

Utilization of the Mangrove Forest as a Learning Source to Improve an Understanding of Concepts and Environmental Awareness

(Experimental Quasy Study of Mangrove Ecotourism Karangsong for Student Participants at SMA Negeri 1 Indramayu)

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Abstract—The background of this study is the importance of establishing and understanding the behavior of learners in the learning invites students to learn resources directly. Mangrove forests one of which can be used as a learning resource. The purpose of this study was to determine the differences in test understanding the concept of class experiments that utilize mangrove forests as a source of learning and classroom control who use media visual as a learning resource in the control class. To determine differences in the level of environmental awareness in the experimental class with a grade control. And to determine the relationship between understanding the concepts and environmental awareness in the experimental class and control class. In this study, the method used is quasi-experimental. This research was conducted in SMA Negeri 1 Indramayu in April 2016. The research subject is students of class XI IPS 1 and XI IPS 2 SMA Negeri 1 Indramayu. The instrument used was the result of tests pretest and posttest and questionnaires understanding of the concept of environmental concern. Data were analyzed using statistical methods 't' test (different test), to test the hypothesis of the research carried out consultations on a distribution table "t" at the 5% significance level and regression test to know the relationship between the understanding of concepts and environmental awareness variable. The results showed that there are differences in understanding of the concept test experimental class and control class. By hypothesis data using statistical t-test result $t = 4.05 > \text{table} = 1.66$. Then H_0 was rejected and H_a was accepted which means that there were differences in the test results of the experimental class understanding of concepts that utilize mangrove forests as a source of learning and a control class that uses visual media. There are differences in the

level of environmental awareness among experimental class control class by a margin of 1.8% difference, and also there is a relationship between the understanding of concepts and environmental awareness with correlation value of 20,4% in the experimental group and 8,8% in the control class. The implications of this study contribute as a source of learning directly using the contextual environment and invites students to learn directly.

Keywords—Mangrove Forest, learning resources, concept training, environmental concern.

I. INTRODUCTION

Learning the environment is closely related to the use and preservation of the environment. Magasing (2013:7) argues that the environment which can be used as a learning resource consist of social environment and natural environment. The social environment can be used to learn and develop the social sciences and humanities, while the natural environment can be used to learn about natural phenomena. Therefore, that science can generate both the awareness of learners to love nature and want to participate in conserving nature.

The learners also know the local environment condition and being smart societies who maintain their environment. Hence, it will be required a great effort to establish the behavior of environmental care in societies. One of them is to provide an understanding concept of the learners that can be done through learning process or education in school. One is to

provide an understanding of the concept to the learners who can be done through education in school. The learners can give information to the local societies in order to contribute to protecting the environment. Geography is one of the subjects that provide the information about learning science in the classroom. The learning process is not only getting the answer of the question, but also the process of doing a discussion continuously about physical environment directly.

The utilization of mangrove forests as a source of learning includes an understanding of environmental concerns. It deals with the way how the learners are motivated to learn and understand the importance of the environment that they inhabit. Aktamis research result (2011), shows that the learners who are in the rural areas have a higher level of concern for the environment than the learners who are in urban areas.

The knowledge, understanding and concerning attitude about mangrove will give a positive impact on the environment, because it will reduce the damage that has occurred. The learners can make the mangrove forest as an environmental learning resource and learning environment. They can use their knowledge about the environment to understand natural phenomena that occurred around the environment, so that the purpose of the learning process can be met and it can make the learners more care about the environment.

Karangsong mangrove forest has not been widely used by Geography's teacher as a source of learning Geography's subject. Unfortunately, the potential of mangroves is not used for the resource in learning. There are a lot of potential in Karangsong mangrove that can be learned by the students, one of them is to make the learners get direct experience.

The teacher is one person who can transfer knowledge and give a new experience for their students. Teachers also help the students to explore their ability and creativity in learning process. The use of direct learning resources will be able to develop the knowledge of learners, motivate their awareness of the environment and their understanding of learning science.

II. METHOD

The research used quasi-experiment by as the method. This research was conducted at SMA Negeri 1 Indramayu by taking a social class XI IPS 1. The total of the students were 32 persons as an experimental class and the 33 students of XI IPS 2 as a control group. The experimental class field trip was done with the direct learning method in the field, while the control class was using media understanding of concept and attitudes regarding environmental care learners conducted through a questionnaire.

III. FINDING AND DISCUSSION

A. Result Experiment comprehension of class concept and class control

This research describes the result test of comprehension concept and the questionnaire about environmental care by the students from the utilization of the mangrove as a source of learning in the experimental class. The concept of

comprehension test performed before and after learning in the experiment classroom which is conducted by 32 students. The data from pretest and posttest experimental comprehension of class concept can be seen in the table.

TABLE I. COMPARISON OF RESULTS OF PRETEST AND POSTTEST CONCEPT UNDERSTANDING CLASS EXPERIMENT

| Experiment | N | Min value | Max value | Mean | Gain | Information |
|------------|----|-----------|-----------|------|-------|-------------|
| Pretest | 32 | 45 | 95 | 74.8 | 0.118 | low |
| Posttest | 32 | 50 | 100 | 77.8 | | |

Source: the data processing (2016)

In the experimental class test data conceptual comprehension of students before and after being treated with the value at an average yield of 74.8 pretests with a minimum value of 45 and a maximum value of 100, while, the average yield posttest 77.8 with a minimum value of 50 and a maximum value of 100. It showed that the data increased the level in comprehension concept of students in the experimental class before and after treatment by 2.5% to 0.118 Gain value, it meant that changing in comprehension concept of experimental classes after treatment is still considered low.

