

**LESSON STUDY IN INTERNATIONAL CLASS OF BIOLOGY EDUCATION  
DEPARTMENT**

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**ABSTRACT**

Funded by the University of Indonesia Education competitive program, Biology Education Department opens an International Class for 4<sup>th</sup> semester students. Eighteen students were selected from 120 students for the International Class program. They are selected based on the TOEFL score. English is used as a formal language in lecturing activity as well as in media of teaching. In order to improve the quality of teaching learning activity in Biology Education Department, the Department held lesson study in one subject of International Class program, i.e. Learning and Biology Instruction. The program of lesson study mainly divided into three stages: preparation (plan), open lesson or implementation (do) and reflection (see). In preparation stage Lecturer selected topic of Learning Experience and preparing teaching media for the topic. The topic was selected aiming at giving more meaning to teacher students about learning experience focused on science process skill. Implementation or open lesson was held in a schedule of Learning and Biology Instruction. In the implementation stage students were involved in series activities of science process skill, such as observing, inferring (explaining observation), predicting and communicating. Students were asked to observe boxes with objects inside involving their senses. From their observation they had to do the inferring as well as predicting the object. The final step of activity was communicating their prediction to the class. In reflection stage of lesson study, observer claimed that the teaching method used in lecture was able to make student of biology education program in International Class were get involved in teaching learning activity. However they suggested that the communication skill among students in group need to be improved as not all students were get involved in group discussion. There was no difficulty for students as well as lecturer to use English as a formal language in teaching learning activity. In fact based on the questionnaire, students pointed out that they were more challenged by using English as a formal language of lecturing.

*Key Words: Lesson Study, International Class.*

**A. INTRODUCTION**

Teacher plays an important role in teaching learning process. Many argues that student are ready to learn when their teacher ready to teach (Kyriades, 2009). In order to improve teacher quality in conducting science, the program of lesson study has been introduced and implemented since 4 years ago. Lesson study was not only conducted in a level of high school but also in the level of higher education in UPI. Department of Math and Science Education has been adopted

the program of lesson study aiming at improving the quality of teaching and learning process in the department. One of lesson study program implementation was conducted in Biology Education Department.

The subject chosen for the program of lesson study in biology education department was learning and biology instruction in International Class. The subject of learning and biology instruction involves 2 credits and given for 4 semester students. In this subject students learn about science curriculum, strategy of teaching and learning including approach, methods and model of teaching as well study about student characteristics and learning theory. The class consisted of 5 parallel classes with each class is taken by team teaching lecturer consisted of 2 lecturer. The lesson study was carried out in one class i.e. international class.

The International Class is a new program in Biology Education Department. The program funded by competitive program grand from University of Indonesia Education Students of International class program were selected from 120 students based on TOEFL score rank. As many as 18 students were in the International Class program with highest TOEFL score is 550 and the lowest is 400. Teaching learning was delivered in English as well as teaching media which also use English as an official language.

The research question posed in the program of lesson study is: “How Lesson Study is implemented in Biology Education Department in a subject of learning and biology instruction aiming at improving the quality of teaching learning process in International Class as well as improving student involvement in teaching learning activity?”

## **B. THEORITICAL BACKGROUND**

Japan is the most successful country in mathematics and science teaching. One effort made by Japan government is doing lesson study in the level of elementary to high schools. *Lesson study* can be done in a various method, first is directly involving observers in teaching learning process. The open lesson of lesson study program in university is not only involving the lectures but also other staff member of the faculty such as Dean of faculty, Head of Department,

secretary of Department and lecturers for other subjects as well as parents. They come to the classroom to observe teaching learning process run by lecturer and reflect the teaching which focused on student activity. Second method of lesson study is video analysis. Observer make analysis on teaching learning process which is recorden in video tape that has been run by the lecturer. These two methods can be combined in order to have optimal result (Kumano, 20004), and it has been applied in Japan.

The research carried out by Yasushi and Shizuo (2002) in Japan results that *lesson study* can reveal some aspects of teaching process. Mathematics and Science teaching in Japan is more focused on student attainment to the concept, while in USA and Germany more focused on problem solving. Japan give more content in mathematics and science teaching compared with those two countries.

