

Improving Environmental Literacy Through Primary Education: Preparing Students as Environmental Advocates

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Abstract: Primary education plays a crucial role in shaping students' awareness and commitment to the environment. This paper aims to examine the importance of primary education in enhancing environmental literacy and preparing students as environmental advocates. Through a literature review, this research explains the concept of environmental literacy and its positive impact on environmental sustainability. Furthermore, strategies and approaches that can be used in primary education to enhance students' environmental literacy are discussed. These include integrating environmental issues into the curriculum, developing critical thinking skills, providing practical experiences in real-world environments, and engaging students in environmental action. Additionally, the application of technology in environmental education is also explored as an innovative tool that can enhance learning and student participation. The paper also discusses the challenges and opportunities that may arise in implementing environmental education at the primary level. This research can contribute to developing a comprehensive approach in primary education that integrates environmental issues throughout the curriculum and school activities. This approach involves cross-disciplinary teaching, practical experiences in the real environment, the development of critical thinking skills, and collaboration with stakeholders. It is hoped that collaborative efforts among schools, teachers, parents, and the community will strengthen primary education as a primary foundation for enhancing students' environmental literacy and shaping a generation that cares for the environment.

Keywords: Environmental Advocates, Improving Environmental Literacy, Primary Education, Preparing Students

A. Introduction

The implementation of environmental education is crucial to instill in children, especially in the context of primary education. In the realm of primary education, its integration lies in its alignment with the existing curriculum within the educational setting. Environmental education has further implications for environmental literacy. Being environmentally literate means having a conscious attitude towards

maintaining environmental balance. This conscious attitude is demonstrated by a caring disposition towards the environment, which goes beyond having knowledge and theories about the environment. It entails awareness, responsiveness, and the ability to provide solutions to environmental issues. As primary school students are part of society, it is essential to equip them with environmental literacy skills, as they will be the future generation and agents of change.

In Indonesia, environmental literacy still poses a challenge that needs to be addressed. Several factors contribute to the low levels of environmental literacy in Indonesia, including inadequate understanding and knowledge of environmental issues such as climate change, pollution, deforestation, and biodiversity (Astuti & Aminatun, 2020). This can be attributed to the curriculum that has not fully integrated environmental issues and the limited access to adequate information and educational resources. The comprehensive integration of environmental issues into the education curriculum in Indonesia remains a challenge. However, the implementation of a curriculum that focuses on environmental literacy can be a solution to enhance students' understanding of environmental issues (Institute for Literacy & Center for Family Literacy, n.d.). Additionally, there is a lack of awareness and concern for the environment among students, indicating a need for improvement. Many students do not fully grasp the importance of environmental preservation and the negative impacts that can arise from environmental degradation (Hermawan et al., 2022).

A study has shown that low levels of environmental literacy among students can be attributed to a lack of understanding and knowledge about environmental issues (UNESCO, 2017). Environmental education plays a vital role in enhancing students' environmental literacy by integrating environmental issues into language and literacy learning. There is a correlation between environmental education and the improvement of language and literacy skills in students. The study suggests that environmental education can provide a relevant context to enrich students' language and literacy skills, thus enhancing their environmental literacy (Bain & McLaren, 2006).

The role of students as environmental advocates is crucial in preserving and sustaining the environment. Some roles of students as environmental advocates include increasing students' awareness as agents of change, taking concrete steps in conserving natural resources, participating in environmental projects, being environmental advocates, and serving as educators who provide education and information about the importance of environmental preservation (UNESCO, 2017). Students' role as environmental advocates is vital in creating positive changes towards environmental sustainability. By taking conscious and responsible actions,

students can make significant contributions to building a caring and sustainable society.

Efforts to address the issue of low environmental literacy have been launched through various programs such as the development of environmental-focused learning materials, teacher training on environmental education, and environmental awareness campaigns in schools and communities. Another program initiated by the Indonesian government is the Adiwiyata program. The Adiwiyata program is a national program in Indonesia that aims to encourage schools to implement activities that prioritize environmental preservation and the development of environmental culture. This program is initiated by the Ministry of Environment and Forestry of Indonesia (Kementerian Lingkungan Hidup, 2019). However, these efforts seem to have not yielded optimal results. Based on the aforementioned issues, the author is interested in conducting a research paper entitled "Improving Environmental Literacy through Primary Education: Preparing Students as Environmental Advocates."

B. Methods

This study is conducted using the literature review method. The literature review method is a research approach that involves the analysis and synthesis of relevant literature to answer research questions or understand a specific topic. This method involves systematic steps in searching, selecting, evaluating, and organizing relevant literature.

