried out for each cycle before the learning process is carried out. The following is the date of implementation of Lesson Study based on the results of the *Plan* activities that have been carried out:

Table 2 Schedule of Lesson Study Implementation

Cycle	Date	Place	Model Lecturer
1	Tuesday, 5 June 2018 / 08.00-10.00	Laboratory 1	Dra. Triasianingrum, SU
2	Tuesday, 12 June 2018 / 08.00-10.00	Laboratory 1	M. Taufik Awaludin, M.Pd

At this stage identification of problems in the class will be used for Lesson Study activities and alternative planning of solutions, for example the selection of subject matter, selection of models, methods and media that are appropriate to student characteristics, types of evaluation to be implemented, and so on. The important things to discuss are the observation sheets, especially the determination of aspects that need to be considered in a learning process and the indicators are seen both from the behavior of lecturers and students. Furthermore, the results of the identification of the problem and the learning tools are discussed for improvement.

At the implementation of the plan stages starting from cycle 1 to 4, it has increased. The following is a graph of improvement in plan activities based on observations from observers:

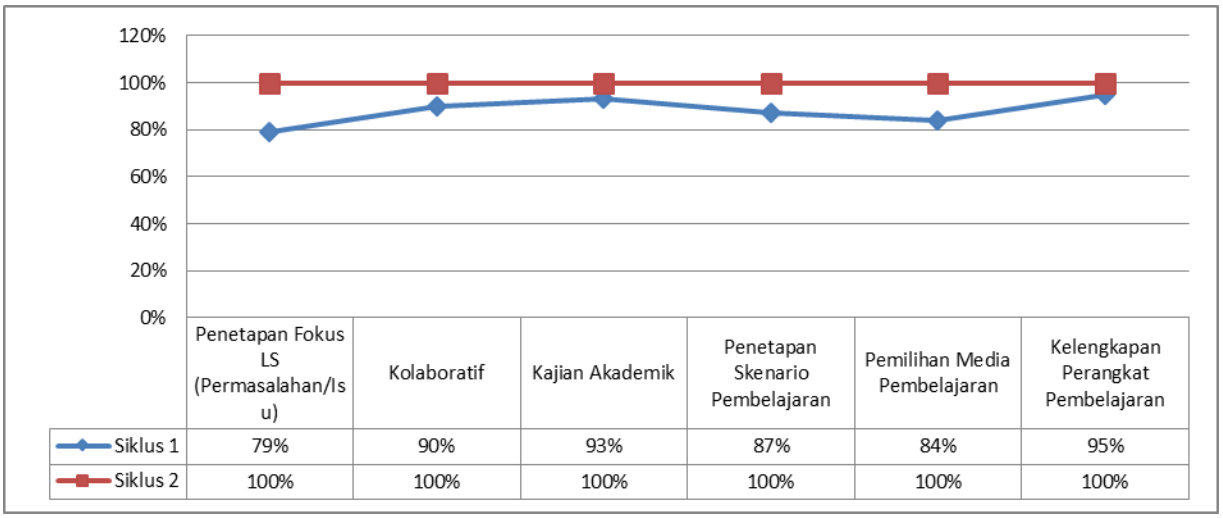


Figure 1 Data Recapitulation of Plan Activities

2. Do

After the *plan* stage, the next step is to *do*, which is the implementation of learning activities. In this activity *do* the lecturer model conducts a learning process based on the plan

discussed together by considering various recommendations from the previous cycle reflection process. During the learning activity, observers conducted monitoring using observation sheets. The stages of learning activities carried out in each cycle are as follows:

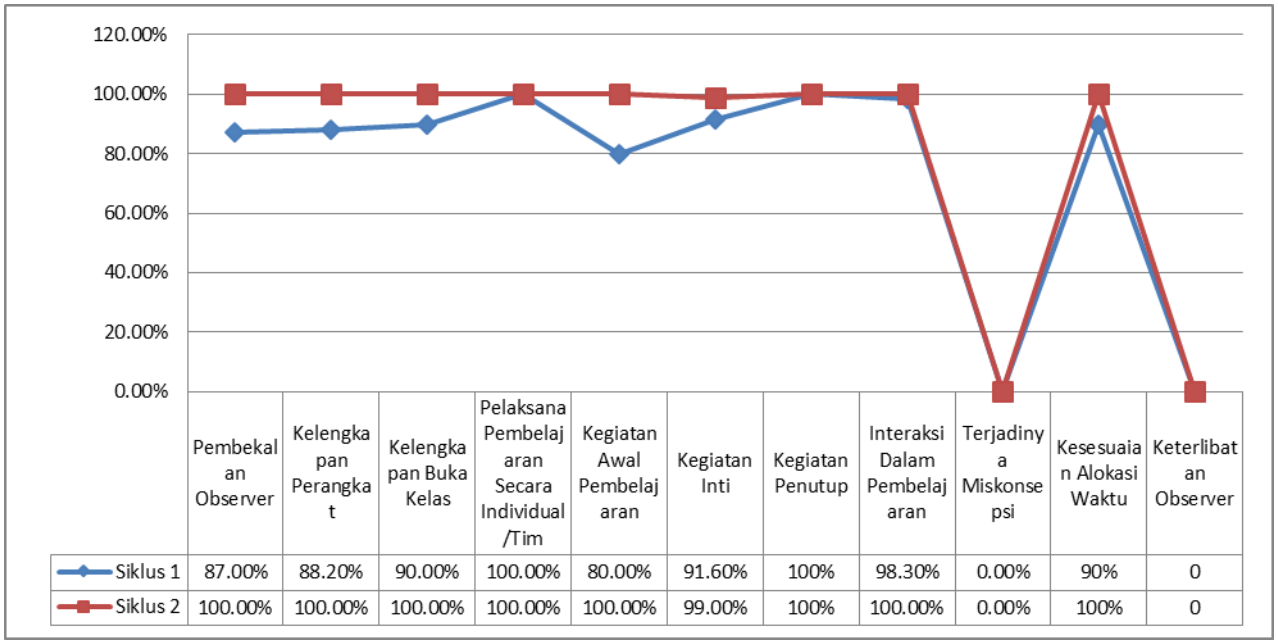
Table 3 Implementation of Do Activities

Cycle	Time and place	Learning Activities
1	Tuesday, June 5 2018 / 08.00-10.00 in laboratory 1	1. Students apply frog species to the surgical board with the supine position, then observe their heart rate activity 2. Students predict the parts of the heart 3. Students analyze the advantages and disadvantages of the circulatory system of frogs associated with the anatomical structure of the heart it 4. Students explain how the frog's heart works so it can beat 5. Each group mentions and prepares the tools and materials that you will use in conducting the Frog Heart practicum 6. Each group conducts practicum activities based on the way the work has been done 7. Each group writes the results of practicum activities that have been carried out in the form of drawings / tables / graphs or other offerings 8. Group representatives presented the results of practical work in front of the class and responded by other groups 9. Students conclude the results of practical learning today.
2	2 Tuesday, June 5 2018 / 10.00-12.00 in laboratory 1	1. Students predict various factors that cause blood flow in the blood vessels 2. Students predict the possibility of having components other than blood contained in blood vessels 3. Each group mentions and prepares the tools and materials to be used in blood vessel practicum activities 4. Each group conducts practicum activities based on the way the work has been done 5. Each group writes the results of practicum activities that have been carried out in the form of drawings / tables / graphs or other offerings 6. Group representatives present the results of practicum activities in front of the class and respond to other groups 7. Students conclude the results of practicum learning today.

