PRACTICING LESSON STUDY ACTIVITY IN BIOLOGY SUBJECT TO IMPROVE COMMUNICATION AND COLLABORATIVE OF STUDENTS IN SMPN 18 KOTA BENGKULU

By: Irwandi\textsuperscript{1} and Robiah\textsuperscript{2}
(Biology Education, FKIP, UNMUH Bengkulu Lecturer)
(HP.081555738403, Email: takbawu@yahoo.com)

Abstract: Practicing of lesson study activity on biology subject aim to improve communication and collaborative activity of students in SMPN 18 Kota Bengkulu. Involved students in this activity is 36 students. Implementation step of lesson study activity is planning, learning implementation (Do) and reflection (see) which is done in 4 open lesson. Topics learning are air pollution, 2. Soil Pollution 3. Water Pollution and Forest Pollution. The result from implementation of lesson study activity show that there is communication improvement activity and collaborative of students in biology subject in SMPN 18 Kota Bengkulu.

Key words: Lesson study, biology, communication and collaborative

1. INTRODUCTION

a. Background
At the learning process takes place students were less active in following the lessons, so students tend to be passive during the process of teaching and learning in class, it is because students are still focused on the teacher in the learning process biological being offset by teaching himself, as well as the tendency of teachers who use lecture methods in the learning process so that the lack of interest from the student. Students are not very difficult to give an opinion (communication) both in group discussions and class discussions in the learning process. During the discussions students can not cooperate each other, so the in a group tend to be dominated only certain people only. It is also revealed by Masaaki Sato (2012) that students tend to be closed, unable to listen to the opinions of others, less good at communicating with others, indifferent to others, feel inferior, and so forth. Teachers have difficulty involving all students in the learning process. According to Masaaki Sato (2012) to improve the situation as above the need for dialogue (communications) and collaborative learning through lesson study activities.

Biology subjects at SMPN 18 Bengkulu is a one of subject in science. Biology lesson topic during the learning activity is to discuss about 1) Air pollution, 2) water contamination, 3) Contamination of land, and 4) the destruction of the forests.

Based on experience and observation of the author as a Biology teacher, Biology lessons at SMPN 18 Kota Bengkulu still use conventional learning and less likely to involve the activity of students in the learning process, so that they have difficulty in understanding the biology learning materials. Students during the discussion had difficulty in speech and cooperate in a group discussion.

One effort to overcome the lack of communication and collaborative activities of the students in learning process at SMPN 18 Kota Bengkulu, is through lesson study. With the lesson study activities based on the principles of collegiality and mutual learning can build a learning community, communication learning activities students’, interaction and cooperation of students, as well as the improvement of the learning process is expected to be resolved properly. At the stage of reflection (see) teachers will receive inputs from various parties who are competent, on learning that is directed at how students learn. Therefore, it is possible to improve the quality of learning both activity and student learning outcomes.
b. Problem Statement

This problem statement is "whether the implementation of the Lesson Study activities on biology lesson can improve communication and collaborative activity of students in SMPN 18 Kota Bengkulu?"

c. Theory of study

Implementation of Lesson Study in Subjects Biology

Lesson study activities have been implemented in SMPN 18 Kota Bengkulu in April to June 2015, on the course from Biology with teacher Model: Dra. Robiah, and observer: 1) Oktarita Silitonga, S.Pd 2) Kartikawati, S.Pd3) Saruni, S.Pd 4) Resti Herath, S.Pd. Students involved the 36 people who follow the course from Biology Class VII. Implementation of open lesson Consist of 4 (four) cycles. At each cycle of discussions held planning (plan), implementation in the classroom (do) and reflections from each end of the activity (see). Phase 1 namely planning (Plan), things are done is as follows. a) analyze the teaching materials which include: the depth of material, compliance with the demands of the curriculum, and the difficulty level, b) determine the learning strategies, and c) create a learning device. Phase 2: the implementation of (Do) includes the following activities. a) a brief meeting (briefing) guided by facilitator in this regard Deputy Curriculum SMPN 18 Kota Bengkulu, b) Master models put forward a brief plan (lesson plans, goals, position teaching materials in the curriculum, the estimate is likely student responses) c) The facilitator reminds the observer to not intervene in the learning process d) Observer welcome to choose wrought tstrategis according to plan observations e)Teacher Model carry learning process. Phase 3See (reflection) activities carried out are as follows. a) The facilitator presents the agenda of reflection, b) The facilitator presents the rules, c) Each participant was given a chance to speak, speak based on the observation findings. d) Put focused on "how the students learning", e) Teacher models deliver both of appropriate events and not appropriate with expectations and f) The facilitator provides the opportunity observer commented

