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Application of The Lesson Study-Based Problem Learning Model To Improve Communication Skills And Teamwork Skills Of Biological Education Students

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Abstract

This study aims to determine the application of the Problem Based Learning (PBL) learning model to improve communication skills and teamwork skills for Biology Education Students. The subjects of this study were students who offered C PPG in 2016 odd semester of the 2018/2019 academic year S1 Biology Education, State University of Malang. Data on communication skills in the form of scores obtained from the rubric of writing communication skills based on observations. Teamwork Skills consist of observation sheets filled out by observers and questionnaires filled out by students at each meeting. The results showed that: (1) LKM students' communication skills in each meeting increased, namely in cycle one 1 in the content aspect from 72.41% to 95.15%; organizational aspects from 80.17% to 91.34%; syntax aspect 71.55% to 72.11%; views and information 55% to 75%. (2) Student Teamwork Skills have increased, namely aspects of focus on goals from 83.07 to 83.84%, Leadership and ownership (75.38 to 81.35 %), Delegation of tasks (71.53 to 74.23) %, and time management (79.23 to 54.61) %. The conclusions of this study are: learning using a problem based learning (PBL) model based on lesson study can improve students' communication skills, especially writing and student Teamwork Skills.

Keywords*: Problem Based Learning, Communication Skills, Teamwork Skills*

1. Introduction

Education is a learning process with the aim of producing human resources who have good character, knowledge, skills, morals, and behavior. According to UU No. 20 of 2003 concerning the National Education System, namely education aims to produce human beings who believe, fear God Almighty, are healthy, have noble character, are creative, knowledgeable, independent, capable, and become a democratic and responsible society. In addition, education can also be said to be an organized and socially regulated process (Naziev, 2021) and can develop the economy and society of a country (Idris et al., 2012).

Education can be applied in the learning process. The learning process is an interaction between students and teachers and their environment. In accordance with UU No. 20 of 2003 concerning the National Education System which contains that learning is an interaction between students, teachers, learning resources in a learning environment that aims to help students undergo the learning process so that effective learning behavior is realized. Miarso in (Uno, 2012) states that effective learning is useful and student-centered learning through appropriate procedures and achieving learning goals as expected by educators (Setyosari, 2017).

The use of appropriate learning procedures can make learning meaningful and the development of student learning in the classroom more optimal. Maximum learning activities can be seen if learning indicators are achieved, namely the management of learning implementation, communicative processes, student responses, learning activities, and learning outcomes (Yusuf, 2017). Based on these indicators, learning becomes more optimal if the teacher knows the implementation of learning and also knows the obstacles faced by students in learning. One way to find out the problems faced in learning and their solutions is to conduct classroom action research, because CAR is a systematic way to gain insight into teaching (Mettetal, 2002) and work to solve problems in the classroom (Khasinah, 2013) because teachers conduct their own investigations of what works and does not work for their students in the classroom (Syah, 2016).

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There are several issues related to CAR including planning, processes, methods used, media and learning resources, as well as evaluation in learning (Juliandi, 2017). CAR is done by the teacher making observations first in the class that has problems or obstacles in learning. Then the teacher takes action with the solutions he finds. Furthermore, observations and reflections are made on the actions that have been taken by the teacher. Based on this, teachers can solve issues related to learning activities with CAR (Alek, 2016).

Classroom action research (CAR) can be successful or unsuccessful influenced by the involvement of teachers in the learning process in CAR. CAR can be used as a teacher as a form of encouragement to become a collaborator to improve teacher professionalism in teaching (Herman, n.d.). The implementation of teacher involvement in the classroom will be good if lesson study activities are carried out in learning. The practice of implementing lesson study activities is considered effective for researchers to change teacher teaching practices because it involves concrete learning so that teachers focus on learning (Mahmudi, 2006).

Lesson study is a learning activity carried out to improve the quality of learning and develop teacher competence (Susilo & Wahyudi, 2009) and teacher professionalism (Zubaidah, 2010) or a model of professional development of educators and education staff (Fadloli, 2014), and can increase student activities in learning (Melati et al., 2014). Lesson studies are carried out in teams with the stages of plan (planning), do (implementation), and see (reflection) with the principle of increasing the quality of learning gradually by learning from the experiences of oneself and others during learning activities (Vitantri, 2014).

The lesson is designed by the teacher and the lesson study team together, then the teacher applies the design results and other friends observe as observers during class learning. The learning that has been carried out in class will be reflected together by the team with the aim of being able to identify deficiencies and provide solutions for subsequent learning. Lesson study learning can help teachers in teaching because the learning process that will be carried out is thought out together, so that it can produce more innovative, active, creative, and well-procedure learning as desired. This is in accordance with research conducted by Devi et al. (2020), which states that in the implementation of lesson study student activity increases according to the learning method which is the result of reflection and evaluation of the previous cycle.

