



Cultivating Environmental Responsibility In Early Childhood: An Implementation Study Of The Eco-Schools Program For Character Development

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Abstrak

Pendidikan lingkungan pada anak usia dini memiliki peran penting dalam membangun karakter peduli lingkungan melalui pengalaman nyata yang bermakna. Penelitian ini bertujuan untuk menganalisis implementasi program Eco-Schools dalam pembentukan karakter peduli lingkungan anak usia dini di POS PAUD Dahlia Mangli Randudongkal Kabupaten Pemalang. Penelitian menggunakan pendekatan kualitatif deskriptif dengan teknik pengumpulan data melalui observasi, dokumentasi, dan catatan lapangan. Subjek penelitian melibatkan anak usia dini dan guru sebagai fasilitator kegiatan pembelajaran berbasis lingkungan. Hasil penelitian menunjukkan bahwa program Eco-Schools diimplementasikan melalui berbagai aktivitas konkret, seperti kegiatan menanam dan merawat tanaman, menyiram tanaman, memberi makan hewan, menjaga kebersihan lingkungan, serta pembiasaan membuang sampah pada tempatnya. Aktivitas tersebut memberikan pengalaman langsung bagi anak dalam memahami hubungan manusia dengan lingkungan sekaligus mengembangkan nilai tanggung jawab, disiplin, kepedulian, kerja sama, dan empati terhadap makhluk hidup. Penelitian ini menunjukkan bahwa Eco-Schools dapat menjadi strategi pembelajaran berbasis karakter yang efektif pada jenjang PAUD karena mengintegrasikan pendidikan lingkungan ke dalam budaya sekolah sehari-hari. Implementasi berkelanjutan dengan melibatkan guru, orang tua, dan masyarakat diperlukan untuk memperkuat budaya peduli lingkungan sejak usia dini.

Kata Kunci : Eco-Schools; Pendidikan Lingkungan; Karakter Peduli Lingkungan; Anak Usia Dini.

Abstract

Environmental education in early childhood plays an important role in developing children's environmental care character through meaningful real-life experiences. This study aims to analyze the implementation of the Eco-Schools program in fostering environmental care character among young children at POS PAUD Dahlia Mangli Randudongkal, Pemalang Regency. This research employed a descriptive qualitative approach, with data collected through observations, documentation, and field notes. The research subjects involved young children and teachers as facilitators of environment-based learning activities. The findings indicate that the Eco-Schools program was implemented through various concrete activities, including planting and caring for plants, watering plants, feeding animals, maintaining environmental cleanliness, and developing habits of disposing of waste properly. These activities provided children with direct experiences in understanding the relationship between humans and the environment while fostering values of responsibility, discipline, care, cooperation, and empathy toward living organisms. This study demonstrates that Eco-Schools can serve as an effective character-based learning strategy in early childhood education by integrating environmental education into the daily school culture. Sustainable implementation involving teachers, parents, and the community is essential to strengthen environmental awareness and care from an early age.

Keyword : Eco-Schools; Environmental Education; Environmental Care Character; Early Childhood Education.

INTRODUCTION

Early childhood education (ECE) is a fundamental stage of education that plays an important role in shaping various aspects of children's development, including moral values, social-emotional skills, cognitive abilities, physical development, and character formation. During early childhood, children experience a highly potential developmental period in which various experiences become the foundation for shaping their attitudes, habits, and values that will influence their future lives. Therefore, learning at the early childhood education level should not only focus on developing early academic skills but also provide meaningful real-life experiences that help children understand their relationship with the social and natural environment.



One of the important character values that needs to be developed from an early age is environmental care. Environmental awareness is an essential attitude that should be cultivated during early childhood, as the early years represent a critical period for forming children's values, attitudes, and behaviors (Poje et al., 2024). Early childhood education has a strategic role in developing ecological awareness, empathy toward nature, and responsibility for environmental sustainability (Xu & Rahman, 2025; Ernst et al., 2021). Increasingly complex environmental problems highlight the urgency of integrating environmental education into early childhood education curricula from the earliest stages (Sinan et al., 2022). Young children need to gain direct experiences to understand that the environment is not merely a place to live but an essential part of life that must be preserved and sustained.

Environmental education in early childhood has unique characteristics because children are in the preoperational stage of development, where they learn best through concrete objects and direct experiences (Guslinda, 2018). Young children's thinking processes at this stage require real materials and meaningful experiences to support learning (Guslinda, 2018). Therefore, environmental learning for young children should be designed through concrete experiences that are closely connected to their daily lives (Rulli et al., 2024). Simple activities such as planting, watering plants, feeding animals, cleaning the environment, and disposing of waste properly can serve as effective strategies for developing children's environmental awareness (Kahriman-Pamuk & Samuelsson, 2024; Priadi & Fatria, 2024). Through these experiences, children learn to understand the cause-and-effect relationship between human actions and environmental conditions.

