Research Article

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Building an Integrated Environmental Care Attitude with Ecopro (Ecobric Product) at SDN 43 Mataram

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Abstract: This study began with the problems faced, namely the lack of environmental awareness among students of SDN 43 Mataram, especially in plastic waste management. The problems identified in this study include: 1) Suboptimal utilization of plastic waste in the school environment; 2) The lack of environmentally conscious character in students related to waste management; 3) Efforts to instill environmentally conscious character through the use of ecobricks and products from the Pancasila Student Profile Strengthening Project. The purpose of this study was to explain the extent to which ecobrick products can instill environmentally conscious character. This study used a descriptive qualitative method to obtain data on instilling environmentally conscious character through the use of ecobricks at SDN 43 Mataram. Data were collected through student observations, interviews with teachers, and documentation of activities. The results of the study showed that environmentally conscious character can be improved, indicated by the habit of disposing of garbage in its place, using enough water to wash plastic waste, separating plastic waste from other types, and washing hands with soap after activities. In addition to developing environmentally conscious character, this study also showed improvements in other aspects of development, such as fine motor skills, cognition, language, religious and moral values, social emotional, and art. Ecobricks made by students are used as bookshelves and bottle puppets, which are not only useful, but also function as literacy media for students.

Keywords: Environmentally Caring Character, Plastic Waste Management, Ecobrick Product.

Introduction

Education is one of the main pillars in sustainable national development. As a foundation in preparing the younger generation to face future challenges, education does not only focus on the transfer of knowledge, but also on the formation of character and fundamental moral values. In this context, character education becomes a very important aspect because it plays a role in forming individuals who are not only intellectually intelligent, but also have social sensitivity and responsibility towards their surroundings (Purwanti, 2017; UNESCO, 2021).

Humans, as the main object of education, have a central role in character building efforts. According to Izza Amirul (2021), humans are pedagogical beings who have the potential to be educated and to educate. This concept emphasizes that education is an interactive process that involves both receiving and providing knowledge and values. Education not only aims to develop students' cognitive abilities but also to form positive attitudes and behaviors. In this case, environmental character education aims to instill awareness and responsibility for environmental preservation, which is an urgent need in this modern era.

Environmental character education is increasingly relevant considering the increasingly complex and pressing environmental problems, such as climate change, pollution, and degradation of natural resources. According to Sulistyanto et al. (2020), early introduction of waste management can improve the quality of the environment and public health. Therefore, the integration of environmental character education into the education curriculum is a strategic step to form a young generation that is aware of and responsible for the environment around them.

Several studies have highlighted the importance of character education in shaping environmentally conscious behavior. Anggraeni and Wibowo (2022) showed that the implementation of character education in schools can increase students' awareness of environmental issues. In addition, Palupi et al. (2020) emphasized that innovative methods such as Ecobrik (Ecobrick Product) in environmental education can improve students' creativity and practical skills. The Ecobrik method, which involves recycling plastic waste into construction materials, not only helps reduce the amount of plastic waste but also provides opportunities for students to be directly involved in waste management activities.

Although various efforts have been made by schools in managing waste and increasing environmental awareness, there are still significant challenges in changing student behavior consistently and sustainably. Observation results show that many students still litter, both in the classroom and in the area around the school. This shows a gap between the efforts that have been made and the expected results in instilling environmentally conscious character. This gap can be caused by various factors, including less interesting teaching methods, lack of intrinsic student motivation, and minimal student involvement in the school environmental management process (Dewi & Oktaviani, 2022).

In addition, previous studies are still limited in examining the effectiveness of the Ecobrik method in the context of environmental character education as a whole. Most studies focus on the direct impact of using Ecobrik on reducing plastic waste, without exploring how this method can be effectively integrated into the character education curriculum and how it affects changes in students' attitudes and behavior in the long term (Palupi et al., 2020). Therefore, this study aims to fill this gap by examining in depth the application of the Ecobrik method in environmental character education in schools.

The novelty of this study lies in a more comprehensive and contextual approach in implementing the Ecobrik method. This study not only assesses the direct impact of the use of Ecobrik on students' behavior in managing waste, but also explores how this method can be effectively integrated into the character education curriculum in various school contexts. In addition, this study will consider the variability of school characteristics to determine the most relevant and effective adaptations, as well as evaluate the long-term impact of the use of the Ecobrik method on students' waste management behavior.

The approach proposed in this study is the use of Ecobriks as an innovative method in environmental character education. Ecobriks are a method of recycling plastic waste by filling used plastic bottles with non-organic waste until full, then using them as construction materials. This method not only helps reduce the amount of plastic waste but also provides opportunities for students to be directly involved in waste management activities. Research by Palupi et al. (2020) shows that the use of Ecobriks in environmental education can improve students' creativity and practical skills.

In addition, this method also encourages teamwork and social responsibility among students.

