

# Increasing Motivation and Science Learning Achievement Through the Implementation of Outdoor Cooperative Learning Model in Class VIII SMP 2 Banguntapan Academic Year 2015/2016

Adi Cahyono, Prof. Dr. Samsi Haryanto, M. Pd , FX. Sudarsono, MA, Ph. D  
Graduate Program Sarjanawiyata Tamansiswa University Yogyakarta Indonesia

## Abstract

Science can be a tool for studying the human and the natural surroundings, both directly and indirectly. The learning process can directly develop the competence to be able to study nature scientifically. Science education is hoped to be more inquiry that helps students gain experience and understand the natural surroundings. This study aims to reveal whether the implementation of outdoor cooperative learning model can improve the learning motivation and science achievement of students of SMP 2 Banguntapan academic year 2015/2016. This study is also used to determine the appropriate action patterns in implementing outdoor cooperative learning model on science lesson.

This research is a classroom action research, which puts emphasis on efforts to change the real conditions that exist now towards the expected conditions by four stages: (1) planning, (2) implementation, (3) observation, and (4) reflection. Data were collected through four techniques, namely: test, questionnaires, interviews and classroom observation.

The result of the research revealed that the achievement improves from 62.5 on the pre-cycle into 71.56 in cycle 1 and increased to 90.31 in cycle 2. Based on t-test, the achievement between pre cycle to cycle 1 got significance of 0.012, between cycle 1 to cycle 2 got significance of 0.000, between the pre cycle to cycle 2 got significance of 0.000. All show less than 0.05, a significant improvement. Motivation questionnaire result shows that no student has low motivation, 15.625% of the students have medium motivation and 84.375% of students have high motivation, so this study is considered successful in improving students' motivation. Based on data from the achievement in the first cycle to the second cycle that is very significant and the students' satisfaction on learning activities outside the classroom, it can be taken a precise time ratio for the lesson period: preliminary learning : learning outside the classroom in groups (7-8 children at a different place for each group) : a group discussion in the class : closing = 1: 4: 2: 1

## A. Preliminary

Permendiknas 22 of 2006 on the Content Standards states that Natural Sciences (IPA) related to the natural way of finding out about a systematic manner, so the Natural Sciences is not only a mastery of knowledge in the form of a collection of facts, concepts, or principles alone but is also a process of discovery. Science subjects can be as a means for studying human and natural surroundings both directly and indirectly. The learning process can directly develop the competence to be able to study nature scientifically. Science education is expected to be more inquiry that helps students gain experience and understand the natural surroundings. Based on this matter, it is necessary to use appropriate learning model.

Media for learning science is found at school and at home, but the use of media should be enhanced to support the subject matter contextually or to use Natural Sciences in everyday life. In learning science, using a contextual media that is found all around us is better because it is more real and directly can use the knowledge directly. Giving the task of observation in a neighborhood needs to be done to investigate and support the knowledge learned. Therefore, outdoor cooperative learning model is indispensable to learning science by using the environment as a contextual medium.

Based on the identification of the problem, then the problem can be formulated as follows: Does the implementation of outdoor cooperative learning model can improve the learning motivation and science achievement for students of SMP 2 Banguntapan academic years 2015/2016 and if the model can how is the appropriate patterns of action to improve them..

The purpose of this study aims to determine whether the implementation of outdoor cooperative learning model can improve the learning motivation and science achievement for students of SMP 2 Banguntapan academic year 2015/2016 and to determine the appropriate action patterns.

## B. Reader Review

Definition of learning can be interpreted as changes in behavior that are relatively settled as experience and training (Logan in Sia Tjundjing, 2001: 70). Learning can be said to be successful if there is a change in the student, but not all changes in behavior can be said so, since changes in behavior as a result of learning

have typical characteristics of embodiment (Muhbidin Syah, 2000: 116). Learning is a change in behavior, as a result of interaction with the environment (Ali Muhammad, 2004: 14). Learning means interacting with the environment intentionally or not, then learning is said to be successful if there is a change in the individual. On the contrary, if there is no change in the individual, then learning does not succeed.

Achievement is the result of an activity that has been done, created, either individually or in groups (Djamarah, 2011: 19)

Learning outcomes are the result of an interaction of learning acts or the act of teaching from the teacher's side, teaching action ended with the evaluation process of the students' learning outcomes, learning outcomes is the culmination of the learning process (Dimiyati and Mudjiono, 2006: 3).

