



Implementation of Environmental Ethics in Ecopedagogy-Based Geography Learning by Teachers on Environmental Sustainability

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Abstract. School teachers' application of environmental ethics needs to be comprehensively studied because it plays a vital role in shaping students' character who cares about the environment from an early age. However, research on environmental ethics in schools rarely gets attention, especially in Indonesia, where environmental damage is still very worrying. This study aims to determine the implementation of environmental ethics in geography learning based on ecopedagogy in schools. This study used a phenomenology design to describe how teachers conduct environmental ethics in geography class qualitatively. The data were obtained by interviewing geography teachers at three senior high schools in Sukoharjo Regency. Before drawing a conclusion, interview data were analysed through data reduction and data presentation. This study reveals that the application of environmental ethics is under the principles of ecopedagogy based on the environment. The application is through outing classes, and learning with an environmental approach. Implementing ecopedagogy-based environmental ethics is expected to prevent environmental sustainability and reduce environmental damage.

Keywords: Environmental Ethics · Ecopedagogy · Geography

1 Introduction

Humans in their lives are very dependent on the environment, both the physical environment and the social environment. Humans are essential in maintaining and preserving the environment for future life. Survival on earth is very dependent on humans to maintain and preserve the environment [1, 2]. To create a good ecosystem, humans must have an attitude about their environment, from small things to things that significantly impact the environment [3]. The existence of awareness of the environment will create environmental sustainability so that environmental conditions will be well guaranteed. The environment is part of natural resources the most important thing in life [4]. Various

environmental problems such as global warming, climate change, environmental damage, resource crisis, environmental pollution, floods, forest fires and many more must be solved thoroughly [5, 6]. Through education, these problems will solve by the learning process.

Education is a means to provide knowledge to students where in the process there are interactions that can have an impact on everyday life. Education is the process of a person developing abilities, attitudes, and other forms of behavior in the society in which he lives, a social process that is a person who selects and controls environmental influences so that he acquires or experiences optimal development of social abilities and individual abilities [3, 7, 8]. Education itself through a learning process that can provide knowledge about the impact of environmental damage on geography subjects. Submission of material in learning geography has different from learning other learning materials. Geography is one of the fields of science that studies the universe or the universe that seeks to provide a study of the phenomenon of the occurrence of the shape of the earth's surface and the symptoms that appear on it [9]. Submission of material in learning must be effective and efficient. The presence of a teacher is needed to deliver the material. The quality of learning in the classroom determines the quality of education. Therefore, teachers' abilities must be optimally optimized to achieve good learning. Teacher competence, commitment, and work motivation positively and significantly influence teacher performance in the learning process [10]. Teachers have a role in providing knowledge to students. The teacher manages the environment as well as possible so that the environment as an essential teaching component is adequately positioned and meets the requirements [9, 11]. To create environmental sustainability, teachers must understand the sciences about the environment well. The existence of various environmental problems occurs as a result of the decline in environmental quality caused by human behavior. Humans have a low level of concern for the environment, one of which is due to a lack of understanding of environmental ethics in schools [12, 13].

Environmental ethics is the basis of human behavior in environmental interactions [14, 15]. Environmental ethics must carefully consider every human activity related to the environment and maintain the environmental sustainability. Environmental ethics represent all components of sustainable life. Because humans are one of the essential components of the environment, human behavior in their interactions with the environment, as evidenced by their activities in processing and utilizing environmental resources, must pay attention to the environment [16, 17]. Environmental ethics pays attention to sustainable development, a principle, whereas living beings have a sense of responsibility for environmental sustainability [18].

Environmental sustainability is supported by knowledge and human awareness of protecting the environment [19]. Management was originally carried out by nature and is now mostly taken over by humans, and humans have not found a suitable artificial mechanism, so the ecosystem often becomes unbalanced [19, 20]. Creating environmental sustainability is a shared task as living beings. Knowledge of the environment and efforts to improve ecosystems is one way to maintain the environment [21]. The most appropriate action to instill environmental awareness is through education [22,

23]. In Sukoharjo Regency, environmental damage is very worrying [24–26]. The damage occurs due to natural and non-natural factors. Natural factors occur due to disasters, while non-natural factors occur due to human activities. However, land use that neglects the sustainability rule will only adversely affect quality of life regarding the environment [27]. Some calamities due to environmental problems of life caused by decreased quality environment makes us think again relate the incident to human behavior in treating [28].

