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RESEARCH ARTICLE

Analysis of Student Behavior of Environmental Concern through Ecopedagogy: A Study on Social Studies Learning

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ABSTRACT

Integrating ecopedagogical principles into the school curriculum aims to raise students' consciousness about environmental issues and encourage sustainable behaviors. However, there is still a lack of comprehensive knowledge regarding the extent to which junior high school students grasp and utilize these principles in their everyday activities. The goal of this research is to investigate how students behave in relation to the principles of Ecopedagogy. This research employs a quantitative methodology utilizing a percentage. The study included 210 middle school students in its sample. The findings indicated that students demonstrated a high level of environmental consciousness and ethical conduct by expressing strong support for the principle of "Respect for the Earth," with 83.98% responding positively. In terms of "Care for Life," 75.99% of students demonstrated a focus on the health and welfare of their surroundings. Nevertheless, only 66.92% of students responded positively to the concept of "Adopt Patterns of Production, Consumption, and Reproduction. This indicates that, even with knowledge and good actions linked to ecopedagogy, students still face difficulties in embracing sustainable consumption and production habits.

INTRODUCTION

In a world with growing global environmental challenges ((Perdana Prasetya et al., 2022), studying how people react to and view these issues is now a vital and growing area of research (Ojala et al., 2021). The level of environmental problems in Indonesia has become worrisome (Matitaputty et al., 2022). In numerous large cities, issues such as street litter and degraded river quality are frequently noticed (Kamil et al., 2020). In Indonesia, especially in city areas, environmental damage is mainly caused by increasing temperatures, air pollution, trash, common smoking, and lack of green areas (Mihratun et al., 2022). In today's society, immediate action is needed to address environmental problems before they become irreversible (Aydın & Murathan, 2024). Therefore, there is a need for focused and specialized attention on environmental challenges globally (Shutaleva et al., 2022), especially in Indonesia.

The quality of human life is strongly impacted by the environment, just as human activities significantly affect environmental conditions. There is a mutual dependence between humans and

the environment. As key agents in the use of natural resources, humans play a crucial role in preserving environmental quality (Fang et al., 2023; Suryawati et al., 2020). Even though young individuals understand the importance of environmental practices, they frequently struggle to implement them consistently. Conversations on eco-friendly actions are often promoted among friends and acquaintances (Shutaleva et al., 2022). Thus, there is a strong reciprocal relationship between humans and the environment (Paola, 2024).

The topic of environmental degradation has become a widely discussed issue in different fields (Supriatna, 2016). In order to tackle the rising issues of environmental degradation, it is essential to educate and raise awareness among the public about environmental problems. One way the community and government protect the earth is by promoting environmental education (Kamil et al., 2020). Initiating preventive measures should start with cultivating individuals who understand the significance of environmental sustainability for sustainable long-term growth (Yunansah & Herlambang, 2017). Educating students in schools is a key strategy to foster a generation that is environmentally aware and actively practices sustainable behaviors (Gadotti, 2011). Education is vital in molding students' character and nurturing their awareness and care for the environment that surrounds them (Rohsulina et al., 2024). Incorporating the ecopedagogy approach into social studies learning can help achieve this goal, as stated by (Siti Tartila & Eldi Mulyana, 2022).