Based on the description above, it can be said that the student's achievement of learning by involving all its potential is achieved after the student's learning activities. The achievement of learning outcomes can be known by organizing test assessment of learning outcomes. Assessment is conducted to know the extent to which the student has successfully followed the lessons given by the teacher. In addition, teachers can determine the extent to which the teachers conduct the teaching and learning at school. Along with student achievement, it can be said that natural science learning achievement is the value obtained after involving all students' potential directly / actively either cognitive (knowledge), affective (attitude) or psychomotor (skills) in teaching and learning science.

According to Slameto (2003: 54-72) many kinds of factors that affect the learning achievement, but they can be classified into two, namely:

1. *Internal* factors, i.e. factors that exist in individual who is learning, consists of:
  - a. Physical factors (health and disability)
  - b. Psychological factors (intelligence, attention, interests, talents, motives, maturity and readiness)
  - c. fatigue
2. *External* factors, i.e. factors come from outside the individual, including:
  - a. Family factors (how parents educate, relations between members of the family, the house, the family's economic situation, parents' understanding, and cultural background)
  - b. School factors (teachers' teaching methods, curriculum, teachers' relationships with students, students' relationships with students, school discipline, teaching tools, school time, learning above the standard, the state of the building, the methods of learning and homework)
  - c. Community factors (the students' activities in society, mass media, hang-out friends, and public life).

In learning, motivation is necessary, because someone who is not motivated in learning will not be possible to do learning activities.

Motivation is promoter that changes someone's energy into the real activity to reach the specific purposes. In the learning process, motivation is needed because someone who does not have it will not possible in conducting the learning activity (Djamarah, 2011: 114).

According to Hamzah B. Uno (2006: 23) indicators of motivation are classified as follows:

1. The desires and wishes of success
2. The encouragement and the need to learn
3. The hopes and ideals of the future
4. The rewards in learning
5. The interest in learning activities
6. The existence of a conducive learning environment as to allow a student can learn well

Students who always pay attention to the material given are not a problem for teachers because there is intrinsic motivation inside. The task of the teacher is to motivate learners so that he wants to learn.

According to Winkel (1999: 100) there are several strategies that can be used by teachers to regenerate or increase students' motivation as follows:

1. Explaining the purpose of learning to the learners.
2. Gift
3. Rivals or competition
4. Praise
5. Punishment
6. Giving maximum attention to the learners.
7. Forming good study habits.
8. Helping students' learning difficulties
9. Using a variety of methods.
10. Using the good and appropriate media that is suitable for the learning objectives

Outdoor cooperative learning model can be interpreted as a model of learning outside the classroom. Most of the activities in the learning process are done outside the classroom. Natural Science is related to find out a systematic nature, so Natural Sciences is not only a mastery of knowledge in the form

of a collection of facts, concepts, or principles but it is a process of discovery. Science education is expected to become a vehicle for students to learn about themselves and the environment, as well as prospects for further development in applying it in our daily lives. The learning process emphasizes providing direct experience to develop competence in order to explore and understand scientific nature. Science education is directed to inquiring and doing so they can help learners acquire a deeper understanding of the surrounding nature.

Outdoor learning is one way of how we improve children's learning capacity. Children can learn deeper through the objects that are faced rather than if they learn in the classroom that have many limitations. Furthermore, learning outside the classroom can help children to apply knowledge (Yuni Wibowo, 2010: 2).

Outdoor learning as an alternative vision of education that should be seen as essentially different from traditional schooling, rather than an extension of schools. The freeing of outdoor education centres from the structural boundaries imposed by the national curriculum and government curriculum enhancement projects, whilst reducing or removing the demands for centres to continually investigate the impact of their work

Outdoor learning provides a boost feeling of freedom for students as the result of the unlimited thought of the students by the walls of the classroom. Husamah (2013: 19) revealed that outdoor learning is a method of learning science by doing adventure in the neighborhood, accompanied by careful observation that the results are recorded in the observation worksheets.

By applying outdoor learning, students will feel glad, and will be more cheerful because they get direct experiences. So their motivation will be arising. Providing motivation and the use of outdoor cooperative learning model in science subjects will improve student' achievement in the subjects.

### C. Research Methodology

This research is a classroom action research. According Suharsimi Arikunto (2008: 18) there are four stages in the action research namely: (1) planning, (2) implementation, (3) observation, and (4) reflection.

The study was conducted at the end of the first semester and the beginning of the second semester of 2015/2016 in the SMP 2 Banguntapan, Jln Karang Sari, Banguntapan Bantul in VIII D class.

