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Implementation of Lesson Study in Learning Process: A Study of BiologyStudent Learning Activities

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Abstract

Prospective student educators can use Lesson Study to improve their ability to plan and design learning. However, understanding of the implementation of Lesson Study in the learning process by 1st semester students at the Postgraduate Biology Education Study Program, Universitas Negeri Malang are still lacking. Thus, a study or research is necessary for the implementation of Lesson Study by students. This study aims to determine student learning activities through the application of Lesson Study and as a form of training for students to transform their knowledge as prospective educators. Descriptive qualitative research is the type of research conducted here. There were three stages to this research, namely planning, implementing, and reflecting. The data obtained from this study are the implementation of Lesson Study activities with the application of the Jigsaw type cooperative learning model, the implementation of Lesson Study activities with the application of the STAD cooperative learning model combined with Snowball Throwing, student learning activities, and the results of reflection on the implementation ofLesson Study. According to the study's findings, Lesson Study can accurately reflect student activities and its implementation in the learning process is also able to provide prospective educators with an understanding of pedagogical competence.

Keywords: implementation; lesson study; learning activity

INTRODUCTION

The Lesson Study is the most effective method for improving the quality of learning and developing the professionalism of teachers in Japan. Implementation of Lesson Study is carried out collaboratively by 1) studying the curriculum, formulating learning objectives to be achieved and the needs of students, 2) designing appropriate learning processes to achieve learning objectives, 3) implementing and observing the learning process that has been designed, and 4) loading reflection as a form of improvement and refinement of further learning (Susilo, 2011). In this way, the teacher's ability to carry out the learning process will be improved and the problems they have will be overcome. One of the most common problems teachers face is increasing their ability in teaching, which is integral to the learning process. The implementation of the learning process is a very complex and difficult form. To be able to carry out this process, teachers must be careful in determining learning materials, compiling

learning designs, and considering students' needs in planning their learning activities. If the teacher's ability in this matter is not good, then the innovation and quality of the lesson plans that are prepared will not be good (Masaaki, 2014 ; Susantini et al., 2022 & Von, 2022).). Lesson Study still remains a mystery to students in the Postgraduate Biology Education Study Program at the Universitas Negeri Malang. The reason for this is that the students are not independent enough to learn. This requires lecturers to apply several approaches and learning strategies that are creative and innovative. Lecturers provide opportunities for students to carry out Lesson Study activities from the planning stage to the implementation stage. In addition to lack of experience in implementing Lesson Study, students who laterbecome teachers may leave Lesson Study because they lack the ability to do so. In addition, most studentsare unable to make good lesson plans in collaboration with others. Lesson Study is a model for fostering the teaching profession through collaborative and sustainable learning assessments, based on the principles of collegiality that help each other in learning to build a learning community (Lesson Study Guide, 2009).

Practicing the application of learning models designed through lesson study learning can be one of the ways to develop the abilities and skills of prospective teachers. It is assumed that Lesson Study can have a positive effect on the functional relationship, influence, and development that will result from its application in Biology learning. Lesson Study is a model used as a teaching guide for students because, inthis model, collaborative, collegial, and mutually beneficial work is developed in learning (Rahmawati, 2014). The Lesson Study illustrates how students can be trained and guided in learning activities through organizing, training, and guiding lessons. Educator competence will be increased through Lesson Study, thereby improving the quality of learning in the places where prospective educators work, ultimately leading to better learning outcomes. The quality of learning is determined, among others, by the activeness and creativity of lecturers and students, the success of the learning process, and its overall atmosphere (Suminarsih, 2008). Student activity in lectures, according to Sudjana (2010) can be seen in

1) participating in carrying out their learning tasks, 2) involving in solving problems, 3) asking other students or the teacher if they do not understand the problems they are facing, 4) trying to find various information needed to solve problems, 5) carry out group discussions with teacher instructions, 6) assess his abilities and the results obtained, 7) train yourself in solving problems or similar problems, 8) Opportunities to use or apply what that has been obtained in completing the task or problem it faces. Furthermore, active students are students who are intellectually and emotionally involved in learning activities (Ahmadi & Supriyono, 2004). Meanwhile, according to Hollingsworth & Lewis (2008), an active student is one who is involved in learning on both a physical and mental level. Therefore, a study or research is needed on the implementation of Lesson Study by students. Through the application of Lesson Study, this study aims to determine student learning activities and train students to become teacher candidates.

METHOD

A qualitative descriptive study is conducted in this study. The research subjects were postgraduate students at the Universitas Negeri Malang, Offering C, Biology Education Study Program with a total of 21 students. The data obtained were data on the implementation of Lesson Study (LS) activities with (1) the application of the cooperative learning model of Jigsaw as the first LS implementation, (2) the implementation of LS activities with the application of the cooperative learning model of STAD type combined with Snowball Throwing as the implementation of the second LS, (3) student learning activity data and (4) data reflecting the implementation of Lesson Study. The data in this study were obtained based on the results of observations made by 2 observers in the learning process, reports on the results of LS implementation, and arguments from other students regarding the ability of model lecturers in the learning process.

