

Enhancement of Students' Mastery of Concept and Psychomotoric After Lesson Study Practice

Siti Halimatus Sakdiyah*, Suwito

Prodi Pendidikan Geografi, Fakultas Ilmu Pendidikan
Universitas PGRI Kanjuruhan Malang
Malang, Indonesia

*halimatus@unikama.ac.id, suwito@unikama.ac.id

Abstract—Lesson Study is a model of improving the quality of learning through collaborative and continuous learning studies based on the principles of collaboration and mutual learning, to build a learning community. Mastery of concept and psychomotor were one of main objective in lesson. The study aimed to improve mastery of concepts and psychomotor through lesson study-based learning. The study was a mixed method research that aimed to describe lesson study activity and related it to students' mastery on concept and psychomotor. The subject were five lecturer and forty students of Geography education in Kanjuruhan University of Malang. The data were both qualitative (description of lesson study) and quantitative (students' concept and psychomotor mastery). The results showed that an effective collaborative attitude in lesson study activities, especially at the plan stage, is very important in compiling and planning learning activities. Lesson study-based learning can also improve mastery of concepts and psychomotor.

Keywords—*lesson study, soft skills*

I. INTRODUCTION

The geography learning strategy subject in the Geography Education Study Program, Faculty of Education, Kanjuruhan University Malang is part of the basic framework of the process of student understanding of learning planning understanding. Teaching learning strategies to students presents a big challenge for the teacher, this is because a large amount of the material consists of concepts. Mastery of understanding the concept of geography learning strategies cannot be abandoned for all activities in learning planning. Based on the observations of the lecturer who teaches the learning strategy subject, problems that must be immediately sought out are: (1) the weak ability of students to understand the concept of learning strategies, (2) the weakness of students in translating a series of steps in the learning model into mastery of concepts, (3) the weakness of students in making the relationship between the conclusion and the objectives of the learning model simulation. In addition, so far, the teacher centered learning method is still used in the learning process, where the role of lecturers is still very dominant so that it has an impact on the lack of student independence.

Departing from this problem, wanting to try to change the culture of lectures from teacher centered learning to student centered learning, this is important to reduce student dependence on their lecturers. One alternative to answer these problems is to apply lesson study-based learning. Lesson Study is a model of improving the quality of learning through collaborative and continuous learning studies based on the principles of collaboration and mutual learning, to build a learning community [1].

Lesson study is a model of professional education development through collaborative and sustainable learning based on the principles of collaboration and mutual learning to build a learning community [2]. Lesson study is not a learning method or a learning strategy, but in lesson study activities you can select and apply various learning methods according to the situation, conditions, and problems faced by educators. It can also be said to be an instrument that is used to the full ability by lecturers to improve the quality of their teaching. Lesson Study has stages that need to be implemented systematically, according to the version developed by FMIPA UM in collaboration with JICA, it consists of three stages, namely: the planning stage (plan), the implementation stage (do) which is often referred to as the research lesson and the reflection stage (see) or post-lesson activities [3]. These three stages constitute one learning cycle.

Based on description above, lesson study is an excellent program for teacher professional development. This study aims to know how important the roles of lesson study for improving students' mastery of concept and psychomotor.

II. METHODS

This study was conducted in department of Geography Education of Kanjuruhan University of Malang. This was a mixed method [4] that aimed to describe lesson study activity and related it to students' mastery on concept and psychomotor. The research was carried out in the Geography Education Study Program in the geography Learning Strategy course from September-October 2017. The subjects were five lecturers who took turns being model lecturers and the others were observers. Apart from lecturers, 40 students of class 2016

who took the Geography Learning Strategy course were also involved in the activity lesson study this. The selection of lecturer and students was done by simple random sampling.

The data were both qualitative and quantitative. The qualitative data were all lesson study record document, such as teaching materials, recorded activity of plan, do, see, and observation sheets. The quantitative data were questionnaire and score of pretest and posttest for students.