Communicative and Collaborative Learning Activities

According to Soetomo (1993) learning activities are as follows:
1) Visual activities: reading, pictures observations, doing experiments / demonstrations
2) Oral activities: storytelling, question and answer, discussion, etc.
3) Listening activities: listening to the teacher, friend etc.
4) Drawing activities: drawing, making patterns, tables, etc.
5) Motor activities: conducting experiments
6) Mental activities: responding, troubleshoot, analyze, make decisions, etc.
7) Emotional activities: an interest, brave, happy, etc.

Communicating Learning activities are activities oral learning to communication, which students can discuss in learning, students can provide a question and provide arguments in learning. Collaborative learning activities is the students are able to work together in learning, work together in carrying out the experiment, answering questions in Students worksheet and make a report. Students also cooperate in discussions by sharing information.

2. RESEARCH METHODS

This study used a qualitative approach with case study (Yin, 2006). The research questions focused on "whether the implementation of the Lesson Study activities on biology lesson can improve communication and collaborative activities of students in SMPN 18 Kota Bengkulu? Data obtained from the documentation implementation of activities, observation sheets, and the student's work during the implementation of Lesson Study in SMPN 18 Kota Bengkulu in April-June, 2015. Data collection technique
Data collection techniques in this study are as follows.

1. Summary of the communication Data obtained through the students’ communication activities
   Gazette Observation filled by observer during the learning process takes place in the classroom.
2. Collaborative Activities Data obtained from the results of collaborative student Observation
   sheet filled by the observer during the learning takes place in the classroom.

Reflection
Reflection carried out with a discussion of reflection after the learning process. Participants in the
discussion of reflection is the model teacher and observer.

3. FINDING AND DISCUSSION

a. Research Result
The results obtained through the practice of the Open Lesson lesson study and reflection in
learning biology at SMPN 18 Bengkulu City is as follows.

Open Lesson 1
At an open lesson to-1 learning this topic is on Air Pollution. In the learning activities of students
aired pictures of air pollution and the consequences caused by air pollution. Students discuss the causes of
air pollution, as a result, and how to overcome them. At the end of the lesson students were told to create
a slogan on the prevention of air pollution.

This first lesson Open communication and collaborative activity is still active in student learning.
indicators:
1) In the discussion groups are less enthusiastic,
2) Discussion class is still passive,
3) Students at the moment discussing LDS seek answers to these questions by reading books.
4) Students are not able to issue its own opinion
5) The group presentation only read text without explaining
6) In class discussions, groups still tend to discuss themselves have not enthusiastic to listen or
   refute, approves, adding from other groups.
7) Students who respond are still dominant student-that's it (fixated on just one student)

Open Lesson 2
Open lesson on the 2nd of this topic is learning about Soil Pollution. In the video aired student
learning activities about soil contamination and conduct experiments on the causes of pollution of soil by
using soil, pesticides and earthworms. Students discuss the causes of pollution of soil, as a result, and how
to overcome them. At the end of learning students were told to create a slogan or picture on the
prevention of soil pollution.

Of the learning process, the open lesson this 2nd there is increased communication and collabora-
tive student activities, is seen from Observation Data Sheet filled out by observers as follows.

indicators:
1) Resti herawati observed Group I and II at the time of the discussion has been quite active, but in
   the second group there are students who are less active (2)
2) Oktarita: observing group IV and V, Yensi still passively, Tri ramadan actively conducting
   experiments and answered questions Students worksheet. Group V: Farhan skilled in the trials,
   and Reza Abiyumashi confused and passive learning,
3) Saruni VI group generally observed the students had dared to experiment and discussion.
4) In a class discussion had nothing to respond positively to the results of other groups
5) the response to the presentation of other groups there but still lacking.
Open Lesson 3
Learning topics on the open lesson 3 is about water contamination. Students learn by experimenting with existing observing fish in jars that have been filled regular water, water mixed with detergent and pesticides. Students also discussed the results of observation, and the result of efforts to prevent water pollution.
Open lesson on the 3rd of this there is an increased activity of students in communication and collaborative pembelajaran.
indicators:
1) Observer Kartikawati observing a group of 6 students were active group discussions, both attempted and answered questions mainly Agnes, Nathasa, and Inaya. In class discussion has been no response from the other groups during class berdiskusi.
2) Observer Resti Herath observe groups of 3 and 5: Group 3 during a group discussion at the time of the experiment all the group members are quite active only one of the less active the M.Bintang. Group 5 at the time of the experiment was very excited but at the time of presentation somewhat less enthusiasm.
3) Observer Oktarita Silitonga observing groups 1 and 2. Group 1 all group members are active in the discussion. Group 2 includes the groups most good and skilled and active in the classroom.
4) Student learning activities in general is increasing, and increasingly active group discussions.