Ecopedagogy is a critical educational approach that explores the connection between environmental and social issues (Hendrawan et al., 2020; Irianto et al., 2022; Misiaszek, 2015; Monem, 2024). In practice, students' attitudes and concern for the environment are often not fully developed. Among junior high school students, ecological problems are evident, as many lack awareness of both their own ecological impact and the environment around them (Siti Tartila & Eldi Mulyana, 2022). Given the growing ecological crisis, it is crucial for teachers to incorporate ecopedagogy-based social studies into their teaching to enhance students' ecological intelligence (Monem, 2024; Wardatussa et al., 2024). The upper-grade students at Cijantung 03 State Elementary School in Jakarta have a strong understanding of environmental stewardship (Handayani et al., 2021). Past studies have suggested a link between environmental knowledge and attitudes towards environmental conservation, however, there was not a significant connection found between environmental knowledge and environmentally responsible actions among students (Suryawati et al., 2020). Ecopedagogy-based social studies education improves students' understanding of both society and the environment, helping shape their character (Ardiansyah, 2022). The results of introducing environmental education in junior high schools were varied, with some schools doing well and others struggling to integrate it into social science lessons (Rohsulina et al., 2024). Ecopedagogy-focused education boosts students' understanding of the environment and promotes the growth of green-minded qualities (Fadjarajani & As'ari, 2021). It is essential to incorporate ecopedagogical education into the curriculum for junior high school Social Sciences in order to influence students' attitudes towards the environment (Ardiansyah, 2022). It helps students understand the importance of protecting and maintaining the environment, equipping them to be future guardians of the planet. This method of education fosters proactive mindsets towards environmental sustainability and fosters the cultivation of long-term ecological responsibility (Manik et al., 2021).

While previous research has generally explored environmental awareness, growth of green-minded qualities, and environmentally friendly character but has not explored student behavior concerning ecopedagogical principles. Initial research carried out at various junior high schools in Magetan shows that ecopedagogy has been integrated into the teaching of social studies. Nevertheless, student views on important ecopedagogical principles are still not well understood. So the novelty of this study lies in its focus on student behavior in relation to three core aspects of ecopedagogy such as Respect for the Earth, Care for Life, and the Adoption of Sustainable Practices in Production, Consumption, and Reproduction. As a result, this research project focuses on evaluating student behavior of environmental concern through ecopedagogy within the realm of social studies education.

METHOD

This research employs a quantitative design utilizing a descriptive methodology. The goal of this research was to examine student attitudes towards the concepts of ecopedagogy. This study included students from SMPN 1, SMPN 2, and SMPN 3 Maospati, Magetan Regency in its population. A

purposive sampling technique was utilized to select 210 active students aged 12-15 from three schools (Table 1). The instrument used for research was a custom closed questionnaire created to assess student attitudes towards ecopedagogy principles. This survey employs a Likert scale where 0 represents No and 1 represents Yes in order to measure the extent of student agreement towards different statements concerning ecopedagogy principles. The process of collecting data started by distributing questionnaires to all chosen participants. Following data collection, experts conducted content validity testing to confirm that the questionnaire included all key elements of ecopedagogy principles. Additionally, reliability testing using Cronbach's Alpha was performed to verify internal consistency and ensure dependable results. The instruments used in this study have been shown to be valid and reliable through testing, which makes them suitable for research. Excel was used in this study to analyze the data and compute percentages for every question and aspect of the ecopedagogy principles.

Table 1: Characteristics sample

No	Characteristics	Information	Total
1	School	SMPN 1 Maospati: 60 students SMPN 2 Maospati: 72 students SMPN 3 Maospati: 78 students	210
2	Age	12 years old: 47 students 13 years old: 36 students 14 years old: 58 students 15 years old: 69 students	210
3	Class	VII: 62 VIII: 54 IX: 94	210

RESULTS

This research is designed to examine how junior high school students respond to ecopedagogical principles, focusing on three key areas: Respect for the Earth, Care for Life, and the Adoption of Sustainable Patterns in Production, Consumption, and Reproduction, which will be detailed in the following sections.