1. Literature Search Stage: In this stage, the researcher conducts a search for relevant literature using databases, scholarly journals, websites, and other information sources. The search is performed using keywords that are appropriate to the research topic (MacDonald, 2014).
2. Literature Selection: After conducting the search, the researcher performs the selection of literature based on predetermined inclusion and exclusion criteria. Literature that is relevant to the research topic will be chosen for further analysis (MacDonald, 2014).
3. Literature Evaluation: In this stage, the researcher evaluates the quality and reliability of the selected literature. Evaluation is done by considering the research methodology, relevance to the research topic, and the credibility of the sources (Baier, 2017).
4. Analysis and Synthesis: After selecting and evaluating the literature, the researcher performs an analysis of the relevant literature content. Data and important findings from each study are analyzed and synthesized to answer research questions or provide a comprehensive understanding of the research topic (Jonathan J Deeks & Altman, 2008).

Environmental awareness behavior is still very minimal, including among students. One effort to cultivate environmental awareness among students is through the implementation of the Adiwiyata program integrated into the formal education curriculum at all levels of schooling. The Adiwiyata program involves schools from primary to secondary levels, both public and private schools. Schools participating in this program are expected to integrate principles of environmental sustainability, conservation of natural resources, and environmental culture into their daily activities. Through this program, schools are provided with guidance and support to carry out various activities such as school environmental management, energy conservation, water management, waste management, tree planting, and the development of environmental education activities. The Adiwiyata program aims to serve as a community driving force in preserving and conserving the environment. Through this program, it is hoped that students can become agents of change who are concerned about the environment and play a role as environmental advocates in their surrounding communities. (Kementerian Lingkungan Hidup, 2019).

Integrating environmental issues into the elementary education curriculum is an important approach to enhance students' environmental literacy. Through cross-disciplinary learning that encompasses environmental issues, students can develop a deeper understanding of environmental challenges and the importance of maintaining environmental sustainability (Tilbury, 1995). Integrating environmental issues into the elementary education curriculum provides an opportunity for students to learn about environmental challenges and their comprehensive impacts, enabling them to act as environmental advocates.

Practical experiences in real-life environments are crucial components of environmental education, particularly in the context of elementary education. Through hands-on experiences in real environments, such as field trips to environmentally relevant locations or participatory activities in environmental management, students have the opportunity to connect theory with practice, enhance their understanding of environmental issues, and motivate them to take on the role of environmental defenders (Gayford & Saveland, 1978).

Developing critical thinking skills through elementary education is a crucial aspect in enhancing students' environmental literacy. By encouraging students to question, analyze, and evaluate information about environmental issues, they can develop the critical abilities necessary to make sustainable decisions (Ennis, 1996). Collaboration among schools, teachers, parents, and the community in supporting environmental education also plays a crucial role. Involving all stakeholders can create a holistic learning environment and ensure consistent understanding and action related to environmental protection (UNESCO, 2017).

C. Results and Discussion

It is undeniable that environmental care activities are crucial and should be implemented from an early age. Examining several cases of environmental destruction has prompted us all to instill environmental wisdom values based on environmental education to achieve environmental literacy, especially among primary school students. One of the government's efforts to promote environmental literacy among primary school students is by establishing the Adiwiyata program, which is integrated into the school curriculum (Kementerian Lingkungan Hidup, 2019). The research results in schools that have implemented the Adiwiyata program show that 48% of students have a high level of knowledge, 99% of students have a positive attitude towards the environment, and 79% of students demonstrate positive actions towards the environment. Meanwhile, in schools that have not implemented the Adiwiyata program, 33% of students have a high level of knowledge, 99% of students have a positive attitude towards the environment, and 76% of students demonstrate positive actions towards the environment. (Kementerian Lingkungan Hidup, 2019). From the data above, it can be analyzed that there is a correlation between the implementation of Adiwiyata and the formation of knowledge, attitudes, and actions among students (Iswari & Utomo, 2017).

Integrating environmental issues into the elementary education curriculum provides an opportunity for students to learn about environmental challenges, their impacts on ecological balance, and possible solutions as steps towards achieving sustainable environmental equilibrium. This is in line with the theory that integrating environmental issues into the elementary education curriculum is the most suitable approach for fostering students' environmental literacy. Through this approach, students are able to develop a deep understanding of efforts to maintain environmental sustainability and act as advocates for the environment. (Tilbury, 1995).