The implementation of the Ecobrick method in environmental character education involves several strategic steps. First, students will be taught about the concept of recycling and the importance of waste management through interactive and interesting learning materials. Second, students will be directly involved in the process of making Ecobricks, from collecting plastic waste to filling plastic bottles with non-organic waste. Third, the Ecobricks that have been made will be used to make various products such as simple furniture, garden decorations, or environmentally friendly bricks, which can be applied in the school environment. These steps are expected to increase students' awareness of the importance of waste management and provide practical experiences that strengthen theoretical learning (Sulistyanto et al., 2020).

In addition to the use of the Ecobrick method, the involvement of various parties in efforts to instill environmentally conscious character is also very important. Schools, including teachers and administrative staff, have an important role in directing and facilitating environmental management activities. The participation of parents and the surrounding community is also needed to create an environment that supports and strengthens efforts to educate environmentally conscious character in schools (UNESCO, 2021). By involving various parties, it is hoped that the waste management program can run more smoothly and sustainably.

This research is expected to provide new contributions in handling environmental concerns contextually, as well as with a process based on collaborative activities. This contribution is not only limited to the development of more effective waste management methods, but also to the formation of stronger and more consistent student characters in maintaining environmental cleanliness and sustainability. In addition, this research is also expected to provide practical guidance for other schools in implementing innovative and sustainable waste management programs (Rizki & Santoso, 2022).

With the above rationale, it is important to further research the application of the Ecobrik method in environmental character education. Through this research, it is expected to obtain significant data and information regarding the effectiveness of this method, and can provide inspiration for educators and policy makers to formulate better strategies in character education and environmental management in schools.

Method

This study aims to improve students' environmental awareness through the implementation of Ecobrick Products (EcoPro) at SDN 43 Mataram. In order to achieve this goal, this study uses a qualitative approach that prioritizes Ecobrick-based actions that are integrated into learning activities. It is hoped that this approach can foster environmental awareness in students effectively.

This qualitative research method is designed to explore real conditions in the field, where researchers act as key instruments in data collection. The research was conducted at SDN 43 Mataram, focusing on the movement to build an attitude of caring for the environment through Ecobrick making activities. The subjects of this study included students, teachers, principals, guards, and canteen mothers, who contributed to the development of student character in the school environment.

Data in this study were collected through several triangulation techniques, namely:

1. Interviews: In-depth interviews will be conducted with students, teachers, and school

staff to gain a better understanding of their views and awareness of the importance of environmental stewardship. Interview questions are designed to explore their experiences and perceptions of Ecobrick implementation.

2. Observation: Direct observation was conducted to assess students' behavior in Ecobrick making activities and their interactions with the surrounding environment. This observation aims to provide a broader context regarding students' attitudes and actions in maintaining environmental cleanliness.
3. Questionnaire: A questionnaire will be distributed to students to measure their attitudes and knowledge about environmental awareness before and after the activity. This quantitative data will provide a clearer picture of changes in student attitudes.
4. Documentation: Documentation collection includes photos, videos, and written reports on Ecobrick making activities. This documentation serves as physical evidence of the research process and results and can be used to analyze the effectiveness of the activities carried out.

Data analysis was conducted inductively with an interactive approach. The collected data will be analyzed continuously until data saturation is achieved. According to Miles and Huberman, analysis consists of three main components: data collection, data reduction, and data presentation. This process will ensure that all information collected can provide a clear picture of students' environmental concerns.

The research was conducted in three main stages which were systematically planned:

1. Planning/Pre-Implementation
   a) Identifying the needs and expectations of school residents regarding environmental concerns.
   b) Planning Ecobrick making activities by involving all parties, including students and teachers, and providing the necessary facilities.
2. Implementation
   Ecobrick making activities will include several steps, including:
   a) Grouping Plastic Bottle Waste: Choose bottles of uniform size, such as 1.5 liters and 600 ml, to ensure uniformity of size.
   b) Preparing Plastic Waste: Separate and clean the plastic waste to be used, and cut it into appropriate sizes.
   c) Bottle Filling Process: Fill the plastic bottle with waste gradually while pressing so that the contents become solid and do not dent easily.
   d) Capping the Bottle: Capping the bottle so that the contents are not damaged and can be used.
   e) Processing Results Exhibition: Holding an exhibition to show the Ecobrick products that have been made, thereby increasing student motivation and awareness.
3. Evaluation and Reporting
   Conducting evaluations of activities and compiling reports based on data obtained from observations, interviews, and questionnaires. This report will be a reference for evaluating the success of activities and for formulating steps for improvement needed in the future.

Result and Discussion

Program Details

The Ecobrick implementation project at SDN 43 Mataram was implemented for one semester in the 2024 school year, in accordance with the school's established educational calendar. During this period, one project theme was carried out by prioritizing active student involvement through participatory activities. These activities are designed so that students can learn in a fun and practical way, where learning occurs inside and outside the classroom. Figure 1 illustrates the program implementation time.

Source: Implementation at SDN 43 Mataram

Figure 1. P5 ECO PRO implementation time

The location of the implementation of this project is located at SDN 43 Mataram, which is located at Jalan Dr. Wahidin, Gang Talaud No. 11 Rembiga, Selaparang District, Mataram City, West Nusa Tenggara, Postal Code 83124.