Sukoharjo Regency also experienced environmental damage related to pollution caused by factory waste. Environmental pollution becomes a problem for the environment and the surrounding community, so it needs consideration. In addition to factory waste, natural damage that caused flooding in Sukoharjo was caused by the inappropriate use of land by the community [29]. The solution to this damage can be through various fields. One of them is through education in schools on geography learning.

Learning geography in environmental education has an ecopedagogy approach. Ecopedagogy-based geography learning directs each student to take ecological actions. Ecopedagogy can be interpreted as a literary movement to awaken students to become individuals with understanding, awareness, and life skills that are in harmony with nature conservation interests [21]. However, at this time, the ecopedagogy approach is rarely used due to limited knowledge by teachers about it. The ecopedagogy approach's limitations reflect the low level of ecological knowledge [2].

Environmental Ethics

Environmental ethics is related to human behavior or moral values in treating the surrounding environment. In simple terms, environmental ethics is defined as a value system that guides human behavior about their environment. Environmental ethics contains three main principles, namely: 1) the earth is limited in providing sources of life; 2) humans are part of nature; 3) humans are not rulers of nature but are managers of nature to remain sustainable and can continue to support human life from generation to generation [15, 30]. The formulation of the principles of environmental ethics aims to be used as a guide and guide for human behavior when dealing with nature [31].

Ecopedagogy

Ecopedagogy is an approach to making people aware of how to treat ecology or the environment. Etymologically, ecopedagogy comes from two words: ecology, which means the study of the reciprocal relationship between living things and their environment, and pedagogy, which means the science of education, both theoretically and practically based on philosophical values [2, 6]. Based on this review, ecopedagogy is an approach to building ecological awareness for a better future [21]. Ecopedagogy provides complete awareness of behavior towards the environment. Ecopedagogy is a living project that aims to realize the ideals of a new ecological-sustainable civilization so that children and young people can realize it with the help of educators and the people around them [1, 32].

Table 1. Interview Guide

Number	Ask
	Awareness regarding the application of Ecopedagogy and Environmental Ethics
	Participation in the application of ecopedagogy and environmental ethics in schools

Table 2. List of Resource Persons

No.	Resource Persons	School
	N1	Senior High School Nguter 1
	N2	Senior High School Nguter 1
	N3	Senior High School Sukoharjo 1
	N4	Senior High School Tawang Sari 1

2 Method

This type of research is qualitative research. The design of this study used a descriptive design. Thus, the data collected in the form of words and quotes will be written in the research report. Descriptive qualitative research is used to collect and analyze data. Researchers can describe in detail the application of environmental ethics in ecopedagogy-based geography learning by teachers in the Sukoharjo Regency.

The sources of data used are primary data and secondary data sources. Primary data sources were obtained directly from respondents or informants, namely teachers of geography subjects at SMA Negeri Sukoharjo, especially at SMA Negeri 1 Nguter, SMA Negeri 1 Sukoharjo, and SMA Negeri 1 Tawang Sari. Based on the consideration, the schools mentioned have applied for the adiwiyata program. In comparison, secondary data was collected from previous research journals and books related to the research theme. The data collection technique in this research is an interview with teachers. The data collection was carried out using a snowball sampling technique. This technique collects data sources that are initially small in number but gradually become large until the results are saturated. The data analysis technique used in this research is a descriptive analysis using several stages: data reduction, data presentation, and conclusion drawing. Collecting data using interview techniques under the interview guidelines that have been made, namely as follows (Tables 1 and 2):

3 Result and Discussion

3.1 Application of Environmental Ethics based on Ecopedagogy

Based on the interviews, environmental damage in Sukoharjo is very worrying, especially pollution caused by factory waste.

