



OUTDOOR BASED ENVIRONMENTAL EDUCATION LEARNING AND ITS EFFECT IN CARING ATTITUDE TOWARD ENVIRONMENT

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ABSTRACT

A study of outdoor learning based on the instructions on environmental education for prospective of the elementary school teachers was carried out to encourage them to improve their view on the environmental literacy in taking care of school environment. The research method used is based on the research and development method. From the research, we can find that: (1) the improvement of concept mastery in the environmental education was better than the regular class, (2) the performance and attitude of the prospective teachers of the elementary school was in a good category (3) reviews their ability in implementing outdoor based instruction was in a good category (4) reviews their attitude in taking care of the school environment was in a very good category.

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INTRODUCTION

The environment is a place to live in which we must keep intact, manage, and preserve as it is in urgent situation. Therefore everyone has the same right and duty to preserve the environment, including education practitioners. We can see at UNESCO agreement (MOE, 2005) that the environment is a process to equip students with conscious and caring minds toward the environment, to all issues related to the environment, and having the knowledge, skills, attitudes, behavior, motivation, and commitment to cooperate in solving environmental problems. Therefore continuous guidance is necessary for learners to understand the environment and its surroundings.

Environmental problems cannot only be solved technically, but the more important matter is how to change the mindset and awareness of students to actively participate in managing the environment (La Trobe & Acott, 2000). Alt-

hough it requires a long process and the outcome cannot be seen immediately, the solution of environmental problems through the development of responsible behavior is a strategic education to do in school (Reif, 2015).

To be able to instill students' environmental awareness, teachers must possess the awareness and concern toward the environment, especially in the school environment (Mastrili, 2005). This is due to them being at school everyday. Instill a caring attitude towards the environment is not an easy task, but it is not impossible. This is in accordance with the opinion of Neal (1995) that caring toward environment begins from self-awareness as a part of the ecosystem, to maintain the balance of the ecosystem. Power added (2004) that awareness should start from ourselves, from now on without having to wait for the right moment to do so, as well as starting from the simplest thing. Teacher can give example of how to create awareness within students. For example, teacher can explain that the act of littering is not only breaking law but also violating the moral norms, because while it causes the environment to be less

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beautiful and uncomfortable, it is also harmful to others since it causes pollution to water, soil, and air that ultimately decline the quality of human life (AIR, 2005).

The learners' low awareness toward environment need serious concerns (Pell & Jarvis, 2003). The education obtained by students in the classroom should have triggered students to possess a caring attitude towards the environment. Natural Sciences (IPA) given in elementary school was not sufficient to provide students with a caring attitude towards the environment (Neal, 1995). Related to the aforementioned fact, elementary school teachers candidate (primary school teaching students) need to master the environmental education and environmental education learning so that they can invest the attitude and behavior of caring toward environment, especially in the school environment (Schatz, 2000).

Environmental education given to the learners gradually starts from garbage sorting, rubbish utilization, hygiene, to plants treatment. Schools need to set up rules and provide sufficient facilities that support all learning programs (Reif, 2015) including environmental programs such as: the provision of bins, green plants, hygienic coordinator, even class chores schedule. Environmental education will be effective when the school makes intensive systems, rewards and punishment that are in harmony with fostering attitudes and behavior (Thompson, Cagnon & Michelle, 2014) in order to love the environment. To realize those positive things, the teacher is expected to provide appropriate reinforcement and the punishment. This condition will stimulate learners to have the intrinsic reinforcement and punishment (Pell & Jarvis, 2003). Strict prohibition for the students not to litter and do not kill or meddle with any existing plants should be enforced. Thus, the explicit rules are expected to admonish of the importance of the attitude of the importance of establishing, maintaining and preserving the environment (Thompson, Cagnon & Michelle, 2014).

One of the learning models that can instill environmental awareness is by having outdoor learning. NAEE (2001) states that learning outside the classroom (outdoor) aims to increase the awareness of students to: (1) themselves, through the everyday problems encountered; (2) other people, through the group problems; (3) the nature, through direct observation. Outdoor learning-based environmental education is conducted outside the classroom by engaging the learner to blend with nature and perform a variety of activities that lead to the realization of behavior chan-

ge towards the environment. Coyle added (2004) that outdoor learning is an attempt to assist learners in achieving learning objectives, avoiding boredom and the mindset that learning must be done inside the class.