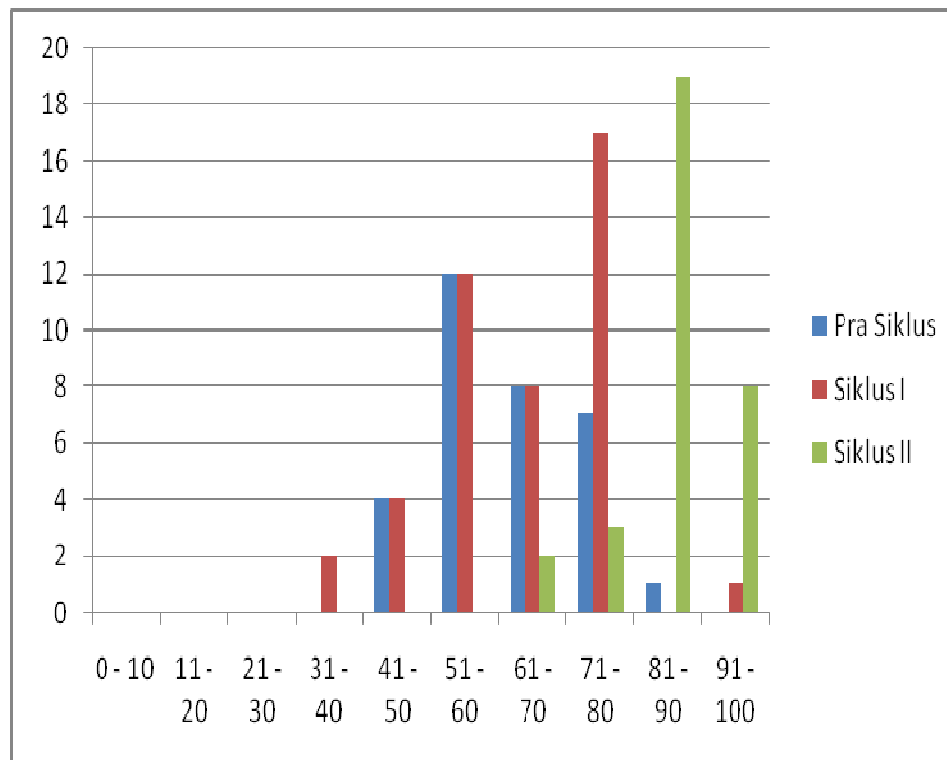
The data is taken by using test results, questionnaires, observations and interviews. The written test is conducted to reveal the students' mastery of the subject. It also reveals the students' learning achievement in cycle 1 and so on. Questionnaire used to know the student's motivation. It consists of 6 indicator and covered 24 items: 12 items are positive statement and 12 items negative statement. Data analysis technique uses T test with the factor analysis as the construct validity test. Classroom observation is done by the collaborator to get data on the teacher' and students' behavior during the learning process. Interview is conducted for students who have high and low motivation. The target is know their desire on the outdoor learning activities.

To test validity of motivation questionnaire is conducted by using content and construct validity. Construct validity is done by applying factor analysis. Factor analysis is a technique of analysis to identify the variables or factors that have a certain relationship patterns in a group of variables. Factor analysis was used to identify a number of factors that have the same character. The T test used in this study was paired-sample t test, because the data of learning achievements was acquired in one class only. Paired-sample T test data is compared to the average of two variables for a single sample group. This test calculates the difference between the two variables for each case and examines whether the average difference is zero. Procedure for paired-samples t test was used to test the hypothesis that there is no difference between the two variables. Data can come from two dimensions of the same subject or the size of the subject partner. This test is to test the average of Achievement from the pre cycle to cycle 1, cycle 1 to cycle 2 and pre-cycle to cycle 2. This analysis uses the Pairwise Correlation Technique (Paired - Samples T Test).

### D. Results and Discussion

The first cycle was conducted in November 2015 with the material "Motion in Plants". In the next meeting, students are given 10 multiple choice items to measure the mastery of the material "Motion in Plants". The second cycle was held for one week in January 2016 (one meeting). Cycle II was conducted at the beginning of the second semester academic year 2015/2016.