At the stage of *do* the learning activities carried out by the model lecturers monitored by observers. Based on the results of observations through observation sheets, the activity process *do* has increased every cycle. The following is an increase in *do* activities for each cycle:

3. See

After the activity is *do* the next step is the stage *see*. At this stage a reflection of the learning process has been carried out. The recommendations of the observers are summarized in the table below:



	Pembekalan Observer	Kelengkapan Perangkat	Kelengkapan Buka Kelas	Pelaksana Pembelajaran Secara Individual /Tim	Kegiatan Awal Pembelajaran	Kegiatan Inti	Kegiatan Penutup	Interaksi Dalam Pembelajaran	Terjadinya Miskonsepsi	Kesesuaian Alokasi Waktu	Keterlibatan Observer
Siklus 1	87.00%	88.20%	90.00%	100.00%	80.00%	91.60%	100%	98.30%	0.00%	90%	0
Siklus 2	100.00%	100.00%	100.00%	100.00%	100.00%	99.00%	100%	100.00%	0.00%	100%	0

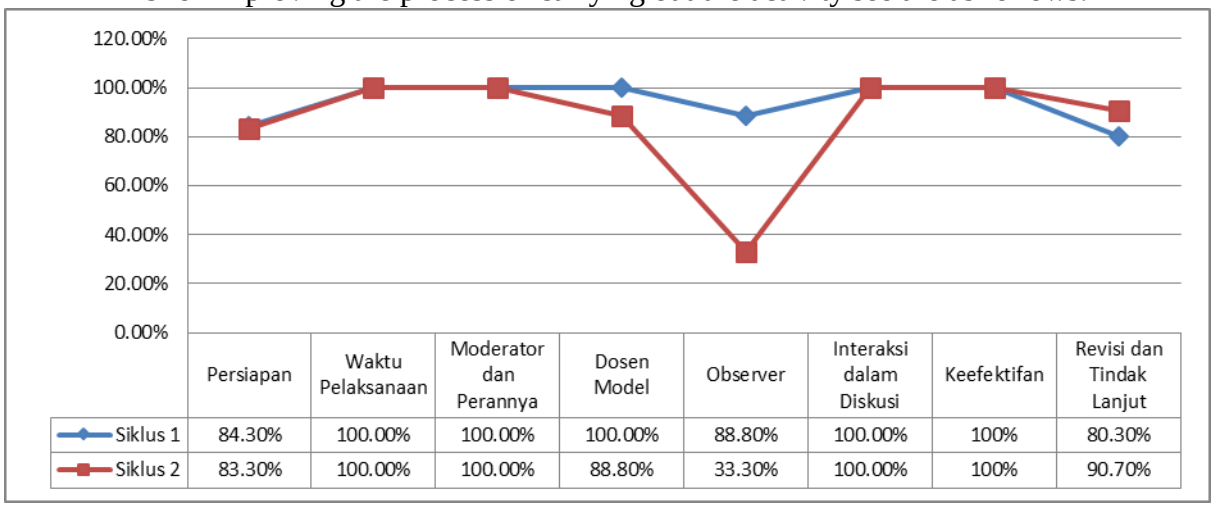
Figure 2 Recapitulation of Do Activity Data

Table 4 Observer recommendations on See Activities

Cycle	Time and Place	Recommendation
1	Tuesday, June 5 2018 / 13.00-14.00 in the Biology Education Study Room	• The motivation process is important to be done at the beginning of learning by displaying videos / pictures • Learning objectives are less relevant to the learning activities carried out • Submission of all materials should not be done entirely at the beginning of the learning process • Number of groups evenly and heterogeneously • The nameplate for each group is needed to facilitate group observation activities • Reporting lab results individually makes each student less interact with each other • Convey other variables that influence the results of the practicum • The position of the student's seat when presenting is less effective because students only stand in the group, making it difficult for other groups to pay attention
2	Tuesday, 12 June 2018 / 13.00-14.00 in the Biology Education Study Room	• There are some people who look fun working alone • All students are actively involved and the Limposit group looks more serious than other groups • Management of the division of labor in each group evenly • Students utilize internet facilities during the process of finding information when the discussion takes place • Presentation activities took place impressively, there were student representatives who explained without notes indicating he understood the material that had been learned. • There is no time limit when the presentation process makes some groups present more than the other groups • Practicum activities help students in building the Long Term Memory process

		• Laboratory conditions make it difficult for students to mobilize between groups