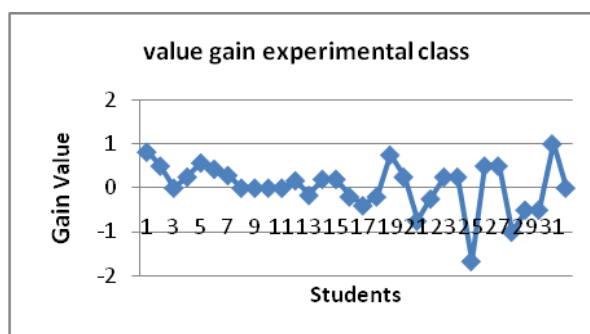
TABLE II. COMPARISON OF PRETEST AND POST TEST RESULTS OF CONCEPT UNDERSTANDING CONTROL CLASSROOM

| Control | N | Min Value | Max value | Mean | Gain | Information |
|----------|----|-----------|-----------|------|-------|-------------|
| Pretest | 33 | 40 | 95 | 73.1 | 0.042 | low |
| Posttest | 33 | 45 | 100 | 74.2 | | |

Source: the data processing (2016)

The results of the table above show that there are differences in the control class test of data conceptual comprehension of students before and after being treated. With an average value of data pretest 73.18, the minimum value of 40 and a maximum value of 95. Meanwhile, the average value of the posttest was 74.12 with a minimum value of 45 and a maximum value of 100. There was no increasing in the level of understanding of the concept of learners in control of the class before and after treatment with 0.042 Gain value, meaning that changes in understanding the concept of control class after treatment categorized as low.

Value Gain understanding of the concept of the experimental class can be seen in the graph below.



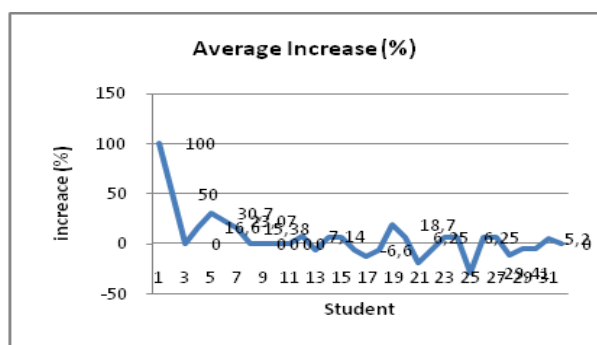
Source: the data processing (2016)

Fig. 1. Gain Value of Understanding Experimental Class Concept

Based Interpretation category gain criteria which is normalized, it got the interpretation of the gain is $g > 0.7$ high category as many as three people. $0.3 \leq g \leq 0.7$ category were as many as five people and low category $0.00 < g < 0.30$ as many as 25 people.

The conclusion of the Gain value above that utilizing mangrove forests as a source of learning to improve understanding of the concept has not been a positive influence on the students. It is seen from the results of gain around 75% of students are still low.

The description of improving comprehension concept of classes that utilize mangrove forests as a source of learning with field trips method had shown in the chart below.



Source: the data processing (2016)

Fig. 2. Improved understanding of the concept is based on the level of the percentage increase in Class Experiments

From the chart above can be seen that the average percentage increase in the control group was 6%, the highest increase of 87.5% by one person, while the lowest increase of 16 people. The most learners control class has not increased understanding of the concept after learning by using visual media.

B. The Level Concern Differences between Environmental Class and Experimental Control

Total score of the questionnaire data collection of the environmental concern experimental class is 1286. Therefore, the percentage of environmental care experimental class, namely $1286: 1600 \times 100\% = 80.4\%$. While environmental concerns in control classes using visual media as a source of learning, total score of questionnaire data collection of environmental awareness in the control class obtained in total, namely 1297. Hence, the percentage of environmental awareness in the control class with the number of 33 respondents was $1297: 1650 \times 100\% = 78.6$. Based on these percentages, it can be concluded that the level of environmental awareness in the control class is 78.6%.

From the results of the second questionnaire data about the classroom environment concern the experimental class amounted to 80.4% and 78.6% of the control class. It can be

concluded that there is a difference in attitude between these two classes of concern to the percentage difference is 1.8%.

C. The Relationship between Comprehension Concept and Environmental Awareness in the Experiment class and Control Class.

After the researcher calculates the data by using SPSS 16.0 software, it showed that the result of software on the posttest results of experimental class and control class after being given treatment is calculated by the calculation of environmental awareness questionnaire. The result of the experimental class which is obtained with the acquisition value of the correlation is 0.204 or 20.4% means that the variance of understanding of the concept of 20.4% and 79.6% were influenced by other variables outside of this study. Therefore, the understanding of concepts and environmental awareness shows linear linearity.

Moreover, the control class posttest result showed that correlation values (R-square) 0.088 or 8.8%, it means that the proportion of the variance of understanding of the concept by 8.8%, while 81.2% is influenced by other variables outside of this study. This value describes that the relationship between the two variables of the study there is a relationship. Therefore, there is a relationship of understanding concepts and environmental awareness in the experimental class and control class with the proportion of different values.

IV. CONCLUSIONS AND SUGGESTIONS

The Utilization of the mangrove forests as a source of learning in learning geography provides a real experience and direct learning to students in listening to the material for the environment. Therefore, the students understand the learning material in accordance with the purpose of learning through action, experience for myself and observe what I learned.

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