Table 2: Table of student behavior towards key Ecopedagogical principles

Ecopedagogical Key Principles	Statement	Yes (%)	No (%)
Respect for the Earth	Do you always throw trash in its place?	93,3	6,7
	Is there any sorting of organic and inorganic waste at the school?	81,2	18,8
	Are there activities in the school to plant and maintain trees in the school environment?	95,3	4,7
	Is there a habit of turning off electricity in unused spaces?	95,3	4,7
	Are there acts of vandalism in open spaces, especially green open spaces in schools?	54,8	45,2
	Average	**83,98**	**16,02**
Care for Life	Do you prefer organic food?	78,8	21,2
	Do you use a mask when traveling on the highway?	95,3	4,7
	Do you reprimand a friend who doesn't wear a mask in public?	78,8	21,2
	Do you reprimand a friend who commits an environmentally unfriendly act?	87,5	12,5
	Do you avoid consuming junk food?	62,2	37,8
	Do you not burn in managing waste ?	43,4	56,6
	Are you trying to use enough water?	85,9	14,1
	Average	**75,99**	**24,01**
Adopt Patterns of Production, Consumption, and Reproduction	Are you trying to reduce (minimize) the use of plastic bags?	89,1	10,9
	Does the canteen at your school reduce the use of plastic for packaging?	54,4	45,6
	Does every activity in the school not use drinking in plastic packaging?	34,8	65,2

	Do you use a refillable bottle every time you go to school for drinking water?	85,9	14,1
	Every time you go to school, don't you always buy packaged drinks?	55,1	45,9
	Are you trying to use environmentally friendly goods?	98,4	1,6
	Do you rarely do online shopping so, that it increases waste?	50,8	49,2
	Average	**66,92**	**33,08**

The table above explains the detailed percentages for each aspect. Referring to the table above, the following image will present the three aspects.

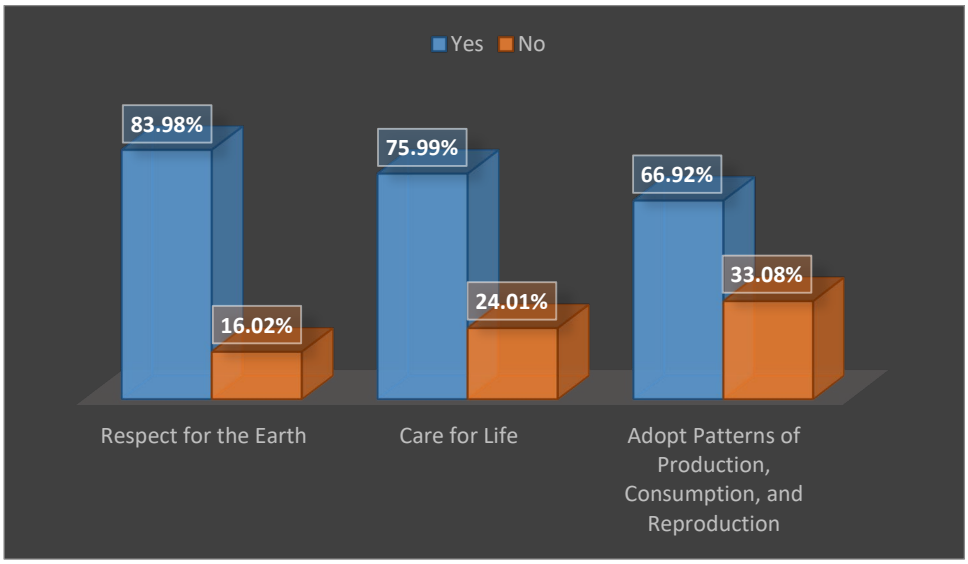

Figure 1: Student behaviour of environmental

Looking at the table provided, it is clear that most students chose 'Yes' for all three categories. The aspect of respect for the earth received the most feedback, with care for life coming next, and adoption of production, consumption, and reproduction patterns ranking last.

DISCUSSION

The findings indicate that students demonstrate positive environmental awareness behavior by applying ecopedagogical principles. Ecopedagogical learning emphasizes the growth of individuals' characters, motivating students to be more aware of the environment (Fadlurrahman, 2022; Misiaszek, 2015). The results of this research support past studies, demonstrating that students can correctly dispose of waste, separate organic and inorganic materials, decrease plastic usage, and grasp the importance of being eco-friendly consumers (Wardatussa & Suntari, 2024). Therefore, it is crucial to incorporate ecopedagogy principles to improve students' attitudes towards reducing environmental damage (Korsant, 2024; Kowasch, 2024; Wasino et al., 2020). Ecopedagogy is an educational approach aimed at fostering sensitivity and awareness to promote a healthier environment for human existence (Irianto et al., 2022; Nafisah et al., 2019; Rohayati, 2022; Walter & Kluttz, 2021). Therefore, ecopedagogy is essential in the field of social studies teaching and should be given due importance (Adela et al., 2024).