As for improving the process of carrying out the activity see are as follows:



	Persiapan	Waktu Pelaksanaan	Moderator dan Perannya	Dosen Model	Observer	Interaksi dalam Diskusi	Keefektifan	Revisi dan Tindak Lanjut
Siklus 1	84.30%	100.00%	100.00%	100.00%	88.80%	100.00%	100%	80.30%
Siklus 2	83.30%	100.00%	100.00%	88.80%	33.30%	100.00%	100%	90.70%

Figure 3 See Activity Data Recapitulation

Student Critical Thinking Ability

Critical thinking is a form of thinking that needs to be developed in order to solve problems, form conclusions, gather various possibilities, and make decisions when using all these skills effectively in the right context and type. Critical thinking is not done to seek answers, but more important is to question the answers, facts, or information available. Thus the best alternative or solution can be found. The average critical thinking ability of students in the Animal Physiology practicum based on Lesson Study in each cycle is as follows:

Based on the graph below, it can be seen that practicum activities with *Predict, Observe and Explain* (POE) models based on Lesson Study can foster students' critical thinking skills. This is because the *Predict, Observe and Explain* (POE) model is a learning model that has steps that are in accordance with the stages of critical thinking skills. The implementation of Lesson Study because of the collaborative nature of a group of lecturers to jointly plan learning (*plan*), carry out learning in front of the class with other lecturers observe the course of the learning process (do), and reflect or look again (see) the learning that has been carried out, in order to find and solve learning problems that may arise, so that the next learning can be planned and implemented better. Enter-enter the construct that makes learning activities in the form of practicum every cycle better. Discussion activities of students in each cycle increased, students not only discussed in one direction but were multi-directional with fellow friends in the group, friends in other groups and lecturers, even in finding information not a few students who made use of internet facilities. According to Hassoubah (2008) one way to improve the ability to think critically is through discussion, because with discussion we can express arguments, listen to other people's arguments, and evaluate arguments. Discussion activities make learning activities oriented towards students. This is very supportive of the development of critical thinking, as expressed in the Splitter (Rustini, 2001) that in the learning process the development of critical thinking skills focuses more on students as thinkers than on those who learn.

