Increasing Ecoliteracy On The Impact Of Organic Waste Management Using A Problem A Problem-Solving The Model

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Abstract. Ecoliteracy or environmental literacy is the ability or high awareness of the Abstract. Ecoliteracy or environmental literacy is the ability or high awareness of the community about the importance of preserving the environment. This study aims to improve the ecoliteracy of elementary school Teacher Study Program students at the Universitas Esa Unggul towards the impact of organic waste management using a problem solving model. This research method uses an action research approach. The instruments used are observation sheets, interviews and questionnaires. The results of this study as a whole obtained that the use of problem solving models yields positive results on student learning activities regarding the importance of ecoliteracy. Based on research findings from the data that has been obtained shows that the ecoliteracy of students increases from cycle I to cycle II. Increased ecoliteracy can be seen from the increase in the percentage level of achievement from various aspects, namely the knowledge aspects of the aspects of conscience and aspects of application or action.

Index Terms: ecoliteracy, organic waste, waste management, high awareness problem solving models,

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1. INTRODUCTION

The environmental crisis and environmental problems that are present in the midst of our society are a result of the accumulation of errors in treating our environment or the earth where we live. Usually, after there is an impact, humans will feel the consequences and begin to realize. In line with this, efforts to raise awareness of environmental concerns continue to be pursued [1]. The main door is with environmental education whose main goal is to form an environmentally literate society (ecoliteracy) [2] The environment is one part of the earth that has an important role in the survival of living things. With the preservation of the natural environment, there are also healthy living things. Maintaining environmental health will make us comfortable and can avoid various kinds of diseases that come from the environment. However, it is very unfortunate that the development of science and technology has had a negative impact on the environment. Almost every year in Indonesia there are various kinds of natural disasters such as forest fires, floods, landslides and so forth. Even the flood disaster has become a subscription for our country. This is of course caused by people who do not care about the environment. Not littering, not using motorized vehicles on certain days (car-free day), go green activities are small things that we can do to avoid floods so that the need to implement ecoliteracy *(ecology literacy)* [3]. The idea of ecoliteracy *(ecology literacy)* or awareness of the

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world community [4]. ecoliteracy *(ecology literacy)* as a paradigm initiates a movement of concern for the environment and aims to increase the ecological awareness of the community [5], [6]. In addition, supporting factors for applying literacy to environmental awareness can be done through the process of learning activities at the university level. The importance of implementing this learning about ecoliteracy *(ecology literacy)* aims to apply the concept of ecoliteracy *(ecology literacy)* which is expected to students to be aware that nature on planet Earth is something that must be preserved with all its complex characteristics, and establish a sustainable community that values the intrinsic values of the universe. students must have a strategy in having a new pattern of view on the reality of shared life on planet earth and doing natural preservation for that the need to improve ecoliteracy *(ecology literacy)* in students [7], [8].

Based on a literature review of the importance of ecoliteracy, we took the initiative to conduct research on improving the ecoliteracy *(ecology literacy)* of students in the university's primary school teacher education department, which is superior to the impact of organic waste management through a problem-solving model. Problem-solving model is the effort of students to find answers to problems faced based on knowledge, understanding, and abilities that have been previously owned. Problem solving is part of the learning process of teaching physics, both in schools and university [9]. The importance of problem solving competencies for students has been consistently mandated. Thus learning with problem solving in schools is to help students learn the main concepts and principles and apply them to solve problems, especially increasing ecoliteracy *(ecology literacy)* to the impact of organic waste management.

environment is currently a very serious concern by the

In general, the purpose of learning using a problem-solving model is to improve high-level thinking skills. High-level thinking competencies are shown by several characteristics, including not algorithmic, tend to be more complex, often resulting in various solutions, involving various criteria and thought processes, involving self-regulation and thought processes, seeing structures in irregularities, and involving deep mental effort [9].

This research is very important to do because this study aims to improve ecoliteracy *(ecology literacy)* on organic waste management using a problem-solving model, the results of this study are expected to be a reference for academics to use problem-solving models to improve ecoliteracy *(ecology literacy)* on the impact of organic waste management.

2. METHODOLOGY

This research uses the Action Research approach method which has the aim to improve itself, own work experience, which is carried out systematically, planned, and this research focuses on the application of problem-solving models to increase Ecoliteracy *(ecology literacy)* to the impact of organic waste.