The survey results indicated that the principle of "Respect for the Earth" received the highest approval rate of 83.98%, followed by "Care for Life" at 75.99%, and "Adopt Patterns of Production, Consumption, and Reproduction" at 66.92% among students regarding key ecopedagogical principles. In the category of "Respect for the Earth," the issue of vandalism in school green spaces had the lowest approval rating at 54.8%. Students indicated that vandalism, such as graffiti and tree damage, was frequent and usually stemmed from peer pressure, boredom, personal issues, or school-related problems. On the other hand, waste disposal awareness received a high rate of positive responses (93.3%), as did waste sorting (81.2%), tree planting activities (95.3%), and energy saving

practices (95.3%). This shows that the majority of students, 83.98%, are usually dedicated to protecting the environment.

The burning of waste was the least popular choice in the "Care for Life" category, with a 43.4% approval rate. Students observed that incinerating garbage is a popular method at home because it is seen as a budget-friendly and simple option. Moreover, 62% of students admitted to consuming junk food, with many opting for it because of its convenience, low cost, and palatable flavors. Nevertheless, there were strong positive reactions towards wearing masks (95.3%), confronting friends who do not wear masks (78.8%), combating environmentally harmful actions (87.5%), and conserving water (85.9%). This implies that the majority of students, specifically 75.9%, typically engage in positive health care practices.

In relation to the "Adopt Patterns of Production, Consumption, and Reproduction" element, the least amount of support was seen for the avoidance of plastic packaging, with only 34.8% of students following this guideline. Bottled beverages and plastic packaging continue to be widespread in school cafeterias (54.4%). Furthermore, online shopping leads to the production of waste (50%), particularly an uptick in non-biodegradable packaging waste.

Respect for the earth

In terms of "Respect for the Earth", students showed an average positive response rate of 83.98%, demonstrating widespread recognition and endorsement of environmental conservation initiatives. The Earth's system's stability is directly tied to the welfare of humans, and the two are interconnected (Callicott, 2021; Rockström et al., 2023)(Callicott 2021, Rockström 2023). This finding aligns with recent research indicating that environmental education can effectively raise awareness and promote positive ecological actions (Fadjarajani & As'ari, 2021; Yunansah & Herlambang, 2017). Students' strong approval demonstrates their positive attitudes toward activities like waste reduction, recycling, and tree planting initiatives (Gaard, 2008). Yet, difficulties remain in translating this knowledge into regular habits, especially regarding vandalism in parks (Rodrigues, 2018). This problem highlights a discrepancy between what is known and how people actually behave (Fauzi et al., 2022a).

Students have demonstrated favorable behaviors in waste control, tree cultivation, and energy preservation, indicating an increased recognition of the significance of environmental conservation. This is consistent with research showing that successful environmental education improves both understanding and environmentally friendly actions (Adzani et al., 2024; Kahn, 2008). Although positive behaviors are evident, obstacles still exist, including the problem of vandalism in school gardens. Only 54.8% of students agreed with actions against vandalism, like graffiti and harm to plants, indicating that peer influence and a lack of awareness about the consequences could be factors in this behavior. Stress that simply having environmental knowledge does not always result in pro-environmental actions (Ojala et al., 2021), highlighting the importance of holistic approaches that enhance environmental awareness and target behaviors affecting sustainability (Misiaszek, 2021).