Based on the results of observations and interviews with PPG course lecturers that the author has done, learning in this Teacher Professional Development (PPG) class uses a Problem Based Learning model with the aim that students can solve problems given in the form of LKM and improve their writing and communication skills. speaking which is assessed in learning. The PBL model from several studies is said to be effective in carrying out learning activities (Esema et al., 2003) and can increase analytical thinking skills and strategies in learning both for teachers and students (Assegaff & Sontani, 2016).

Based on the researcher's observations, some of the abilities of the students in this class have not been assessed, such as the communication skills of the LKM given to students. Another problem is that there is no visible collaboration between groups, so the author assumes that students' teamwork skills are still lacking. Teamwork skills are one of the important skills in the work environment (Hisyam & Hashim, 2015), so this ability needs to be developed for graduates (Brookes, 2017). In accordance with the research of Sulaiman et al. (2016), teamwork skills can help increase the added value of students, increase self-confidence, and improve communication skills and student interactions with other people.

Based on the background exposure, the authors are interested in conducting two cycles of classroom action research in the Teacher Development Profession course with the research title "Application of Problem Based Learning Models to Improve LKM Communication Skills and Teamwork Skills of Biology Education Students in Teacher Professional Development (PPG) Courses".

2. Method

The research approach used is descriptive qualitative research to describe the problems in this study and the impact of the actions given. This research is a type of Classroom Action Research (CAR), which is a practical research that aims to improve the quality of learning with certain actions. The action is in the form of implementing a lesson study-based problem based learning (PBL) model to improve the communication skills of LKM and Teamwork Skills for Biology Students Offering C in 2016 in PPG Courses at the State University of Malang. This research was conducted from September to November 2018.

The research data collection tool uses LKM questions & student communication skills observation sheets (writing) with indicators: 1) Content; 2) Organization; 3) Syntax; and 4) Display and Information. Then, the Teamworks Skills observation sheet to be filled out by the observer and the Teamworks Skills questionnaire to be filled out by the students.

This lesson study-based Classroom Action Research (CAR) procedure was carried out in 2 cycles, each cycle consisting of planning, implementation, observation, and reflection stages. Lesson study activity procedures, (a) action planning; (b) implementation of actions and observations; and (c) the reflection stage at each meeting and at the end of the cycle.

3. Results and Discussion

a) Implementation of Problem Based Learning (PBL) Learning Syntax

Based on the PBL learning implementation sheet by the three observers, there was an increase in each meeting in terms of the implementation of the learning syntax. The obstacles experienced in terms of syntax implementation are that at the beginning of learning researchers often forget in the sequence of implementing learning syntax, this is influenced by the factor the researcher first conducts learning activities in class. However, at the next meeting there is always an increase in the implementation of the problem based learning syntax, which can be seen in Figure 1.

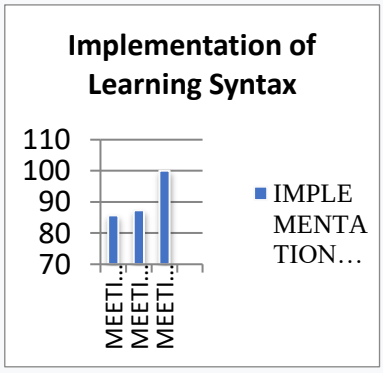

Figure 1. Graph of the Implementation of Learning Activities

Based on the graph above, it can be seen that there is an increase in the implementation of learning activities according to the PBL syntax, where at meeting 1, the implementation of PBL syntax is 85.71% and at meeting 2 the implementation of learning syntax is 87.3%. As for the 3rd meeting the PBL learning syntax has been implemented 100%.

b) Communication Skills

Based on the results obtained, students' communication skills increased in 4 aspects but decreased in the display and information aspects. This can be seen more clearly in Figure 2 below.

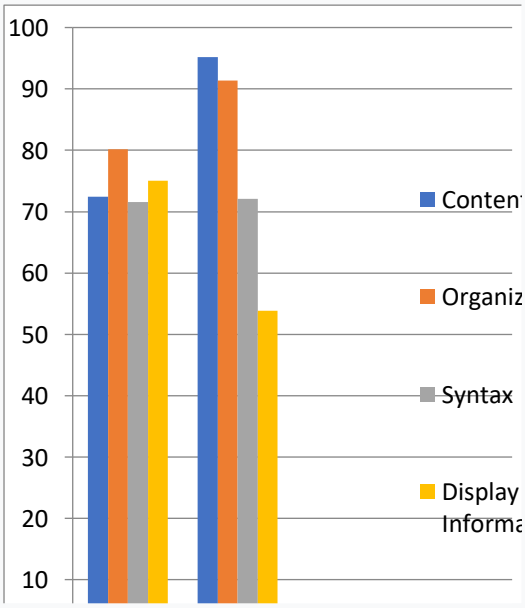

Figure 2. Communication Skills

At the beginning of the learning activities, the value of the content aspect was only 72, 41%. However, at the second meeting, the content aspect increased to 95.19%. Then, in the organizational aspect, at the 1st meeting it was only 80, 17%, but at the 2nd meeting, this aspect increased to 91.34 percent. Aspects for syntax did not experience a significant increase, where at meeting 1, it was only 71.55%, and at meeting two it was 72.11%. In the display and information aspect, meeting 1 and meeting 2 decreased, where at meeting 1 this aspect was 75%, and at meeting 2, it decreased to 53.85%.