The integration of the environment into the elementary education curriculum involves various approaches and strategies. Some of them are 1) Integrated Curriculum Development: The curriculum can be designed in an integrated manner by incorporating environmental issues into existing subjects such as Science, Mathematics, Indonesian Language, and Arts. For example, in the Science subject, students can learn about ecosystems, natural resources, and human impact on the environment (Gayford & Saveland, 1978); 2) Environment-based Projects: Teachers can develop environment-based projects that engage students in investigation, exploration, and real-action related to environmental issues in their surroundings. For instance, students can conduct research on recycling, organize waste reduction campaigns, or design environmentally-friendly school gardens (Sukma et al., 2020).

3) Outdoor Learning: Teachers can organize field trips to environmental-related places such as national parks, botanical gardens, or waste treatment facilities. This provides students with direct experiences on the importance of environmental conservation and enhances their understanding of environmental issues (Gayford & Saveland, 1978); 4) Use of Relevant Learning Resources: Teachers can utilize textbooks, teaching materials, and other educational resources that cover environmental issues. These resources can provide a deeper understanding of the environment and motivate students to become environmental advocates (Iswari & Utomo, 2017).

Environmental literacy can be implemented through practical experiences in the real environment, allowing students to see and directly experience the environmental aspects learned in the classroom. For example, through field trips to national parks or botanical gardens, students can witness biodiversity, observe ecosystems firsthand, and understand the importance of environmental preservation for ecosystem sustainability (Gayford & Saveland, 1978). Additionally, through participatory activities in environmental management, such as environmental clean-ups, tree planting, or recycling initiatives, students can experience the positive impact of real actions in maintaining environmental cleanliness and preservation (Ernst & Monroe, 2004). This can enhance their awareness of personal responsibility in environmental conservation and motivate them to engage in real actions as environmental advocates. Research shows that practical experiences also help students develop practical skills, such as observation, measurement, and data analysis, which are essential components of environmental literacy (Madden & Liang, 2017).

Family members, particularly parents, appear to be one of the important sources of information for students. A study in Turkey indicated that the awareness of family members, especially parents, regarding the importance of role modeling real actions related to environmental care significantly influences children's environmental literacy. One activity that can introduce early environmental appreciation to students is taking them directly to nature during picnics (Erdogan & Ok, 2011).

Elementary education provides opportunities for students to develop critical thinking skills by studying and understanding various perspectives on complex environmental issues (Ernst & Monroe, 2004). Research suggests that through discussions, research, and analysis, students are encouraged to think critically about the environmental implications of human actions, climate change impacts, habitat degradation, and other relevant issues. They can identify facts, evaluate evidence, and consider various viewpoints before making decisions that impact the environment (Sukma et al., 2020).

The involvement of stakeholders in supporting environmental literacy plays a crucial role in creating a holistic learning environment and ensuring consistent understanding and actions related to environmental protection. When all stakeholders work together, they can support and complement efforts to enhance students' environmental literacy (UNESCO, 2017). This aligns with research conducted in Turkey, which emphasizes the importance of attention and support from relevant departments in the form of specific policies, such as collaboration between the education and environment departments (Erdogan & Ok, 2011). The theory suggests that collaboration in environmental education involving various stakeholders can create significant changes in environmental practices and behaviors (Gayford & Saveland, 1978). UNESCO also emphasizes the importance of collaboration among schools, families, and communities in achieving sustainable development goals through education. They underline the significance of involving all stakeholders in efforts to increase awareness and actions related to the environment (UNESCO, 2017). The collaboration between schools, teachers, parents, and the community in integrating environmental education into the curriculum and creating a supportive learning environment is crucial. Other research indicates that collaboration can enrich students' learning experiences and drive positive changes in environmental behavior (Gemmell, 2021).

D. Conclusion

Integrating environmental issues into the elementary education curriculum can enhance students' environmental literacy through approaches and strategies such as integrated curriculum development, environment-based projects, outdoor learning, and the use of relevant learning resources. The participation of elementary students in environmental actions involves practical experiences in the real environment, such as field trips or participatory activities like environmental clean-ups, tree planting, or recycling initiatives. This allows students to experience the positive impact of real actions in maintaining environmental cleanliness and preservation. Additionally, the role of families, especially parents, is crucial in providing concrete examples to children regarding environmental conservation. Collaboration in environmental education involving various stakeholders, such as collaboration between the education and environment departments in participatory environmental management activities, can create significant changes in environmental practices and behaviors, ultimately preparing students to become environmental advocates.

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