N2: “As a teacher, I am very concerned about the environmental damage that has occurred in Sukoharjo Regency, especially because of the damage caused by waste pollution. It also happens that my school area is close to a factory whose waste is very polluting the surrounding environment” (Interview: 2021, September 21. Senior High School 1 Nguter)

N2: “Environmental damages are not only caused by natural factors but also by human negligence. For example, in the area near here, there is a lot of air pollution that causes air pollution. We are very concerned about this condition, so we as geography teachers must have prevention that is done through learning.” (2021, September 21. Senior High School 1 Sukoharjo).

The interviews above show that teachers in Sukoharjo Regency have a sense of concern for their environment by feeling concerned about environmental damage. The damage that occurs is multidimensional not only damage environment but also damage to human morals and morals [33]. The teachers regretted the environmental damage and said the environment should be guarded and preserved. This attitude represents a sense of concern for the current environmental conditions. This attitude can create the emergence of environmental-based programs during learning. The teacher’s role is vital in providing an understanding of environmental ethics based on ecopedagogy.

Applying environmental ethics based on ecopedagogy can be started with a learning program close to nature.

N1: “In learning geography, we can distribute programs that are suitable for the environment. In learning geography, schools hold outing classes such as to Gunungkidul, Yogyakarta and other areas that can be used as learning resources.” (Interview: 2021, September 22. Senior High School 1 Nguter)

N3: “Learning geography apart from discussing the environment, we also hold outing class activities that support environmental-based learning activities” (Interview: 2021, September 30. Senior High School 1 Sukoharjo).

The results of the interview above show that the application of ecopedagogy-based environmental ethics in geography learning can be applied through outing class activities. In addition to understanding environmental conditions, the outing class activities hopefully can prevent environmental damage around them.

N3: “for the implementation of ecopedagogy-based environmental ethics as a geography teacher, he also always inserts materials about the environment, for example by inviting students to discuss environmental damage and then students are asked to find solutions or handling them” (Interview: 2021, October 1. Senior High School 1 Tawang Sari)

Based on the answers from the interview above, in addition to doing outing class activities, the teacher in geography learning can also invite students to discuss environmental damage or environmental problems. The geography teacher asks students to find solutions or handling that can be done to the problems raised through discussion.

Discussion

Based on the results of interviews, it can be explained that the implementation of environmental ethics in schools has been running by the principles of eco-pedagogy based on the environment. Environmentally based ecopedagogy principles can help the geography learning process through outing classes. Ecopedagogy is a movement back to nature by exploring the values contained in cultural heritage regarding nature conservation [9]. Education must be able to build individuals who have character and awareness of nature/environment. Education provides supporting infrastructure in preventing environmental damage. One of the main aspects of promoting environmentally sound education is to develop an existing environmental curriculum [34]. In the educational process, learning approaches or appeals can be used in controlling environmentally ethical behavior, such as in eco-pedagogy-based geography learning. Ecopedagogy is an approach to building eco-logical awareness. The learning process that uses an ecopedagogy approach will be closer to the environment so that the creation of natural sustainability will be easier. Environmental sustainability can be achieved if human behavior can be friendly to the environment. Such as interviews conducted with teachers at the Sukoharjo District High School, the application of environmental ethics in eco-pedagogy-based geography learning is implemented with outing class activities, it is used in geography learning activities. The activities for observing environmental conditions and inserting materials related to the environment invite students to discuss geography while learning about the environment.

4 Conclusion

Implementing environmental ethics in ecopedagogy-based geography learning by teachers on environmental sustainability has been running in Sukoharjo Regency following the principles of environmentally-based ecopedagogy. The application of ecopedagogy-based environmental ethics through education in schools is very appropriate because the learning process is always given learning close to nature conservation. The role of a teacher is very reliable to appeal to students regarding environmental ethics based on ecopedagogy. A teacher is a role model for students where all their behavior will be imitated and also used as a guide in doing things or practices in everyday life. The attitude of caring for the teacher's environment will significantly impact the learning process at school, where students will practice environmental ethics even though they are not in the school environment.

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