Open Lesson 4
Open lesson on the 4th to the topic of learning about forest damage, learning activities is by showing a video and pictures of the destruction of forests. Students discuss the causes, consequences and prevention of forest destruction.
Improved communication and collaborative learning activities of students in the better.
indicators:
1) Observer Kartikawati observing groups 2 and 3 Presentation of the group is good enough, the existing Group 2 presentation is quite nice not too read, so many have responded to the group presentations such as a group 2, group 3 also responded
2) Observer Resti Herath observing groups 5 and 6 students actively pay attention to the video content and record the things that are important, with the use of video students are interested in (interests) Group 5 and 6 are already active in group discussions and class.
3) Observer Saruni observe groups of four during the discussion groups of students actively discuss the issues / problems that exist in the LDS
4) Observer Oktarita Silitonga observing group 1 and group discussion class goes well, each group renderers No comments / additions of other groups

b. Discussion
Application of lesson study activities at study Biology at SMPN 18 Kota Bengkulu can improve communication and collaborative learning activities of students, it can be seen in the learning process of students more active in every open lesson and can answer the questions that exist in communication and learning LDS. Activity collaborative students ranging from open lesson 1, to open lesson 4 increased student learning activities, for example, the response of participants when the discussion took place in the open lesson first is not visible, on the open lesson two activities class discussions are already active and to respond positively to the results of other groups, on the open third lesson learning activities of students is increasing, as well as group discussions increasingly active.Open fourth lesson the students had dared to give a rebuttal / response regarding the issues presented another group.
Students are used in the study group either in providing information or provide feedback during class discussions. Lesson study is able to improve the communication and cooperation of the students in learning. According to Masaki (2012) lesson study is able to improve dialogue and collaboration in learning. Lesson study in teaching can also give attention to think to solve the problem, in collaboration
with other parties, implementing activities and share expression (expression and sharing). Additionally, Hamalik (2010), also states that learning provides learning opportunities for students themselves, working through their activities memproleh knowledge and understanding of aspects of the behavior of others. If the preferred learning activities in learning, so that students’ learning is the basis for achieving the objectives and learning outcomes more adequate. Lesson Study is always focused on how to make students learn. Lesson Study focuses on improving that can be directly utilized in the given context. Each learning activity is a unit that harusdianalisis and improved so that repairs can be directly referred diterapkan. Lesson Study is a collaboration. By collaborating directly with each other that teachers can exchange ideas and give inputs to improve the quality of learning.

Lesson study, which stresses teamwork, either small group or class, students listen to each other to make more friends, so that students better understand the subject matter. Students ask questions, listen, accept other people's opinions, which is done when the discussion will be able to develop a cognitive understanding is getting better. With frequent students in conducting group discussions will foster independence in learning. According Johnson (2009), that the cooperation within the group can eliminate mental barriers due to limited experience. Collaboration and dialogue that occurred in the group will be able to eliminate the existing shortcomings in students, such as the fearfully issued his opinion. According to (Manabu Sato, 2014) lesson study that emphasizes collaborative learning can improve students' low academic ability, and also ensures high academic ability of students better. Apriani (no year) carried out based learning lesson study said that from the beginning of the learning students can understand the material well, there was an increase learning outcomes of students.

4. CONCLUSIONS
a. Conclusion
The conclusions derived from activities in the implementation of Lesson Study Biology lesson at SMPN 18 Kota Bengkulu as follows: Improvement in communication and collaborative learning activities of students in the lecture

b. Suggestions
Suggestions from this activity as follows:a. Need to be followed up for the next stage which is more involving all parties in the Ministry of Education and at school. b. Before the lesson study activities started at the beginning of the semester already there should be a separate meeting to discuss how the schedule, the model teacher and the observer, so that when the learning has begun is no longer a problem either schedule or the model teacher and observer.

5. REFERENCES