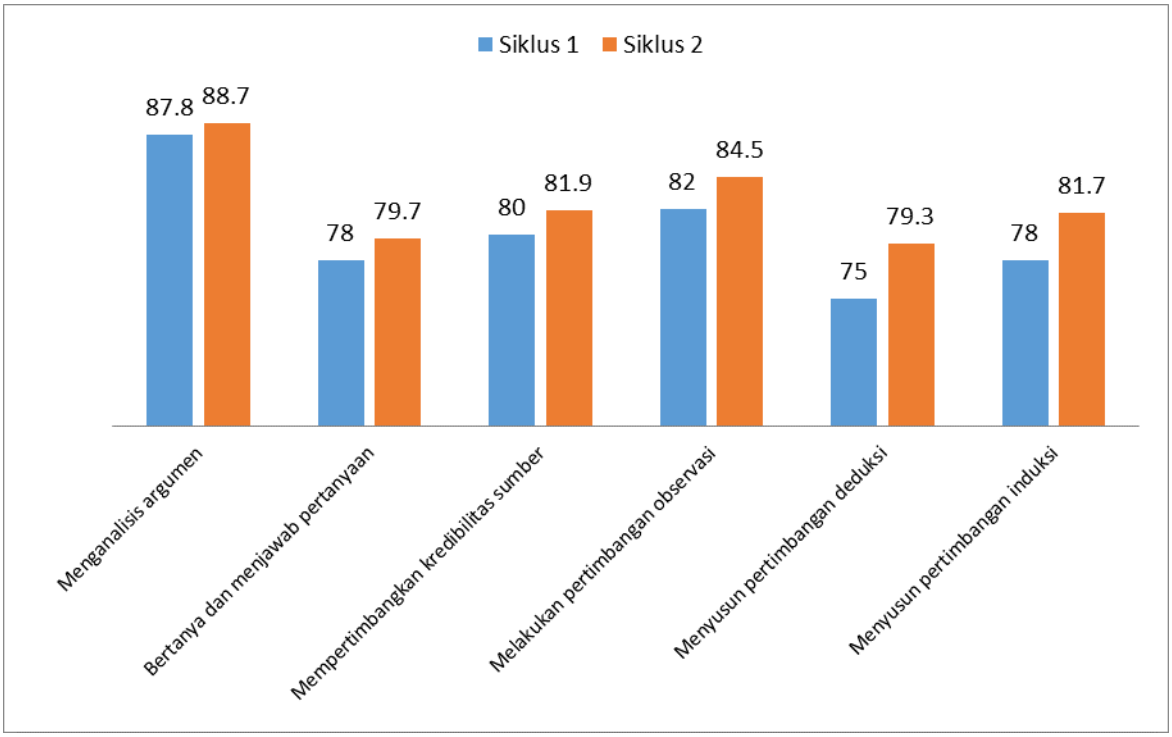


Figure 4 Average Students' Critical Thinking Ability

Ased on the research of Wright and Bar (Hassoubah, 2008) that a person's critical thinking ability can be improved, namely reading critically, increasing analytical power, developing the ability to observe / observe, increase curiosity, the ability to ask questions and reflection, metacognition, observe the "model" in critical thinking, and discussion that is "rich." According to Sartorelli (Hassoubah, 2008), students are said to have critical thinking when students receive views and suggestions from others to develop new ideas. Therefore, discussions can facilitate students to learn critical thinking.

CONCLUSION

Based on the results of data analysis obtained during the learning process, it can be Concluded that:

1. Improvement of attitude and skills competency in practicum activities through *Predict, Observe and Explain* (POE) models based on Lesson Study occurs in each activity in cycles 1
   to 2.
2. The average value of the highest critical thinking ability of students seen in the indicators analyzing arguments of 88.7 is included in the excellent category.
3. The lowest average value of students' critical thinking skills seen in the indicators compile considerations of deduction of 75 including in the good category.
4. Practicum activities through Predict, Observe and Explain (POE) models based on Lesson
5. Study developed can foster the ability to think critically of biology education students in the Animal Physiology course.

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EDIT INDONESIAN SCRIPT

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Abtrak, The purpose of this study is to obtain a deep understanding of the editing process in Indonesian scripts. This study uses a qualitative approach with ethnographic methods. The results showed that there were a number of mistakes that were often found, namely (1) spelling mistakes that included capital letter writing mistakes and the use of italics and the use of punctuation, (2) word writing mistakes, and (3) paragraph development mistakes. In addition, multifunctional editors are found, namely editors who have the task capacity should be, namely (1) the editor also acts as the editorial board and (2) the language editor as well as the material editor or vice versa.

Keywords: Script Editing, Indonesian Scripts, Language and Procedur editung

INTRODUCTION

Language editing has become a content in the Indonesian language education curriculum in both high school and college. In college, editing skills have become part of the general subject matter of Indonesian Language. With editing skills, students have the ability to edit scripts, both for the purposes of scientific activities and final assignments as a requirement to obtain a bachelor's degree.

An editor is not only facing technical problems in improving the manuscript relating to the language rules and the style of publishing. However, an editor has a fairly complex task. Regarding the complexity of editing, Joy Burrough-Boenisch stated, "It had three levels of editing: the rush edit, the standard edit and the revision edit. (2013: 149) Editing has three stages, namly (1) skim editing, (2) main editing, and (3) edited revisions.

At a skim editing level, the circumcision checks factual mistakes, consistency, important parts of the script, and completeness of the manuscript. Core circumcision is editing content related to the topic of a script and language as a medium to communicate the contents of the script. Meanwhile, the revised edits are an activity to review the entire component of a script with the aim of perfecting the manuscript so that it is worthy of publication.