Qualitatively, mathematics teaching is considered in high level in Japan. Japanese teachers used various kind of table in their teaching twice to five times frequent than USA teachers. Blackboard frequently used by Japanese teachers. Only six percent of Japanese teacher use overhead projector in their teaching. This condition is contrast with American teacher who use more overhead projector in their teaching. In science teaching, lesson study in Japan reveal that strategy used could improve students' involvement in their teaching (Yasushi dan Shizuo, 2002)

*Lesson study* consists of three phase: plan, do and see. Plan activity initiated by problem identification which includes: selection to the topic, preparing content and media for teaching as well as strategy used in teaching. Deep analysis to the content is needed in order to get best alternative on the teaching which promotes optimal teaching. In this analysis stage lecture should pay attention the content caharacteristics, students' background, student prior knowledge and competence that will be developed by students. Apart from the content, lecturers in group discuss strategy for teaching based on their experience in lecturing the same content. Based on this experience, new strategy of teaching was selected which is predicted results in optimal teaching process. Strategy choosen is more focus on how student do their activity in their learning, motivate students to be more involve in their learning, and improve students interaction

among students as well as between student and lecturer. Finally, lecturer has to pay attention to student experience sharing.

In Implementation stage, the real teaching is conducted. Observers come into the classroom to observe teaching and learning process. As an observer, one has to gain complete picture of teaching process conducted by a model.

Reflection is carried out soon after the implementation of the teaching. This is aimed to get complete drawing of the teaching process as observer still remember causes happened in class, so they can give suggestion to improve the teaching.

## **B. METHODOLOGY**

The program of Lesson study mainly consisted in three stages, they are: preparation, open lesson (implementation) and reflection (Hendayana, 2000). In preparation stage, lecture in team teaching were selected the topics and prepared media for teaching and learning activity. The topic of learning experience was chosen as a topic given in lecturing activity. In implementation or open lesson the real teaching was conducted in real situation. Lecturers other than team were acted as an observer. As an observer they have to get complete picture of teaching learning process carried out by the model. Reflection was carried out soon after the teaching learning activity over as many people could pose the argument and suggestion based on the fact they see.

## **C. RESULT**

The topic of learning experience was selected in preparation stage aiming at giving more meaning to pre-service teacher students about learning experience which focused on science process skill. Before the open lesson was carried out, lecturers in team did the preparations, they are: (1) study the literature and the curriculum to determine model of teaching that meet with characteristics of subject learnt, (2) develop and prepare teaching material including media that will be used in teaching activity. Five boxes with at least 3 small objects inside were prepared for teaching activity and (3) determine schedule for open lesson.

The open lesson carried out on Monday at 07.00 to 08.40 as a schedule of Teaching and biology instruction subject. As many as five observers came to the open lesson including the Dean of Math and Science Faculty. Teaching learning activity was recorded by video cam. In teaching learning activity students were involved in series activities of science process skill, i.e. observing, inferring (explaining observation), predicting and communicating. Students were asked to observe boxes with objects inside involving their senses. From their observation they had to do the inferring as well as predicting the object. The final step of activity was communicating their prediction to the class.

Some of the activities can be seen in the picture below:

Student actively discuss the topic in group



Present result of discussion in front of classroom.



Write the inference based on observation

Based on observation of observers, there are some points pointed out in the reflection: (1) Students are actively get involved in the teaching learning process although the language used is English. The use of English as a formal language is not an obstacle for student to communicate actively among the students and between students and lecturer, (2) Lesson study gave positive impact to teaching learning process. The observers who came into the classroom motivate student to get involve actively in teaching learning process, (3) Choosing the appropriate method of teaching which involve students actively in teaching process could be use as good example for other subject, (4) Students involvement in group discussion and students skill in writing expression need improvement.

The activity of lesson study were also face many obstacle, limited in time for open lesson has made not many observers came to the open lesson, socialization of lesson study in the Faculty of Mathematics and Science Education also need to be improved.

#### **D. CONCLUSION**

Lesson study is useful activity as it could improve the quality of teaching learning process in math and science faculty, especially in Department of Biology Education. Students' involvement in open lesson could be used as a good example for other subject learnt in Biology Department. English as a formal language use in the classroom was not an obstacle for student and lecturer to communicate

actively in teaching learning activity, students' writing expression need to be improved.

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