The design of this study uses the research model of the actions of Kemmis and Taggart. With the design of action research, the writer can know for sure the learning process in the classroom and get the opportunity to plan and implement the idea to increase the ecoliteracy *(ecology literacy)* of students towards organic waste using the understanding method based on understanding. The subjects of this study were 30 students of Education Esa Unggul Elementary School Education Study Program. The instruments used were observation sheets, conscience student questionnaire sheets, interview sheets, and evaluation sheets. Furthermore, data obtained through instruments to measure all three aspects of student knowledge regarding ecology, conscience aspects and application aspects were analyzed using descriptive statistics. In this way, it is expected to facilitate understanding the data for the next process. The results of data analysis are used as a basis to find out whether there is an increase between the first cycle of the next cycle. There are also success criteria from the findings of this study, namely: 100-90 Very Good, 89-70 good, 69-50 good enough 50-0 very bad.

3. RESULT

This study uses an action research approach where the results of the study will discuss the results of the assessment of aspects of student knowledge about ecology, aspects of Conscience and aspects of student application in

the cycle of action given. The following is a calculation of the results of the research shown in the form of a diagram:

Figure 1. Graph of assessment results on aspects of student knowledge of the Departement Elementary School Teacher Education at Universitas Esa Unggul

From the ideal value scale of 100, in the first cycle, the average value of student knowledge reached 72.12 with good categories, the second cycle reached 82, 51 with good categories, the third cycle reached 90.35 with a very good category. Apart from the aspect of knowledge, the use of problem-solving models can also increase the aspect of conscience of the Departement Elementary School Teacher Education at Universitas Esa Unggul in sorting organic waste as follows
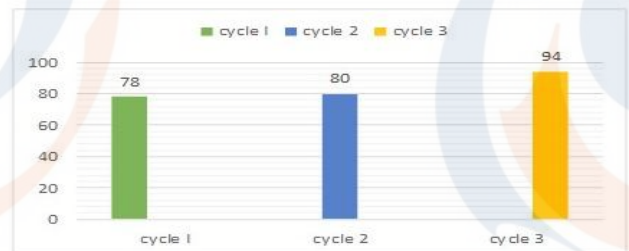

Figure 2. Graph of assessment results on aspects of student conscience of the Departement Elementary School Teacher Education at Universitas Esa Unggul

The average score of the conscience aspect of the student in the first cycle reached 78.00 in the good category, the second cycle reached the score of 80 with good categories, and the third cycle reached the score of 90.35 with the excellent category. Based on the results of the analysis on aspects of conscience, it can be seen that each cycle has an increase. The next aspect of the application is obtained in the following diagram

Figure 3. Graph of assessment results on aspects of application of Department students Elementary School Teacher Education at Universitas Esa Unggul towards ecological literacy

Furthermore, in obtaining the average score of aspects of student applications on increasing the Ecoliteracy cycle I reached 67.00 with sufficient categories, the second cycle reached a score of 68 with sufficient categories, and the third cycle reached a score of 78 with good categories.

4. DISCUSSION

Based on the results of the research presented, it is shown that the application of the problem understanding model can increase the ecoliteracy (*ecology literacy*) of the impact of organic waste. This can be seen from the achievement categories from various aspects, namely aspects of knowledge, conscience, and also applications. Ecoliteracy (*ecology literacy*) is an achievement in which someone who is very aware of the importance of the environment, the importance of maintaining and caring for the earth, ecosystems, nature as a place to live and develop life. The use of problem-solving models not only brings a positive impact on student ecoliteracy (*ecology literacy*) but also on student activities. Student activities in the activities of each cycle obtain a very good category so that it can be concluded that the hypothesis in the study proved that the use of problem-solving models can increase the ecoliteracy (*ecology literacy*) of students in sorting organic waste. The findings of this study are supported by the results of research conducted by Genc [10] which found that the use of problem-solving learning models proved to be effective in reminding ecoliteracy , then Kurniasari [3] who argued that an increase in ecoliteracy (*ecology literacy*) can be effective when using learning models that can stimulate students to think and analyze the importance of awareness environment, whereas Nugraha [11]further stated that the importance of environmental literacy or known as ecoliteracy (*ecology literacy*) because ecoliteracy (*ecology literacy*) seeks to introduce and renew people's understanding of the importance of global ecological awareness is therefore needed a model or method to improve ecoliteracy (*ecology literacy*).

5. CONCLUSION

Based on the findings that have been described, it can be concluded that the use of problem-solving models has been proven to improve the Ecoliteracy of students in the education department of the elementary school teacher at the University of Esa Unggul towards the use of organic waste. This research traces the aspect of students' understanding, awareness, and application of the surrounding environment. From the research findings, it was found that each aspect had a significant increase. This study also recommends that the importance of increasing Ecoliteracy is because with Ecoliteracy we can protect the earth's environment.

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