Learning is an individual effort to obtain the overall behavior change that includes cognitive, psychomotor, and affective (Dori and Barak, 2001). However, in the implementation of learning in schools, many only emphasize on achieving cognitive aspects implemented through a variety of strategies, approaches, and learning models. Affective aspects in learning are still given less attention (McDermott, 1990). In the outdoor-based learning, the objectives are to shape students' attitudes and concerns. Throughout outdoor based learning, students are expected to optimally achieve the learning objectives that include cognitive, psychomotor, and affective (Hess-Quimbata & Michael, 2014).

Based on the passage above, researchers are interested in conducting further studies toward teacher candidates with an assumption that the school is one of the dominant factors in shaping and influencing attitudes and behavior of students.

METHOD

The research method used is based on the research and development method that has been modified into four stages according to the research needs without changing its significance, they are: 1) a preliminary study, 2) study model planning, 3) the development of learning models, 4) learning model experimenting. The subjects of the research were students taking elementary science education course PGSD FIP UNP, which consisted of three classes, divided into: class for model experimenting (12 students), the experimental class (23 students), and a control class (23 students).

Model experiment was done by using the method of quasi experimental pretest-posttest design for one group (Creswell in Hake, 1999). Pre-test (initial test) and post-test (final test) were given to students using the same questions. During the testing of learning model, researchers did necessary improvement to the learning stages. Improvements were made in each sub-material based on the advice of experts and observers. The revised model of learning would be used at the next meeting until we found the appropriate learning model that can be implemented. The testing of instrument of research was conducted to determine the validity, reliability, difficulty index,

and the distinguishing features.

Model test was conducted by using a quasi-experimental design pretest-posttest control group (Creswell in Hake, 1999). The pre-test and post-test given to both students of the experimental class and the control class were the same questions.

Learning material that would be tested on the students joining elementary science education class was the structure of the leaf. Leaf structure that would be studied was the form of leaves, leaf classification, and the shape of the leaf bones (MoE, 2005). Leaf structure was observed and studied using sensing device in dicotyledonous and monocotyledonous leaves.

The developed outdoor models consisted of three components; learning plans (students designed the learning by integrating material related with issues of school environment), the implementation of the PLO-based learning model school environment, and the evaluation of learning (emphasized on the development of caring attitudes / behaviors toward school environment) (Figure 1).

Data analyses in this research were done both qualitatively and quantitatively. Analysis of the qualitative data was related to the observation and recording on the field, while the analysis of quantitative data was related to the activities of the learning process and learning outcomes. Analysis of qualitative data was in the form of data reduction, data presentation, and conclusion.

Activities data and study results were ana-

lyzed with a standard minimum criteria for elementary science education course. The improvement of student learning outcomes was analyzed by calculating the average normalized gain score of the pre-test and post-test scores.

RESULT AND DISCUSSION

The increasing mastery of Environmental Education Concept for teacher candidates can be determined by calculating the average normalized gain (NG) score of the pre-test and post-test scores. After a thorough analysis we obtained an average NG score of 0.59 for experimental class teacher candidates as shown in Table 1.

Based on Table 1, it shows that increasing mastery of our Environmental Education Concept for material electrical energy savings the highest (82.30), and the lowest is the water pollution (79.59). The highest bias happened in air pollution, while the lowest bias is in the water pollution. It can be interpreted that the final score of mastery of Concept of Environmental Education in the experimental class is not much different in the good category. When compared with the score of Concept mastery of Environmental Education in the experimental class during pre-test is classified as low. Therefore NG for Environmental Education Concept mastery of 0.59 is very appropriate for those teacher candidates on the experiment class.