III. RESULTS AND DISCUSSION

A. *Implementation of the Lesson Study*

Lesson studyThe Geography Education Study Program was held with six meetings in the geography learning strategy course, starting from 23 September to 2 November 2017. In one week students enter the class once. Before the Do stage, the team prepares or compiles learning scenarios, namely the Plan stage. While the See stage is carried out after the Do. The lesson study team took turns getting the opportunity to become a model lecturer. The lesson study this time was carried out in six cycles. Each cycle consists of three stages. First, Plan, which discusses teaching materials and learning scenarios as outlined in the lesson plan. Plans are compiled by model lecturers who are then examined, discussed and refined with the lesson study team.

The second step is the implementation (Do) to implement the learning design that has been formulated in the planning (Plan). The results of the discussion with the observer at the Plan stage agreed that each cycle would use a different learning model, after which the model lecturer first briefed the observers to remind them that during learning the observer did not interfere with learning activities but observed student activities during learning. The focus of observation is aimed at the interaction of students, students with teaching materials, students and lecturers, and students with the environment. Learning observation sheets were distributed to the observers before learning began. Then the observers are invited to take a place in the classroom which allows them to observe student activities.

At the Do stage, cycle I on the learning procedure material using the jigsaw learning model. In the second cycle with learning planning material using the team game tournament learning model. Cycle III with learning strategy material using the number head together learning model. In cycle IV, the material for selecting learning strategies uses problem solving learning models. Cycle V, the learning process material uses the guided inquiry learning model. Cycle VI feedback material using the number head together learning model again. The third step in the lesson study is to reflect (see). After completing the study, there was a discussion between the model lecturer and the observer. The model lecturer begins the discussion by conveying impressions in carrying out learning, then observers are asked to submit comments from the learning, especially with regard to student activities.

Criticisms and suggestions for model lecturers were also delivered wisely for the sake of improving learning. In detail, the see stage activities include: First, the Team reflects on the learning that has been carried out with discussions, starting with the model teacher conveying impressions and messages about the learning practices that have been carried out; Second, the Observer provides comments about what was good during the learning activity and what was not good with evidence and solutions; Third, the lesson study team found valuable lessons that have been carried out by the model teacher as best practices, and the activity was continued in the next cycle based on the results of reflection.

The contribution of the program in order to improve the quality of lesson study learning is basically an activity that is able to encourage the formation of a learning community that consistently makes continuous improvements both at the individual, group level, and in a more general system [5]. Lesson study program is felt to be very useful for improving the quality of learning. Based on a questionnaire distributed to students related to the contribution of lesson study in order to improve the quality of learning, students considered that lesson study-based learning was more interesting and made students more enthusiastic.

There are several characters that appear in students when they follow the lesson study-based learning process, namely students become courageous and confident. This can be seen when they are given the opportunity to express their thoughts when they present their creative ideas or the results of their group discussions. Students who previously tend to be closed and have difficulty communicating are finally able to change themselves to be open and willing to share with their group of friends. This can be seen when they discuss, there is a process of giving and receiving each other, there is a process of complementing each other to perfect the assignments given by the model lecturer. Thus, students can feel the true nature of learning. This of course cannot be separated from the contribution of the model lecturer who provides direction, stimulation, and appreciation for the results of student hard work. In addition, the learning process makes students comfortable, because lecturers pay more attention to students one by one. Lecturers also provide stimulation to students related to the material that has been given and the material to be delivered at the meeting at that time. The learning process is considered very interactive and very conducive.