In English, editors are often paired with editing. The term editing is often used in various fields. Therefore, the limits can also vary according to the field. In this regard, Boenish said,

> The term ‘editing’ means different things to different people, as it is used in various sectors of the industries that can be grouped into the very broad category of ‘communication’: publishing, journalism, film and recording (visual and audio). Precisely what the editing entails depends on the nature of the end-product of the industry in question. (2013: 141)

The term *editing* can be interpreted differently depending on the field being carried out, for example publishing, journalism, film, and television. In addition, the definition of editing is based also on the product it produces. Products produced in the editing process can be in

the form of script (publishing industry and print mass media), sound or audio (radio industry), and audio-visual (television and film industries).

In editing the script there are several aspects that are the object of editing. Viewed from the general understanding, the object is the systematic presentation, content, and language in the book. However, it is not only those aspects that are the object of editing. In this regard, Burrough-Boenisch argues, “It should by now be clear that a text in any language can be edited, and that correcting mistakes of language is only a part ofediting.” (2013: 144). Script in any language can be edited, and correcting language mistakes is only part of editing.

Eneste said that there are three aspects that are the object of editing, that is writing structure, content, and language (spelling, diction, and sentence structure). "(2017: 8) Systematic aspects of presentation include the style of confinement, that is the peculiarities possessed by every publishing agency. Therefore, the systematic editing of a publishing body can be different from other publications.

About the editing aspect, Trim argues that there are at least aspects of the purpose of editing the manuscript, namly (1) fatigue and readability, (2) obedience and consistency, (3) language, (4) spelling correctness, (5) language style clarity, (6) details of data and facts, (7) legality and politeness, and (8) accuracy of production details. (2017: 5-10)

Manuscript editing has different levels of difficulty. This is related to the aspect of edits contained in the nasakah. Trim divides the editing level into three categories, namely (1) light editing (light editing), (2) intermediate editing (medium editing), and (3) heavy editing (heavy editing). (2017: 21), Each level has a different type of improvement, namely:

1. Light editing; this editing is related to several aspects, namely (1) mechanical editing, to ensure consistency in the application of the shelling style; (2) cross checking; (3) correct grammatical mistakes; (4) correct factual inconsistencies; (5) record all graphic materials that require permission to use; and (6) give all print elements.
2. Medium editing; This editing is related to all aspects of improvement in minor editing, but in mediating editing there are other actions, namely (1) correcting and arranging sentences to be more effective and (2) adding information or definitions of terms for explanation.
3. Heavy editing; This editing is related to all aspects of minor editing, but in heavy editing there are other actions, namely (1) correcting all language ambiguities, (2) rewriting complicated and long-winded exposures, and (3) verifying and revising all facts that is not right.

METHOD

The purpose of this study is to obtain a deep understanding of the Indonesian language editing process at Publisher. The background of this study includes three things, namely place, actor, and activity. (Endraswara, 2003: 205). The place in question is the Book Publisher. The determination of the place of research is based on the consideration that this publisher has published many quality books, the types and segments of books published are quite varied, have branches in many major cities in Indonesia, and have had long-standing gait.

This study uses a qualitative approach with ethnographic methods. This study aims to examine and study more deeply about all aspects of culture, symptoms, and events that occur in natural environmental settings as they are. In the terminology of the method, in general the term ethnography refers to social research, one of which has characteristics that are behavior studied in a day-to-day context, not under experimental researchers. (Emzir: 2008: 152). This research will thoroughly examine the Indonesian language editing process at book publishers. from starting to get the manuscript until the manuscript is published.

RESULT

In this section, two things will be discussed which are part of this study, namely (1) types of language mistakes in the edited script and (2) editing cases. Both of these things become several things that become the object of observation in this study.

Types of Language Mistakes

Spelling Mistake

The guilty mistake in question is the use of spelling that is not in accordance with the guidelines. Some spelling mistakes found were capital letters and italics, word writing mistakes, punctuation mistakes, and paragraph development.

Mistake Writing Capital Letters

Incorrect use of capital letters is a capita letter that should be used to start a sentence in a direct passage.