Within the context of character education, environmental care is not only related to children's knowledge about nature but also involves the development of positive attitudes and habits. Environmental care character refers to efforts to prevent damage to the natural and surrounding environment, as well as initiatives to repair environmental damage that has occurred (Rosanti & Alviyani, 2023). This attitude includes habituating children to maintain cleanliness and preserve the school environment (Rosanti & Alviyani, 2023), which subsequently contributes to the development of responsibility, discipline, and social awareness. Thus, environmental education in early childhood is closely connected with children's overall character development.

One relevant approach for integrating environmental education into early childhood learning is the *Eco-Schools* program. *Eco-Schools* is an environmental education program aimed at developing a sustainable school culture through the involvement of all school members in maintaining and protecting the environment (Karmilasari et al., 2020). This program does not merely position the environment as learning content but transforms it into an integral part of school culture and daily practices.

The implementation of the *Eco-Schools* program or environmental education at the early childhood level can be conducted through various simple activities that are appropriate to children's developmental stages. Children's direct involvement in real environmental activities is a key factor in developing positive environmental habits from an early age (Asmungi, 2019). Through active participation, children do not only understand the concept of environmental preservation but also experience the process of developing positive habits through meaningful activities.

Despite this ideal condition, challenges remain in implementing environmental education in early childhood institutions. Environmental learning in schools is often still limited to introducing concepts through pictures, stories, or teacher explanations, while opportunities for children to participate directly in environmental activities remain limited (Tapung, 2024; Aryanto et al., 2022). However, environmental care character cannot be developed solely through verbal understanding; it requires repeated habituation and direct experiences in everyday activities (Nabila et al., 2023; Irayanti & Sundawa, 2023).

These challenges indicate the need for learning strategies that position the environment as an integral part of children's learning experiences. Children need opportunities to interact directly with nature and their surroundings so that environmental awareness can develop naturally. The *Eco-Schools* program provides a solution through an activity-based approach that enables children to learn through authentic environmental practices.

POS PAUD Dahlia Mangli Randudongkal, Pemalang Regency, is one of the early childhood education institutions that implements environment-based learning activities involving children directly. Based on learning activity documentation, children participate in various activities, including planting and watering plants, caring for animals, maintaining classroom cleanliness, organizing learning materials, and disposing of waste properly. These activities demonstrate efforts to build an environmental care culture through simple habits integrated into children's daily routines.

Although studies on environmental education in early childhood have been widely conducted, many previous studies have focused primarily on improving environmental knowledge or utilizing specific learning media. Research examining the implementation of the *Eco-Schools* program as an integrated school culture embedded in children's daily activities remains relatively limited, particularly within the context of local community-based early childhood education institutions. Therefore, this study provides novelty by exploring how the *Eco-Schools* program is implemented through children's real-life activities to develop environmental care character.

This study aims to analyze the implementation of the *Eco-Schools* program in fostering environmental care character among young children at POS PAUD Dahlia Mangli Randudongkal, Pemalang Regency. The study focuses on how environment-based activities provide meaningful learning experiences that develop children's responsibility, care, discipline, and love for the environment. The findings are expected to contribute to the development of environmentally based early childhood education practices, particularly in designing learning activities that not only support children's developmental achievements but also foster positive character values from an early age.



METHOD

This study employed a descriptive qualitative approach aimed at obtaining an in-depth understanding of the implementation of the *Eco-Schools* program in fostering environmental care character among young children. A qualitative approach was selected because the study focused on the learning process, children's experiences, their involvement in environmental activities, and the behavioral changes that emerged during the implementation of the program, rather than measuring outcomes quantitatively.

The research was conducted at POS PAUD Dahlia Mangli, Randudongkal District, Pemalang Regency, Central Java, Indonesia. The research subjects were young children participating in environment-based learning activities and teachers who acted as facilitators and guides throughout the activities. The research site was selected because the institution implemented various environmental care habituation activities, including planting and caring for plants, maintaining cleanliness, caring for living organisms, and developing clean and healthy living behaviors.

Data were collected through observation, documentation, and field notes. Observation was conducted to identify children's involvement in *Eco-Schools* activities, including their care for plants, responsibility in maintaining the environment, cooperation with peers, and habits of maintaining cleanliness. Documentation in the form of photographs of learning activities was used as empirical evidence to support the research findings. Field notes were used to record various activities, children's responses, and behaviors during the learning process.

Data analysis was carried out interactively through the stages of data reduction, data display, and conclusion drawing (Miles & Huberman, 2002). Data validity was ensured through technical triangulation by comparing observation results, activity documentation, and field notes to obtain a comprehensive understanding of the implementation of the *Eco-Schools* program in developing environmental care character among young children.

RESULTS AND DISCUSSION

1. Result

Based on observations of learning activities and documentation of children's activities, the findings revealed that the *Eco-Schools* program was implemented through various habituation activities that actively involved children in protecting, caring for, and utilizing the environment as a learning resource.

The results indicate that environmental-based learning was not conducted merely through verbal explanations of concepts but was realized through meaningful direct experiences that enabled children to interact with their surroundings. Children were actively involved in various activities, including planting and watering plants, caring for animals, maintaining environmental cleanliness, and developing responsible behaviors toward objects and the environment around them.