c) Teamwork Skills

Teamwork skills have also increased. This can be seen based on the graph presented in the diagram below (figure 3). Based on the graph in Figure 3 below, it can be seen that there was an increase in students' teamwork skills at meeting 1 and meeting 2. However, it was not too significant. The increase in student teamwork skills in the aspect of focus on goals at the first meeting was 83.07% to 83.84%. Then in the leadership and owner ship aspect, it decreased from 81.35% at the 1st meeting to 75.38%. Aspects of task delegation also experienced a decrease, where at the 1st meeting it was 74.23%, but at the 2nd meeting it became 71.53%. However, in time management, students experienced a significant

increase, where at the first meeting the time management aspect was only 54.61%, increasing to 79.23%.

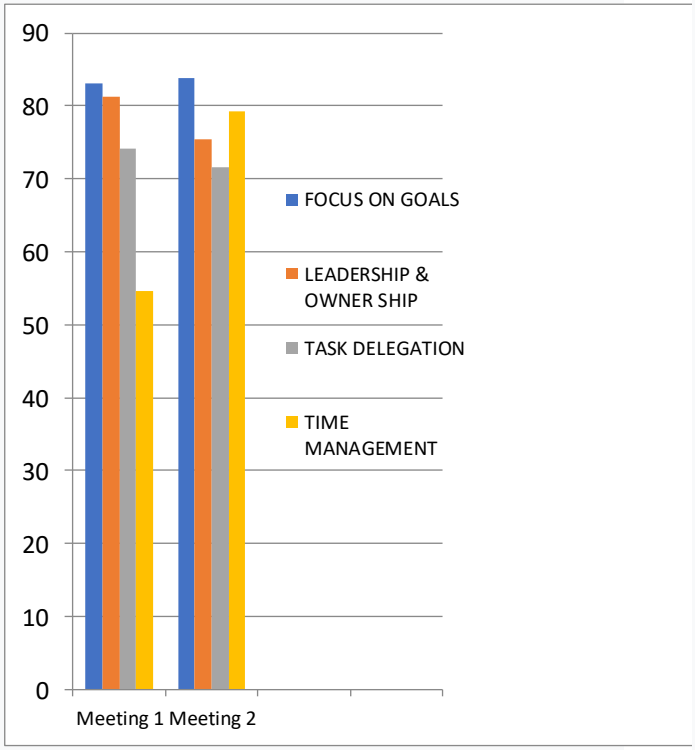

Figure 3. Teamworks skills

d) Problem Based Learning Based on Lesson Study to Improve Students' Communication and Teamwork Skills

Problem based learning (PBL) is a learning model that was originally developed in the medical world, but has now been developed in the world of education because this model is collaborativism and constructivism (Esema et al., 2003). Based on the data obtained that learning activities carried out using this model are effective in learning activities and can improve students' oral communication skills both individually and in groups (Ustun, 2006). Based on the research conducted, this model is also effectively implemented in PPG learning activities at the State University of Malang and can improve students' communication skills.

Learning activities in the PPG class combine the PBL learning model with Lesson Study. Lesson study is one of the tools for the price of a collaborative and sustainable learning process. With the lesson study activities are expected to improve student communication skills. This is evident from the results of research Najah et al. (2019) and Setyawan et al. (2021), lesson study-based PBL models can improve students' oral communication skills. Results Based on the results obtained, it turns out that the lesson study-based PBL learning model can improve students' writing communication skills which are assessed from the results of the LKM. Then, based on the test results for each cycle, it was also found that there was an increase in student LKM communication skills in every aspect that was observed, but for the display and information aspects it had not increased. This aspect is not used because the time used by students to complete the LKM is very limited, so the information obtained is also less than optimal.

Then, the PBL-based learning model with Lesson study makes students' Teamwork Skills increase but not significantly, where initially the time management of students is still lacking. However, with the Lesson Study activities carried out, it was found that there was an increase in teamwork. This can be seen from the activeness of students in each meeting. The increase in this aspect is due to the presence of observers who observe student activities, so that student activities to be active in learning increase. In addition, teamwork skills can also help students to build self-confidence, interpersonal skills, and conflict management (Akindele, 2012). With high self-confidence, students will focus on their main goals in learning activities. This can be seen from the results of the study where the focus and goals of students increased, although not too significantly.

4. Conclusion

Based on the results of the study, it can be concluded that there is an increase in communication skills and teamwork skills through the application of the problem based learning (PBL) model at the Biology Education S1 offering C-PPG State University of Malang in the 2018/2019 academic year.

Suggestions from this research are: educators are expected to apply the problem-based learning model based on lesson study in order to improve students' communication and teamwork skills and make innovations in every meeting in learning.

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