Original Research Article

SIMAS ERI Learning Model Based on Lesson Study to Increase Student Motivation and Learning Outcomes

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ABSTRACT

The purpose of this study aimed at determining the SIMAS ERI (skimming-mindmapping-questioning-exploring-writing) model in increasing motivation (including: aspects of activeness, aspect of enthusiasm and aspect of cheerfulness) and students' learning outcome. This research is a classroom action research based lesson study conducted in two cycles at the State University of Malang, The subjects of this study were students participating in the course Teaching and Learning Strategies. Data were analyzed descriptively. The findings of the study described as follows: 1) Motivation of students from the aspect of activeness increased 47.6%, aspect enthusiasm increased 18.7% and aspect of cheerfulness has no increase, because the percentage in cycle 1 and cycle 2 are 100%. In average, learning motivation of students increased 26.7%. 2) Learning outcomes of students increased 6.6%.

Key Words: lesson study, classroom action research, motivation, SIMAS ERI.

1. INTRODUCTION

Activities of students in learning are one important element in determining the effectiveness of a learning (Williams, 2010). The effectiveness of the learning happens when students are actively engaged in a process of learning and organizing in discovering of information and knowledge (Hackathorna, Solomonb, Blankmeyer, Tennialb&Garczynkib, 2011).

Another factor that also affects the effectiveness of learning is the students' motivation to learn. Learning motivation is intrinsic motivating factor which become a motor for someone to keep learning. This is consistent with what was presented by Wieman (2013), that learning with motivation will be better than learning without motivation. The lack of motivation will affect the students' lack of understanding of the concepts of learning

Biology (Ekici, 2010; Bahri & Corebima, 2015). Hence, the lecturers should be creative in determining the learning model that can improve student learning motivation as to achieve the learning outcome (Elias & Rahman, 1995; Awan, R, Ghazala, N,&Anjum, N, 2011; Singh, 2011).

Universitas Negeri Malangas one Institutions of Education for Educators, is an institution which graduated teachers, so that students who are studying in teaching program at are expected to be able to become professional teachers. As students in learning activities, those who are studying also need motivation in order to get learning outcomes that support the goal to be professional teachers.

Based on observations in the class subjects SBM (Teaching and Learning Strategies) in Department of Biology, it obtained

information that cheerfulness and student involvement in the learning process was low. Students listened to the explanations' lecturers passively and were less enthusiastic in participating in learning. While active students in asking questions were very less even though lecturer gave students the opportunity to ask questions frequently. In certain discussions only a few students who paid attention and actively participated in discussions while most students just listened and there were some who speak for themselves. Therefore, students were difficult to master, and apply learning biology associated with the events that occurred during the simulation and microteaching practice so that students were difficult to solve the problems related to the learning process.

Base on observation and interviews were conducted with lecturers and students, showed information as follows: (1) the main constraints faced by the lecturers were students mostly have low learning motivation, and (2) student have not been able to find connections between the concepts learned and real life condition so that they cannot achieve a meaningful learning. The low activity of students in learning activities can be caused by low students' motivation.

The problem of low activity caused by low motivation of students can be caused by a learning model that was used in a long period of teaching and learning activities. Learning motivation of students which will be measured in this study includes aspects of the activeness, aspects of enthusiasm and aspect of cheerfulness, this measurement is intended to be able to answer students' motivation problems that arise during the observation.

One model of learning that is believed to increase students' motivation and learning outcomes is a learning model called SimasEri (skimming-mindmapping-questioning-exploring-writing). SIMAS ERI model was developed by Darmawan (2012), Darmawan, Zubaidah, Susilo&Suwono (2014, 2015, and 2016) based on the constructivism learning theory. Students learn actively to construct a new understanding based on their previous experiences. By constructing their own understanding students will be more motivated to actively participate in learning activities.

Stages in Simas Eri model is: (1) skimming: students read quickly to a material with a focus on the title, introduction, summary, content, conclusions, images, tables, and graphs (2) mind mapping: students create mind maps, based on the results skimming. Students make a group and yield authentic work at the stage of skimming and mind mapping. (3) Questioning: students independently create questions and then discuss in groups in order to obtain the appropriate questions. (4) Exploring: students review the material thoroughly to get answers of questions. (5) Writing: students write answers to the questions by reviewing and discussing it with the group.

This model is expected to create meaningful learning, where new information related to the relevant concepts that already exist with the cognitive structure of students (Cakir, 2008). According to Usher (2012) at least there are three reasons that can cause students motivated. First, students will be motivated if they feel that things are learned meaningful. Second, students will be motivated if they already have provisions to deal with subjects that will be received. Last, students will be motivated if the learning is presented in an interesting way. This is to involve students directly in the learning.