This research was conducted in three stages, namely the planning, implementation, and reflection stages of Lesson Study implementation. The planning stage is a student activity in compiling data and learning tools in a collaborative manner that is guided by a powerful lecturer. At this stage, students makepapers on the given topic, presentation slides, lesson plans, lesson designs, chapter designs, and student worksheets. The implementation stage is the implementation stage of the Lesson Study which is carried out in class C of the postgraduate biology education class of 2017. The implementation of the

Lesson Study is carried out in 2 stages. The first stage is by applying the Jigsaw type of cooperative learning model and the next stage is by applying the STAD type of cooperative learning model combined with Snowball Throwing. The last stage is to reflect on the learning process carried out. The reflection process is carried out at the end of the learning process by asking for arguments from model lecturers, observers, students, and powerful lecturers.

RESULT AND DISCUSSION

Result

1st Cycle: Description of the implementation of Lesson Study activities with the application of thecooperative learning model of Jigsaw Type.

The discussion was led by a lecturer who was influential in the subject. Starting with the delivery of the lesson plans and an explanation by the model lecturer, The lecture material discusses the topic of the research plan. The learning model uses a jigsaw type cooperative model. The model lecturer and the team prepare the Learning Process Plan, Student Worksheet, Lesson Design, presentation materials and Chapter Design. Initial Activities: The lecturer begins the lecture by greeting and inviting students to pray, the lecturer asks for news and checks student attendance, makes apperception to students by displaying a picture of an architect and asks what it means if it is analogous to a study and the lecturer model – the student who act as a lecturer – conveys the purpose of the lecture and then divides students into in 4 groups as the origin group.

Core Activities: model lecturer directs students to observe, ask questions, try, associate and communicate. In observing activities, the lecturer asks students to sit with their home group, asks studentsto divide the material into each member of the home group, divides students into expert groups whose members consist of the home group and gives students LKM and explains the procedures for working on the LKM. In the questioning activity, students ask the lecturer if they do not understand. In the trial activity, students tried to design a concept map regarding the research design and gathered information from various references related to the research design with the home group. In the associating activity, students from the home group join the expert group to discuss the results of their work in their MFI. Here they can exchange ideas and equate concepts. So that they can process information from their findings on today's material. In the communication activity, students from the expert group rejoined the home group, then conveyed what they got from the discussion with the expert group. Each home group conveys the results of the discussion through presentations and questions and answers with other home groups. Closing Activity: Lecturer provides material reinforcement and asks students if there is anything they want to ask, asks several students to provide conclusions on today's learning, reminds students to reflect on today's lecture activities and gives rewards to the most active group and conveys material for the next meeting and closed the lesson.

Reflection by Lecturer Model: Voice is less gentle, Uses less formal language, Hand gestures are a bit excessive, Time management that should be 90 minutes becomes only 73 minutes, less firm in reprimanding friends who are not disciplined. The valuable lesson learned is that being a lecturer is not easy. Lecturers must practice teaching skills and exercise courage and be able to coordinate classes well and understand more material than the audience. Reflection by Observer 1: The learning activities are quite good, the opening has been done very well even though the time is too fast, the apperception and learning objectives have been conveyed well, the group division is too fast so that students experience confusion, the organization of time is still lacking because there is a lack of time for 5 minutes and the provision of reinforcement is still lacking. The thing that should be taken as an example from the model lecturer is that the model lecturer does not give up in managing students even though many come late. Valuable lessons learned are the importance of time discipline, as well as good communication between students and students and between students and lecturers are needed to form conducive learning conditions.

Reflection by Observer 2: The preliminary stage is good, especially in giving apperception, thus stimulating the enthusiasm of students in learning, time management is good, group management is good,model lecturer directs students to arrange sitting positions to make it easier to discuss, explanation of the LKM before the activity the discussion was very good, the closing activity was complete, especially prayer, conveying the material to be studied, closing the lesson very well and the lecturer in

charge of directing the learning. The thing that should be exemplified from the model lecturer is the enthusiasm of the model lecturer, especially at the beginning when many students are late but the model lecturer does not give up in directing students and is confident. The valuable lesson learned is that putting thoughts together is difficult but with healthy communication and discussion something taboo can become clear.

2nd Cycle: Description of the implementation of Lesson Study activities by applying the STAD type cooperative learning model combined with Snowball Throwing.

The discussion was led by a lecturer who was influential in the subject. It begins with the delivery of the lesson plans and an explanation by the model lecturer. The lecture material discusses the topic of the research plan. The learning model uses a jigsaw type cooperative model. The model lecturer and teamprepare lesson plans, LKM, Lesson Design, presentation slides and Chapter Design. Initial Activities: Thelecturer gave ice breaking before starting the lesson, started the lecture by saying, inviting students to pray and checking student attendance. After that, the model lecturer gave apperception starting byrecalling last week's lecture material about experimental research, giving apperception to students by displaying a map and mentioning the purpose of the lecture, namely understanding ex post facto design. After that, the model lecturer divided the students into 4 groups.