According to students, in the lesson study activities, the material given by the lecturers was considered to be more detailed and there was always a process of improvement from the lecturers, both in terms of preparation, media, and class management. This is due to the learning records carried out by the lesson study team and observation sheets filled out by the observers. because lecturers pay more attention to students one by one. Lecturers also provide stimulation to students related to the material that has been given and the material to be delivered at the meeting at that time. The learning process is considered very interactive and very conducive. According to students, in the lesson study activities, the material given by the

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B. Students' Mastery on Concept and Psychomotor

Table 1 showed comparison of pretest and posttest score of students. The result showed that students' score increased after the practice of lesson study. The increment implied that students got better mastery of concept which was delivered. Although lesson study initially used to improve teachers' quality of conducting the lesson, the practice could also give positive effect on students' learning outcome [6,7].

TABLE I. COMPARISON OF PRETEST AND POSTTEST SCORE

	Max	Min	Std	Average
Pretest	75	40	10,8	68,5
Posttest	92	69	8,3	80,7

The psychomotor skill of students was shown by the result of questionnaire about learning strategy. The result showed that after conducting lesson study, students could practice into precision level of psychomotor taxonomy. Students could demonstrate some of learning strategy with degree accomplishment up to 84%.

Students also showed positive attitude on the practice of lesson study. Students consider that lesson study-based learning is more interesting and makes students more enthusiastic. Students who previously tend to be closed and have difficulty communicating are finally able to change themselves to be open and willing to share with their group of friends. It can be seen that when they discuss, there is a process of giving and receiving each other, there is a process of complementing each other to perfect the assignments given by the model lecturer.

C. Constraints Faced and the Efforts Made

There are several obstacles faced by the team in the lesson study activities that have been carried out. These obstacles can be resolved properly when the lesson study team conducts an evaluation. The constraints in question can be seen in the following description.

- Selection of instructional media, the lesson study team experienced problems in determining the appropriate media for large classes with diverse student abilities. Facing this kind of obstacle, the team decided to make a student worksheet that would make it easier for students to achieve the expected learning goals.
- The teaching hours of the lecturers are very tight, the lecturers who are involved in the lesson study activities are very busy. Adjustment of teaching hours for the implementation of lesson study activities is needed. For this reason, the team is committed to implementing lesson study by shifting teaching hours so that they do not coincide with lesson study activities.
- Monitoring student soft skills, time-limited lesson study activities caused the team to have a little difficulty in monitoring student soft skills. The relatively large number of students and the lesson study team who did not know the names of the students involved in the lesson study also made it more difficult for the team. To overcome this, the team asked students to make a name take that should be used when participating in the learning process in class. To monitor and ensure that students have honed their soft skills, the team made a video recording of the lesson.

Program lesson study activities are programs that are considered very useful for improving the learning process. For this reason, it is necessary to have a follow-up program that can be carried out so that the learning process in higher education is of higher quality. The lesson study team for the Geography Education Study Program has planned several things to follow up on the lesson study program, namely:

- Lesson study activities are not only limited to grant activities, this good activity should be carried out every time the learning process is carried out by forming a teaching team for each subject.
- The lesson study team plans to share experiences with colleagues about the importance of lesson study activities in the form of small discussions with the KBK team in particular and to all lecturers in geography education study programs in general.
- The lesson study team will develop a learning model so that the learning process runs more effectively and efficiently even though the number of students is very large.
- The use of student worksheets is very necessary to direct learning according to the steps of the learning model that have been arranged in accordance with the material being taught.

The need for assistance by experts in lesson study activities starting from plans, do to see, so that model lecturers know the ideal concept regarding the implementation of lesson study.

IV. CONCLUSION

An effective collaborative attitude in lesson study activities, especially at the plan stage, is very important in compiling and planning learning activities. This positive attitude is proven to help produce careful learning planning and will result in quality learning. The see / reflection stage is also no less important, because this stage is the core of the lesson study, where improvements must be made in the next cycle. The results of these improvements can increase the learning objectives to be achieved. The use of learning media must be done because it can support learning achievement, for example animated video media, image media, and motivational media. Lesson study activities can encourage solidarity, cooperation and interaction between lecturers, between students and between lecturers and students. Lesson study-based learning can also improve students, mastery of concepts and psychomotor.

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