The results of the analysis of the attitude of teacher candidates in the experiment shown in

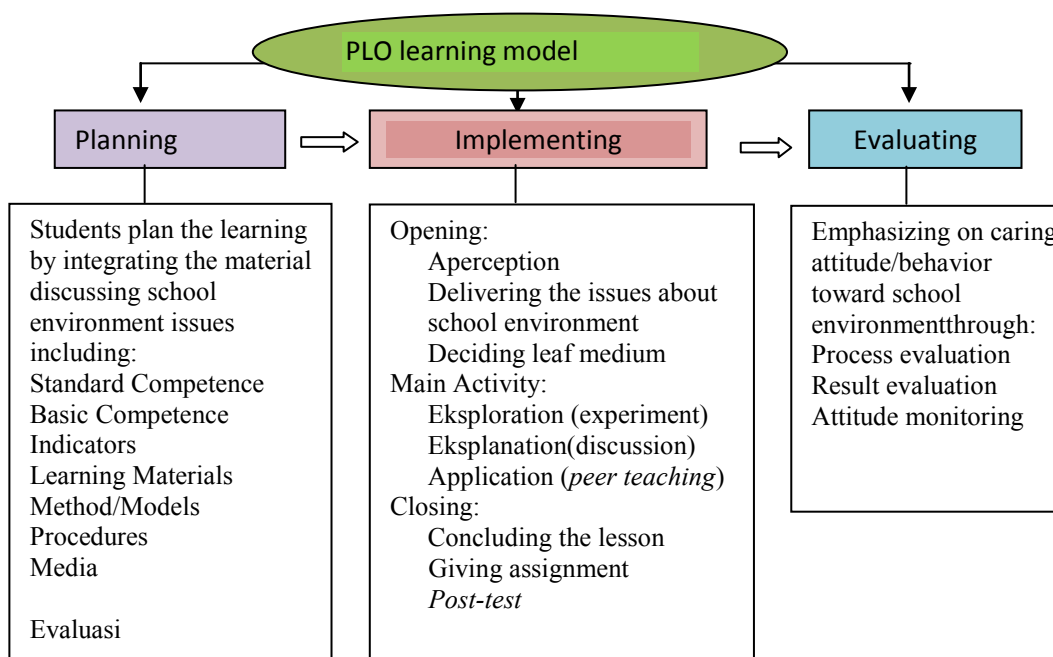


Figure 1. PLO Learning Model

Table 1. PLO Concept Mastery Experimental Class

No	Material	Pre - test		Post - test		Average NG
		Mean	SD	Mean	SD	
1	Combined	50,98	7,16	79,73	6,24	0,59
2	Water pollution	50,54	8,15	79,59	7,21	0,58
3	Soil Pollution	51,22	10,57	79,73	7,90	0,60
4	Air Pollution	51,49	9,92	80,54	10,26	0,58
5	Electricity Saving	49,73	8,07	82,30	9,83	0,59

Table 2.

Table 2. Attitude Scores prospective teachers in Experiment

No	Activities	Average	SD
1	Combined	3,43	0,21
2	Water purification	3,45	0,20
3	Composting	3,40	0,22

Data Analysis of the attitudes of teacher candidates in conducting the experiments show that the average attitude scores of 3.43 with a standard deviation of 0.21. If we compare it with the normal reference, it can be explained that the average score of the attitude of teacher candidates belongs to good categories. This is consistent with the AIR's view (2005) that students who obtain outdoor learning will have a better attitudes than those who do not experience it.

The attitude of teacher candidates toward the environment assessed when they are dealing with unusual circumstances experienced everyday. The attitude score towards the school environment can be seen in Table 3.

Table 3. The attitude Score of Teachers candidates toward School Environment

Early Ability	Average	SD	Category
High	75,68	7,04	Care
Medium	72,54	5,68	Care
Low	70,20	4,21	Care

The results of the data analysis of teacher candidates' attitude towards the school environment is an average score of the attitude of 75.68 and a standard deviation of 6.62. Based on attitude assessment categories in Table 4 can be explained that the average score of the attitude of teacher candidates to the school environment belongs to the caring category. Category score of attitudes that serve as a comparison is based on the nor-

mal curve, the ideal score, and ideal standard deviation (Hake, 1999).

CONCLUSION

Results of research on outdoor based learning environment tested on PGSD students showed that outdoor learning-based environmental education is effective in improving student learning outcomes, especially the attitude of caring toward the environment. The caring attitude is shown through the water purification experiment and composting of garbage school.

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