Core Activities: model lecturer directs students to observe, ask questions, try, associate and communicate. In observing activities, the model lecturer asks students to sit with groups, distributes material that must be understood by each group, gives LKM to students and explains procedures for working on LKM. In the questioning activity, students ask the lecturer if they do not understand. In the trial activity, students try to make a summary of the material obtained and students collect information from various references related to the material obtained together in groups. In the associating activity, students exchange ideas and equate concepts. In communicating activities, each group conveys the resultsof the discussion through presentations, students are given the opportunity to make questions on the paperprovided, throw questions to students who want to be asked questions, students who get questions answer these questions and groups who are able to answer questions well are given points. Closing Activity: The lecturer provided material reinforcement and asked students if they had anything to ask, the lecturer askedseveral students to conclude today's learning and remind students to reflect on today's lecture activities and give rewards to the most active group.

Reflection by Lecturer Model: The use of language is not standard, time management is good, thereare still excessive gestures and expressions and there are still mistakes in applying the snowball throwing syntax. Reflection by Observer 1: Apperception was good at the beginning, the model lecturer remained calm even when under pressure, learning became more interesting, the model lecturer could lead the lesson well, All members solved problems with discussion and divided tasks when time was running out, all class discussions actively looking for solutions to problems, model lecturers are calm and patient in dealing with existing problems and learning objectives are achieved. The thing that should be exemplifiedby the model lecturer is the calmness of the model lecturer in dealing with problems in class, his cheerfulness and enthusiasm. The valuable lesson learned is that it takes some innovation in learning so that it can increase student interest in learning. Reflection by Observer 2: The apperception at the beginning was good, the learning activities were good enough to create a different way of learning for each group, the lecturer model was calm and patient in dealing with existing problems, there were still disturbances in the middle of learning and the learning objectives were achieved. The thing that should be exemplified by the model lecturer is to remain strong and enthusiastic despite facing many obstacles in the learning process. The valuable lesson learned is that acting as it is is more meaningful than thinking without action.

Discussion

Planning activities throughout the cycle are carried out enthusiastically. All students show an open attitude. Model lecturers become more prepared to carry out learning and become more confident, and aremotivated to prepare lesson plans better than before. Observer lecturers can see the advantages and disadvantages of the lesson plans prepared by model lecturers that can be used as a reference in preparing their own lesson plans. From cycle 1 to cycle 2, it appears that there is an increase in the quality of the lesson plans made by the model lecturer. When lecturers discuss lesson plans, things they normally have to deal with are creating an atmosphere conducive to collaboration, for example by suggesting that all lecturers be given the opportunity to express their opinions instead of being asked for them (Wahyuni, 2015). Choosing the right implementation model can have a significant impact on

the efficiency and effectiveness of learning (Mulyasa, 2011; Sedgewick et al., 2016; & Gill et al., 2022).

The implementation of learning as an open lesson activity becomes a valuable experience for model lecturers, observer lecturers and students. At stage 1 the implementation of learning looks a bit tense, but only at the beginning of learning. Overall, the model lecturers carry out learning according to the lesson plans. All model lecturers use laptop media to present power points and provide material summaries to students before the implementation of learning. Student learning behavior varies, in general there are still some students who are passive and show non-learning activities when participating in learning. The learning steps from all model lecturers are generally the same, namely opening learning by conveying learning objectives and motivating students, followed by core activities in the form of delivering material, using lecture and question and answer methods, giving and doing exercises in class, and closing with assignments. All model lecturers are enthusiastic. The implementation of learning from stages 1 and 2 showed an increase in quality, especially in student activities. In order to improve the professionalism of lecturers, lesson study should be implemented regularly. A professionalized teaching force (lecturers) results in increased teaching and learning effectiveness, which indirectly translates into improved quality of education (Putra, 2008 & Getenet et al., 2016).

Each reflection activity is carried out on the same day as the implementation activity. Model lecturers are open to receiving input from observer lecturers. Each cycle of reflection activities produces findings from learning implementation activities, both weaknesses and strengths. All model lecturers use inputs as a basis for making improvements to learning in the next cycle. In general, both model lecturers and observer lecturers get valuable lessons from the implementation of learning that occurs in all cycles. As Cruickshank, et al (1980) note, four steps must be followed in learning reflection, as follows: (1) Explaining what is happening; (2) educating others about what is happening behind the scenes ofclassroom education; (3) confronting the theories of teaching, learning, and social in the previous step andexplaining why the learning strategy was chosen; (4) conducting class reconstructions and learning eventsthat provide an explanation of what has been done (strengths and weaknesses).

CONCLUSION

Considering the results of implementing the lesson study above, it can be said that both 1st stage and 2nd stage students are enthusiastic and engaged in following the learning process. As prospective educators, students are expected to improve their pedagogical abilities by implementing lesson studies.

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