Eco Pro Program Implementation Stage

In the pre-implementation stage, students are given an introduction to various environmental problems around them, especially regarding waste management. This activity aims to help students understand how Ecobricks can function as a solution to reduce the volume of waste that damages the environment. By utilizing the tools and materials that have been prepared—most of which come from the food wrappers they consume and the results of sorting in the school trash—students are involved in a practical learning process.

In the implementation of the project, mentoring and monitoring are carried out directly by teachers and the project team. Periodic monitoring is carried out to ensure smooth activities, as well as photo documentation throughout the Ecobrick making process. The stages of collecting and processing waste are very important, because they will affect the quality of the final results of the Ecobricks produced. After enough Ecobricks have been collected, students are invited to process them into functional products such as bookshelves and bottle puppets, which are expected to increase students' literacy and creativity.

Findings from Observation Results of Environmentally Caring Characters

Observations were conducted on students in grade 5 of SDN 43 Mataram. The results of the observations showed that students were able to follow the teacher's instructions well when making Ecobricks. They showed an increase in environmental care characters that were seen in several behaviors, including:

1. Throwing Trash in the Right Place: Students consistently throw trash in the places provided, demonstrating a good understanding of the importance of maintaining cleanliness.
2. Sufficient Use of Water: Awareness of not using too much water is clearly seen when students wash the tools and materials used in making Ecobricks.
3. Separating Waste: Students are able to differentiate between organic and inorganic waste, demonstrating an understanding of sustainable waste management.
4. Maintaining Personal Hygiene: The habit of washing hands with soap after activities is

also implemented, which shows awareness of the importance of personal hygiene.

Based on findings in the field, the Ecobrick making process greatly contributes to the development of environmentally conscious characters in students. This is in line with Hidayatullah's opinion in Wiharyati (2016), where character building requires strategies that include role models, habits, and the creation of a conducive learning environment.

Formation of Environmentally Caring Character

As explained by Purwanti (2017), the goal of environmental character education is to foster positive habits, prevent environmentally damaging behavior, and equip students with skills to manage the environment wisely. Indicators used to assess environmental character include the availability of cleaning facilities, efficient use of energy, and involvement in waste management activities.

During the activity, students showed high interest and enthusiasm in the Ecobrick making process. Although some of them still needed help in cutting and processing plastic waste, they quickly learned and became more independent in these tasks. The guidance provided by the teacher was very helpful, giving them the support needed to understand the steps to be taken.

Multifaceted Development

In addition to improving environmental awareness, Ecobrick making activities contribute to various aspects of student development. During this process, students not only learn about waste management, but also hone their fine motor skills, cognition, language, religious and moral values, and social emotional development. The process of cutting, filling, and compacting plastic waste into plastic bottles requires precision and coordination, which stimulates their fine motor skills.

On the cognitive side, students are taught to understand the waste processing cycle and its impact on the environment. Dynamic discussions in class and interactions during Ecobrick making activities provide them with the opportunity to learn to communicate and work together, enriching their vocabulary and speaking skills. Religious and moral values are also instilled through learning related to environmental responsibility as a mandate that must be maintained.

Product Results and Exhibition

After going through a long process in making Ecobricks, students succeeded in creating functional and creative products. The final product is not only a bookshelf that can be used to store books, but also a bottle puppet that is used in art and cultural performances. The product exhibition was held to show the results of students' creativity to parents and the community, as well as to draw their attention to the importance of waste management and environmental awareness.

The exhibition not only serves as a showcase of students' work, but also as a means to educate the public about the use of Ecobricks and the importance of reducing plastic waste. Students play an active role in explaining the manufacturing process to visitors, which then gives them the opportunity to practice presentations and public speaking. This activity is also an important moment in giving recognition to students' efforts and encouraging them to continue caring for the environment.

Long Term Impact

The EcoPro program at SDN 43 Mataram is expected to have a long-term impact on students and the school environment. By instilling a caring character from an early age, students are expected to carry this knowledge and positive attitude into their daily lives, both at home and in the community. Through fun, practical learning,

students are not only taught about the environment, but are also given the tools to become agents of change in their communities.

In addition, the success of making and using Ecobricks shows the potential for this effort to continue to be developed. Students are given the opportunity to sell Ecobrick products with the proceeds being used as class cash funds. In this way, not only is the character of caring for the environment built, but also entrepreneurial skills in children. They learn about entrepreneurial values, including money management and the importance of working together to achieve common financial goals.

Conclusion

Overall, this study shows that the implementation of Ecobrick as a learning method contributes significantly to fostering environmental awareness among students. The EcoPro project not only succeeded in increasing students' knowledge and awareness of environmental issues, but also provided a platform to develop their character, social skills, and creativity. Through fun and collaborative activities, students are taught to be more environmentally responsible and are expected to continue these values in the future.

By strengthening character education and actively involving students in environmental management activities, it is hoped that SDN 43 Mataram can be an example for other schools in implementing environmental-based education. The positive experiences gained by children in this project can then be used as a way for them to protect and preserve the environment, making the world better and more sustainable. This EcoPro program not only provides benefits for students but also for the surrounding community, and inspires the younger generation to act in facing increasingly pressing global environmental challenges.

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