Example:

(1) "maaf apa bu, seharusnya saya yang meminta maaf …."

As an *maaf* word that starts the sentence, the word should start with a capital letter. In addition, the sentence (1) above can also be used as an example that capital letter writing mistakes also occur in unusable greetings. The word *Bu* in the example above is a greeting. Therefore, the writing must begin with a capital letter.

(1a) "*Maaf* apa *Bu*, seharusnya saya yang meminta maaf …."

Use of Italics

The book used as the object of observation in this study is a novel book. In the novel many languages and foreign languages are used, but their writing is inconsistent. Writing a foreign language word or sentence is written in italics, but the writing of regional language words or sentences is not written in italics. Even though both elements of foreign languages and regions, the writing of these elements must be written in italics if used in writing Indonesian script.

Example:

(2) "Duuuuuh hari gini pertanyaan itu baru keluar neng, aya naon ieu teh? Kamana wae maneh Ra?" balas Sarisha.

Sentence of *Aya naon ieu teh? Kamana wae maneh,Ra?* 'What is this? where have you been,Ra?' is a Sundanese sentence, but the writing does not use italics.

Use of Punctuation.

The most prominent mistake in using punctuation is the use of question marks (?) exclamation marks (!) several times in ending sentences.

Examples:

(3) "gila lu beli lagi??" Tanya Sarisha

(4) Dah gue ikut deh, tapi elu yang bayar kan????

(5) "Siapa bilang!!!!! sembarangan banget tuh orang yaa!!!"

The use of question marks and exclamation marks several times in the sentence above actually does not differ in meaning from the ending sentence with a question mark or exclamation mark, follow this examples:

(3a) "gila lu beli lagi?" Tanya Sarisha

(4a) Dah gue ikut deh, tapi elu yang bayar kan?

(5a) "Siapa bilang! sembarangan banget tuh orang yaa!"

Word Writing Mistakes

Generally, word writing mistakes are related to writing raw and non-standard words. However, a word writing mistake was found because of an analogy mistake.

Example:

(6) Akhirnya tali *silahturahmi* Nency dengan ….

Writing the words of *silahturahmi* in the sentence (6) is wrong. It should be a *friendship*. Writing a *friendly* word in the sentence (4) is thought to be a combination of words from *silah* + *turahmi* bacause in Indonesian, there is the word *silah* (which is the standard *sila*). Even though the word *silaturahmi* has nothing to do with the word *sila*.

Paragraph Development Mistake

Paragraph development has three conditions, namely (1) coherence, (2) unity, and (3) completeness. To see if a paragraph fulfills it, the unity and coherence can be seen from the number of sentences that make up the paragraph. If the paragraph has many sentences, it can be expected that the paragraph does not fulfill the element of unity or coherence.

Contoh:

(7) Sebenarnya Zidhan sudah menduga akan terjadi ledakan seperti ini, tapi dia tidak sanggup untuk membayangkan akan kehilangan Sarisha yang sudah terlanjur mengisi selurus releng hidupnya. Dan dia pun sudah menduga kalau rumah tangga nya suatu saat akan hancur, karena ketidakmampuannya untuk berkomunikasi secara harmonis dengan istrinya, Sungguh tidak enak berada di tengah-tengah yang serba mengancam ini. Zidhan tahu bahwa dia harus mengambil keputusan di antara dua pilihan ini. Dia tidak berani berani mengambil keputusan dan menghadapi segala resiko demi menggapai sebuah tujuan yaitu hidup bersama Sarisha. Memang itu keputusan yang bersifat "melawan arus". Arus yang bergitu deras dan penuh terpaan badai. Dia membayangkan harga dirinya akan hancur karena tidak bisa mengendalikan biduk rumah tangga dalam mengarungi lautan. Hal yang paling dia takuti adalah penghinaan dari istrinya ditambah memikirkan nasib anak-anaknya. Tapi di satu sisi dia juga ingin mendapat penghargaan sebagai pasangan hidup seperti yang diberikan oleh Sarisha. Bagaimana Sarisha menghargai Zidhan, memeperlakukan Zidhan dengan penuh pengabdian dan ketulusan. Sarisha bak lautan kenyamanan. Zidhan hanya berani berenang mengikuti arus saja dengan menikmati apa yang ada dan apa yang terjadi di depan mata saja. Dengan mengikuti arus dia terlena bahwa gelombang dan badai bisa datang sewaktu-waktu. Dia lebih memilih seperti "ikan mati" yang nasibnya ditentukan oleh kemana arus mengalir?