From the description mentioned above, the objectives to be achieved in this study are as follows: 1) increasing the motivation to learn through SimasEri model, 2) improving students' learning outcomes in Department of Biology, Universitas Negeri Malang through learning EriSimas.

2. MATERIALS AND METHODS

This study was a classroom action research based lesson study. The research was conducted at the Universitas Negeri Malang located atSemarang5, Malang – Indonesia, for two months i.e. November to December, 2011. The subject of this research was the students participating in the course of Teaching and Learning Strategies odd semester of the academic year 2011. The action research consisted of two lesson study cycles, each cycle consisted of 4 phases.

First phase is identification poblems to determine any students' problems by observation learning process in classroom. Second phase is plan to prepare lesson plan, evaluation tools, and materials. Those phase was done by met the lecturer to prepare: a) lesson plans and assessment process in accordance with the competencies of material topic, b) guidelines to make a mind map as well as the assessment criteria, c) questions to measure students' learning outcomes, d) observation sheets to observe teaching and learning activities on aspects of student observation sheet that is to determine students' and lecturers' motivation, e) teaching evaluation questionnaire sheets.Third phase is action phase was done by observing and recording data during learning activities take place in teaching learning activity that consist of learning media, management classroom principles, special teaching arts of lecturer, and teaching improvement. Forth phase is evaluate that consist of evaluation activity and give any feedbacks from triangulation data during the third phase.

The whole series of lesson study-based action research conducted in two cycles with 5 meetings, the time allocated for each meeting is 3 x 55 minutes. At the first cycle of lesson study was conducted in two meetings: 1st meeting on Thursday, October 20, 2011 (the material: learning media: trial, realia, video, game-simulation, computer, photographs, drawings) and 2nd meeting on Thursday, October 27, 2011 (lesson materials: learning cycle model and structure learning Biology: exploration - explanation - expansion - evaluation (4 E) and 5E model). The second cycle of lesson study is done in three meetings: 1st meeting on Thursday, November 3, 2011 (lesson materials: learning models, such as: project based learning, direct instruction), 2nd meeting on Thursday, November 10, 2011 (lesson materials: principles teaching improvement: the diagnosis of learning difficulties, teaching improvement, teaching enrichment) and the third meeting on Thursday, November 17, 2011 (lesson materials: draft biology learning strategies).

The observations were pursued during the learning activities in order to know the motivation of the students during the learning process. To determine the level of learning motivation of students was done by analyzing the data obtained from the observation sheet of students' motivation during the learning process. Data were taken of learning motivations include: aspects of the activeness by using six descriptors on the rubric, enthusiasm aspect by using four descriptors at rubric and the cheerfulness aspect with two descriptors on the rubric. Based on the observation sheet of student motivation to learn individually was determined motivation score classically.

Observations were also used to observe the activities of lecturers, recording data during an observation made by researchers, assisted by two observers using observation sheet instruments motivation of students and faculty activity observation sheet models. Reflection activity conducted by researchers and other observers to analyze the deficiencies and problems encountered then look for solutions to make an improvement in the next cycle.

3. RESULTS
3.1 Motivation of Student Learning in the aspect of cheerfulness, enthusiasm and cheerfulness

Research on student learning motivation was determined by three aspects of motivation they are: Activeness, enthusiasm and cheerfulness. Explanation of

results of research on three aspects of motivation in each cycle can be seen in Table 1. The percentage of learning motivation in students become quality

criteria in accordance with the translation in Table 2. The descriptors for aspects of motivation and student activity section in Table 3.

Table 1: Comparison of percentage of classical motivation, motivational aspect of activeness, enthusiasm aspect and the aspect of cheerfulness and learning outcomes of the first cycle to the second cycle.

	Aspek	Cycle 1	Cycle 2	Improvement
Motivation	Activenes	76,67%	93,3%	47,6%
	Enthusiasm	80 %	95 %	18,7%
	cheerfulness	100 %	100 %	0%
Classical Motivation		75 %	95 %	26,67%
Learning Outcome		79,91	85,18	6,6%

Tabel 2: Quality Criteria Level Students Learning Motivation

No	Percentage Level of Motivation of Student Learning	Quality Level of Motivation
1	81-100 %	Very Good
2	61-80 %	Good
3	41-60 %	Fair
4	21-40 %	Bad
5	0-20 %	Very Bad

Tabel 3: : Indicators Aspects of Motivation and Activities activeness, enthusiasm and cheerfulness Students