Based on data of the student achievement from pre-cycle, cycle I and II, it can be presented in the following graph:

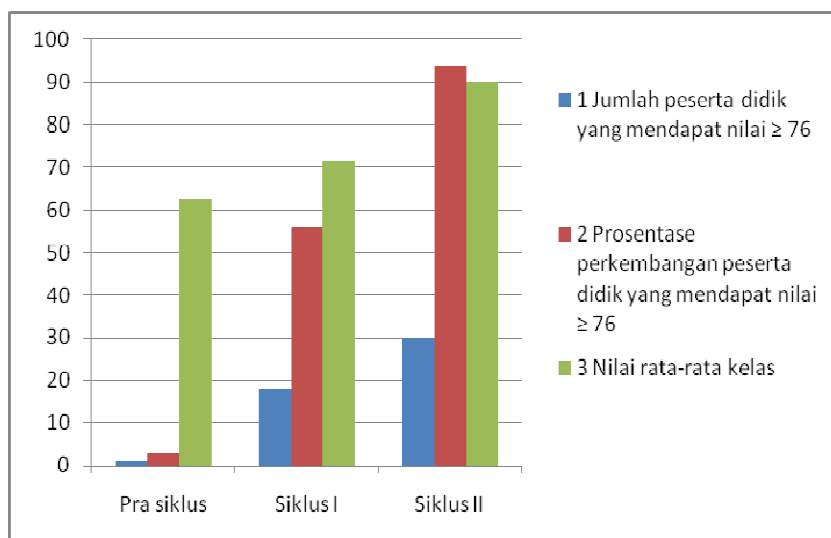


From the above results it is obtained an average increase from 62.5 in pre-cycle into 71.56 in the first cycle, and increased to 90.31 in the second cycle. There is an increase of pre-cycle to the first cycle; there is also an increase from the first cycle to the second cycle. To test whether the increase is significant, this result is then tested with paired-samples t test. The t-test was applied to the data in pre-cycle to the first cycle, the first cycle to the second cycle, and pre-cycle to the second cycle by using SPSS 16. The results of the paired-sample T test data are as follows:

Comparison of learning achievement of pre-cycle to the first cycle, the first cycle to the second cycle, and pre-cycle to the second cycle with samples Paired T test showed that the results that:

1. The learning achievement between pre cycle to cycle I gains 0,012 of significance, it is less than 0.05, a significant improvement.
2. The learning achievement between the first cycle to the second cycle gains 0.000 of significance, it is less than 0.05, a significant improvement.
3. The learning achievement between pre cycle to cycle II gains 0.000 of significance, it is less than 0.05, a significant improvement.

Based on the t test results mentioned above, a significant increase occurs from the pre-cycle, the first cycle and the second cycle. The data increase in students' achievement in this study can be summarized in the following graph:



Graph of Students' Ability

The graph above shows that learning by using outdoor cooperative learning model in Cycle I and Cycle II has increased students' achievement, because the average value of the class as well as the percentage of students who score  $\geq 76$  has been reached in general.

Conventional learning which is conducted by the teacher before the action needs to be modified. So the next learning activities will bring the expected result. The modification is changing from conventional teaching into contextual learning by using the environment as an object lesson.

The collaborator observed the teacher implementing the outdoor cooperative learning model during the lesson. It is including the preliminary activities, delivering basic competencies and learning indicators, giving apperceptions questions about previous material. The result of the observation suggests that the activities of teacher in the use of outdoor cooperative learning model improve significantly.

The observation on the students shows the activities of the students both individually and as a group. It can be described as follows: the activities of students have increased during the lesson. It can be seen from their behavior. All students attend and participate in learning activities completely, enthusiastically, and joyfully. The learning outside the classroom brings happiness to the students. It indicates that there is strong motivation to learn.

The data from the questionnaire shows that no student has low motivation, 15.625% of the students have medium motivation and 84.375% of students have high motivation. Because more than 80% students are highly motivated, so this research is considered successful in improving students' motivation. Based on the acquisition of the score indicates that after the process of learning using outdoor cooperative learning model learners have a high motivation to learn.

The results of the interviews revealed that there are students who feel happy and satisfied with outdoor activities. Some students said that they wanted more than outdoor activities. They want to go sightseeing or study tour while learning science.

Based on the successful learning achievement, from the first cycle to the second cycle, and the students' satisfaction on learning activities, it can be concluded the appropriate system for outdoor cooperative learning model as follows: the lesson period is allotted as follows: 10 minutes for introduction, 40 minutes for learning outside the classroom, 20 minutes for group discussions in the classroom, and 10 minutes for closing the lesson. The class is divided into some groups (a group of 7 or 8). The location of the observation is different for each group.

#### E. Conclusion

Based on the result of this research, it can be concluded that the implementation of outdoor cooperative learning model, with an appropriate system, can significantly increase learning motivation and science achievement of students of SMP 2 Banguntapan academic year 2015/2016. In general, it can be concluded that the implementation of outdoor cooperative learning model, with an appropriate time ratio, can increase learning motivation and science achievement. The learning outside the classroom brings happiness to the students. The time ratio for the lesson period is preliminary learning : learning outside the classroom in groups (7-8 children at a different place for each group) : a group discussion in the class : closing = 1: 4: 2: 1

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