The paragraph above is built by many sentences, because there are also many ideas. If based on the idea, the paragraph can be broken down into the following four phases.

(7a) Sebenarnya Zidhan sudah menduga akan terjadi ledakan seperti ini, tapi dia tidak sanggup untuk membayangkan akan kehilangan Sarisha yang sudah terlanjur mengisi selurus releng hidupnya. Dan dia pun sudah menduga kalau rumah tangga nya suatu saat akan hancur, karena ketidakmampuannya untuk berkomunikasi secara harmonis dengan istrinya. Sungguh tidak enak berada di tengah-tengah yang serba mengancam ini.

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Editor Procedure

Broadly speaking, the publisher has four parts, namly (1) the part that receives the script, (2) the one who manages, (3) the one who asks for help from the printing press, and (4) who deals with the bookstore. The recipient of the manuscript is tasked with determining whether a script will be accepted for publication or rejection. This task is the task of the editorial board that is directly responsible to the editorial board.

The manager's part is responsible for handling the script in collaboration with editors and authors. In the hand of the editor this script is prepared for printing. After the editing phase is complete, then the management section asks the printing company to print the manuscript in the form of printed products. After printing in accordance with a predetermined amount, then the promotion and sales department will distribute it to bookstores or other book sales places.

To be clearer, the relationship between parts in a book publishing institution can be seen in the following chart.

The editorial board is directly responsible to the publishing leader. The editorial board has the following tasks:

1) obtain and consider the script;
2) make a publishing agreement;
3) manuscript processing.

Meanwhile, the task of editing the manuscript can be detailed as follows:

1) edit the script in terms of language (spelling, diction, and sentence structure);
2) improve the script with the author's / author's approval;
3) making the script readable and not confusing the reader (paying attention to the readability of the script).

The production department is responsible for the production or manufacture of books in physical form. In some publishers, the production department deals with external parties who assist the book production process, such as setting, reprography, and color separation companies. The tasks of the production section can be detailed as follows:

1) designing the shape of the book; and
2) producing books

Books that have been printed, are handled by the marketing department. Broadly speaking, the task of the marketing department is to promote, distribute, and sell books.

The work procedure above is an ideal procedure and is only carried out by large and established publishers. However, for small publishers whose annual publishing duration is below five titles, they do not follow such work procedures. Based on the author's observations, the work procedures that can be stated in this section are the existence of multifunctional editors, namly editors who hold roles more than their capacity as editors.

The editor also acts as the editorial board

Due to limited human resources, the task of the editorial board is often carried out by editors. In addition to editing the manuscript until the script is readable, sometimes an editor gets and considers the script to be published.

Language editors as well as material editors or vice versa

The editorial board consists of several editors who have their respective expertise backgrounds. There are editors who specifically edit the language and there are editors who focus on editing material. Because of the attachment of the editorial staff in accordance with these fields, material editing and linguistics were carried out by one editor.

CONCLUSION

Issuance of a book through other attacks is quite long. From starting a script search, publishing and writing agreement, editing, confirming the results of edits, determining the book display, and promotion and distribution of books. From the series of activities, editors have an important role, because this activity is carried out involving many levels of editors.

Based on the object of editing, mistakes that are often found are (1) Spelling mistakes which include capital letter writing mistakes, italics, and punctuation usage, (2) word writing mistakes, and (3) paragraph development mistakes. In addition, multifunctional editors are found, namly editors who have the task capacity should be, namly (1) the editor also acts as the editorial board and (2) the language editor as well as the material editor or vice versa.

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