Aspect Motivation	Descriptor	Cycle 1		Cycle 2	
		1 (%)	2 (%)	1 (%)	2 (%)
1.Activeness	1. Willing to do all the duties of lecturers	100	100	100	100
	2. Doing tasks in accordance with the instructions provided lecturers.	100	100	100	100
	3. Willing to ask the professor if instructions are unclear.	18	36	63	72
	4. Willing to discuss and cooperate with friends in doing the task.	100	100	100	100
	5. Willing to record what they have learned.	100	100	100	100
	6. Willing to report the group's work without designated.	0	36	54	72
2.Enthusiasm	1. Willing to listen to the explanation given by the lecturer.	100	100	100	100
	2. Answering the questions asked by the lecturer or friends.	100	36	45	63
	3. Issuing opinions or ideas.	100	100	100	100
	4. Discussing with friends in doing the task	100	100	100	100
3.Cheerfulness	1. Beaming in learning characterized by facial sullen and often smiling.	100	100	100	100
	2. Do not sleepy during the learning activities signed by not often volatile and not put head on the table.	100	100	100	100

3.2 Increasing Students Learning Motivation through Simas Eri

Based on the results of data analysis are known that the percentage of students classical motivation in cycle 1 and cycle 2 increased. At first lesson study cycle, students' motivation is 75%. It is good quality students learning motivation. At secondlesson study cycle, it becomes 95% and the quality of students learning motivation is very good. Increasing student motivation to learn classically in students is 26.67%, based on the data shows that the students' learning motivation from the first meeting until the last meeting can be improved and maintained at good quality.

3.3 Improving Students' Learning Outcomes

The results showed that the learning outcomes of students at first lesson study cycle are 100% classical completeness as well as the results at secondlesson study with a level of classical completeness is 100%. The results of students learning has increased an average value of cycle 1 (79.91) to cycle 2 (85.18), with the enhanced of learning outcome of 6.6%.

4. DISCUSSION
4.1 Improvement of Students Learning Motivation on Activeness aspect, enthusiasm aspect and cheerfulness aspect.

The results showed that the motivational aspect of activeness increased with the application of Simas Erimodel which can be seen from the students will to do the work, actively ask to the lecturers asking, do assignments, discuss with members of the group, as well as report the work of group without appointed by the

lecturer. According Thosalis & Nakkula (2012) students' learning motivation is characterized by completing task and working intensively to complete the task of lecturers. Thus, the students who have motivation to learn have the activeness in participating in learning activities is high.

In enthusiasm aspect, it shows that more than 50% of students have enthusiasm in learning so such as listening to the lecturer, issuing opinions and discussions with members of the group. Thosalis, et all.,(2012) explained that students who have high motivation pay more attention to the learning activities.

Most of the students at the beginning of learning have a lack of motivation, so that they do not learn the lessons first before following learning activities. In consequence, they hesitate to answer the questions asked by the lecturer. Although the lecture has given the task to create a mindmap at the previous meeting, the majority of mindmap created is still incomplete and perfunctory impressed. In addition to making individual mind mapping there are some students who just imitate their classmates' mindmap. As the result, their preparation for participating in learning activities is less. In the next meeting, the students have the motivation to prepare the material before following subjects so that they do not doubt in answering questions lecturers or friends in the discussion.

There are two indicator aspects of the cheerfulness that can be used to observe the student's motivation in the rubric, i.e.: (1) the students have beam face and often smile, (2) they were not sleepy during the learning activities that known by never yawn and do not put theirhead on the table. In accordance that described by Ryan & Deci (2000) motivation is necessary in learning and it contained within the student which is characterized by bearn face and often smileduring learning process. In addition Thosalis et al., (2012) also explained that students who have high motivation to learn are reflected by feeling

happy, having confidence and toughing the existing learning situations.

When the researchers applied SimasEri model, there were no student sleepy. This is because students are required to be active in following learning, for example, in a discussion group to make mind mapping, making observations, as well as the presentation of the mind map. In addition, students are also motivated to compete among groups. Students are also pleased with the method applied by lecturers such as quizzes and games. It is supported from the students'questionnaire stating 100% strongly agree that the lecture teaching and learning strategies by using SimasErimodel are very interesting and not boring.

4.2 Improvement of Student Learning Motivation through SimasEri

The increasing of learning motivation is determined by the lecturer role model in determining the methods and strategies in implementing the SimasEri model. In order to be actively involved, teachers should master the basic concepts and competencies that will be delivered to students and design a lesson by linking concepts or theory by considering the experience of students in their living environment. In carrying out teaching, teachers should encourage students to relate what is being studied with the knowledge or experiences that have been previously owned and relate what is learned by the phenomenon of real life situation. In addition, students are encouraged to build a conclusion which is the students' understanding of the concept or theory being studied (Dunlosky, Katherine, Rawson, Elizabeth, Marsh, Mitcheel, Nathan, Daniel & Willingham, 2013).

The increasing of learning motivation can be caused by several things done by the lecturers during learning process. Dunlosky et al., (2013) also provides an opinion that students' learning motivation can be improved by pursuing fun learning, very interesting atmosphere causes

the learning process becomes effective or emotional significance for the students so that the lesson material will be easily understood and remembered.