Additionally, there was a significant 93.3% favorable reaction towards appropriate waste disposal, indicating a well-founded understanding of the importance of efficient waste management. Hands-on learning opportunities like waste sorting in educational institutions can boost understanding of environmental issues and impact behaviors in personal and communal settings (Fauzi et al., 2022a). Despite some remaining hurdles in the "Respect for the Earth" factor, most students show admirable views on environmental preservation. Schools must prioritize sustainability education, address vandalism, and cultivate a sense of individual responsibility for environmental preservation.

Care for life

Life should be taken care of. In terms of "Care for Life," a positive response was demonstrated by 75.99% of students, showing a high level of interest in health and well-being. This finding supports recent research that highlights the need to incorporate health education into environmental curricula to promote a holistic approach to student well-being (Wardatussa & Suntari, 2024). Even with this favorable development, obstacles still exist, including the habit of burning garbage, which only 43.4% of students acknowledged as a issue. This approach is frequently selected because of its perceived ease and affordability, despite its negative impact on health and the environment (Kopnina, 2020). Moreover, students' feelings about consuming junk food emphasize the necessity for enhanced

education regarding the health and environmental effects of food choices. Burning waste, even though it has negative impacts on air quality and health, highlights the need for more awareness of its lasting effects (Wardatussa & Suntari, 2024).

Additionally, concerns are raised by the high number of students, totaling 62%, who regularly eat junk food due to its easy availability, low cost, and appealing flavors. This eating pattern is associated with health problems like obesity and chronic illnesses (Ojala et al., 2021). Schools need to educate students about balanced nutrition and provide healthier food options in their cafeterias (Fauzi et al., 2022; Gaard, 2008).

Adopt patterns of production, consumption, and reproduction

Only 66.92% of students agreed with the "Adopt Patterns of Production, Consumption, and Reproduction" aspect, showing the lowest affirmative response. This suggests that students may not be completely involved in sustainable practices related to consumption and waste management. The information points out a strong reliance on plastic packaging and e-commerce, causing a rise in waste (Fauzi et al., 2022). This highlights wider difficulties in changing consumer behavior and underscores the necessity for better strategies to encourage sustainable consumption practices (Seran et al., 2024).

An important concern is the continuous utilization of plastic in schools, with just 34.8% of students stating that plastic-packaged drinks were not included in their school activities. This indicates that schools still frequently utilize single-use plastic, despite its significant harm like pollution of soil and water (Wardatussa & Suntari, 2024). Efforts to decrease the use of disposable plastics and promote more eco-friendly options, such as reusable beverage containers, might aid in addressing this issue (Seran et al., 2024).

Furthermore, the data showing 54.4% of students observing plastic packaging in school canteens highlights the necessity for better plastic waste control in educational environments. Plastic consumption can be decreased through behavioral changes and stricter school policies like promoting the use of biodegradable packaging and reusable containers (Adzani et al., 2024). Furthermore, there is a worry about students' online shopping behavior, as half of them often buy things online, leading to a rise in non-organic packaging waste (Gaard, 2008). The environment suffers from the use of harmful packaging in online shopping when left uncontrolled.

In order to tackle these issues, schools need to improve their teachings on the impacts of unsustainable consumption and production, as well as encourage responsible behaviors such as recycling, minimizing plastic usage, and supporting local purchases. This method will assist students in comprehending the environmental consequences of their consumption decisions and promoting sustainable habits in production and consumption.

CONCLUSION

The findings suggest that a large majority of students, specifically 83.98%, exhibit a strong dedication to the principle of Respect for the Earth. This demonstrates a strong level of concern for the environment and conscientious actions. In terms of Health and Wellness, 75.99% of students showed worry about their well-being and the environment. In the aspect of Adopt Patterns of Production, Consumption, and Reproduction, only 66.92% of respondents gave positive responses. This indicates that although students are generally aware of sustainable practices, there is still potential for improvement, particularly in their consumption patterns and waste disposal. In general, students show a good environmental mindset, but more education and efforts are needed to enhance their comprehension and acceptance of sustainable production and consumption methods.

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