Simas Eri model has syntax in which it searches for keywords in the material and constructs a mind map in the classroom so that the atmosphere is very cheerful and highly motivated students to follow the lessons. In syntax skimming and mind mapping, discussion happens in the cooperative students' work. This step is able to provide an opportunity for students to help each other and respect each others' opinions. Working cooperatively, according to Ho& Boo (2007) were able to develop a sense of self-confidence of students. The self-confidence comes at a time when students are thinking along the discussion.

Questioning, exploring and writing are stages of Simas Eric model which requires students to work in groups. This condition allows the students work together and are responsible for a friend of the group so that they can teach each other. Moreover, Ho et al., (2007) stated that the cooperative strategy is to develop relationships between groups, accept of classmates who were weak in the academic field, and increase self-esteem of students. Thus, it encourages the growth of mutual learning awareness among students.

At the stage of questioning students are exposed to search a query, by providing opportunities for students to inquire after they do the stages of mind mapping. This is an effort to train students' confidence in asking questions. Questioning that they arise then it will be solved by exploring and will be their responsibility at the stage of writing. The increasing of motivation at this stage SimasEri model appears because students pursue the learning achievement. Achievements that appear on Simas Eri model is to be the best in making a mindmap, creating questions and answering the most correct questions. While the highest score is announced in front of the class, the students will feel satisfaction of accomplishment they get. This increase is

due to the reinforcement and rewards given by the teacher. The award is given by the teacher to the success group. The successful of group can influence students 'motivation for the award given by the teacher will lead to a satisfaction in the students so that it stimulates and increases students' motivation. Maag (2001) states there are three objectives of reinforcement such as follows: (a) increasing the students' attention towards learning, (b) stimulating and increasing the motivation to learn, (c) improving learning and foster productive behavior.

According to Deci & Ryan (2001) awards are very effective to motivate the students in doing either regular task or tasks that take place continuously. Deci et al., (2001) also argued that the award in the form of verbal expression of the activities carried out in completing students tasks have a positive influence on the students' learning motivation. Henderlog & Lepper (2002) verbal statement against good behavior or work or student learning outcomes is the simplest and most effective way to improve students' motivation to get good learning outcomes.

The award given by teacher applied in the learning has an effect on student motivation, it because learning will take place well and learning objectives can be achieved if the students enjoy with the learning in the classroom. For example, students feel proud of the results of their work, that they are really capable and master lessons given by a teacher and they get a gift from the teacher.

4.3 Improvement of Student Learning Outcomes

SimasEri model can improve student learning outcomes as much as 6.6% from cycle 1 to cycle 2. The fact of this learning outcome is the role model of learning SimasEri. Simas Eri model can guide students to find a concept not directly notify concept (Darmawan et al., 2016). This is in accordance with the nature of a constructivist approach that students

develop their own concepts on the basis of prior knowledge possessed. The inquiry of concept by the students, will make the students are motivated to learn and the concept gained more meaningful so that the learning outcomes will increase.

Eri Simas learning model proved effectively in improving student learning outcomes of SMAN 5 Malang (Darmawan, 2012), a class taught by this model has a higher learning outcome of 83.5% over the students who were taught by conventional learning. Another research by Sumiati, Mahanal, and Sunarmi (2016) found the influences of Simas Eric model towardstudents' cognitivelearning outcomes of Biologyat class XI in SMAN 1 Malang. Furthermore, this model is also able to improve critical thinking skills of high school students in Malang (Darmawan et al., 2016).

Simas Eri model in the learning activities provides habituation learning which allows students empower their thinking skills such as: making a question, answering and discussing answers in cooperative work, encouraging students to ask questions and making inquiries are ways to engage students actively in higher level thinking (Duron, Barbara and Wendy, 2006). The stage of discussions also allows the process of argumentation, according to Lau (2003) discussion is a statement which contains summaries of exposure, premise or assumption of the argument. In making a good argument, the students should be able to draw up the premise and reason to accept the conclusion.

Simas Eri model also contains cooperative work. Students conduct cooperative work in small groups to understand and solve the problems. It allows students to discuss in which it has an impact on the empowerment of critical thinking skills. According to Slavin (2009) one of the basic elements of cooperative learning is an existing of learning social skills regarding leadership learning, decision making, trust building, communication, and handling problems collectively. In cooperative work,

it gives students the opportunity to think along with peer discussions so it makes the process of thinking to be open for all students.

5. CONCLUSION

Simas Eri model (skimming-mindmapping-questioning-exploring-writing) can improve students' motivation and learning outcomes during both of lesson study cycles. In addition, SimasErimodel is able to enhanced students' motivation that consist of activeness, enthusiasm, and cheerfullness aspects.

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