These activities provided opportunities for children to understand the importance of maintaining environmental balance through concrete experiences. Through daily environmental practices, children gradually developed awareness, responsibility, and positive attitudes toward nature as part of their learning process.



Figure 1. Planting Activities as an Implementation of the *Eco-Schools* Program

Based on Figure 1, children were actively involved in planting activities within the school environment. Children were given opportunities to learn about the early stages of plant growth through activities such as placing plants into soil and providing care after the planting process. This activity demonstrates that the environment was utilized as a concrete learning resource for young children.

Through planting activities, children gained experiences in understanding that plants are living organisms that require attention and care. Children learned to recognize the relationship between humans and nature through simple hands-on activities conducted directly in their surroundings. In addition to developing environmental knowledge, this activity also fostered important character values, including responsibility, patience, and care for living things.



Figure 2. Plant Watering Activities

The plant-watering activity, as shown in Figure 2, demonstrates the process of habituating children to care for their environment. Children not only recognize plants as learning objects but also begin to understand that plants require water and proper care to grow well.

Watering plants represents a simple form of character education because children learn to carry out caring actions regularly and consistently. This activity shows that children are provided with opportunities to interact directly with the natural environment around them. The school environment functions not merely as a place for learning but also as an experiential space where children develop positive relationships with nature.

In addition to planting and watering activities, the implementation of the *Eco-Schools* program was also reflected through activities involving feeding animals.



Figure 3. Caring for Animals through Rabbit Feeding Activities

Based on Figure 3, the activity of feeding rabbits demonstrates that environmental education within the *Eco-Schools* program does not only focus on plants but also includes caring for other living organisms. Through this activity, children learn that animals require attention, food, and proper care.

This activity provides meaningful social-emotional experiences for children because it involves affection, empathy, and concern for other living beings. Children begin to understand that humans have interconnected relationships with living organisms in their surrounding environment.

In addition to caring for the natural environment, the development of an environmental care culture is also implemented through habituation activities related to maintaining the cleanliness of the school environment.



Figure 4. Organizing Play Equipment and Cleaning the Classroom Environment



Figure 4 illustrates children's involvement in organizing play equipment after use. This activity represents part of the school culture that teaches children that a comfortable and orderly environment should be maintained collectively.

Children learn that every object has its own place and should be returned after being used. This simple habituation contributes to the development of discipline, responsibility, and orderly behavior among young children.



Figure 5. Disposing of Waste Properly

The activity of disposing of waste properly demonstrates the process of internalizing clean and healthy living behaviors. Children are provided with direct experiences to understand that maintaining environmental cleanliness can begin through simple daily actions.

Observation results revealed several indicators of environmental care character development that emerged during the implementation of the *Eco-Schools* program. These findings are presented in Table 1.

Table 1. Findings on the Implementation of the *Eco-Schools* Program in Developing Environmental Care Character among Young Children

Environmental Care Character Aspect	Research Findings	Children's Behavioral Indicators
Care for plants	Children were involved in planting and watering plants	Children participated in planting, watering, and observing plant conditions
Responsibility	Children directly participated in environmental care activities	Children carried out simple tasks in caring for plants and maintaining the environment
Care for living organisms	Children participated in animal-feeding activities	Children demonstrated attention toward animals' needs
Environmental cleanliness	Children participated in disposing of waste and cleaning the environment	Children disposed of waste properly and maintained cleanliness
Independence and cooperation	Children carried out environmental activities with teachers and peers	Children collaborated with others and followed activity rules

Based on Table 1, the implementation of the *Eco-Schools* program provided meaningful learning experiences that supported children's character development through concrete activities. Children learned that maintaining the environment is a shared responsibility rather than merely an adult responsibility.

Overall, the findings indicate that the implementation of *Eco-Schools* at POS PAUD Dahlia Mangli Randudongkal, Pemalang, was carried out through three main forms of activities:

- Nature-based learning activities, implemented through planting and caring for plants.
- Development of care for living organisms, implemented through activities involving animal care, such as feeding rabbits.
- Habituation of environmentally friendly behaviors, implemented through maintaining environmental cleanliness and managing objects in children's surroundings.

These findings demonstrate that the *Eco-Schools* program provides opportunities for young children to develop environmental awareness through direct participation, meaningful experiences, and daily habituation within the school environment.

2. Discussion

The findings of this study demonstrate that the *Eco-Schools* program serves as an effective approach for developing environmental care character among young children through direct and meaningful experiences. The results indicate that environmental education in early childhood should not be delivered solely through conceptual explanations or theoretical



materials but should be implemented through authentic activities that enable children to interact directly with their environment.

Theoretically, character development in early childhood occurs through habituation processes and repeated social experiences within children's living environments (Kuswanto et al., 2024; Gayatri et al., 2023). Children acquire values through direct interactions with their natural and social surroundings, where meaningful experiences such as gardening, caring for animals, and maintaining environmental cleanliness play important roles in developing environmental care character (Kuswanto et al., 2024; Ismailova, 2022).

This approach is consistent with Piaget's constructivist theory, which explains that young children construct knowledge through direct experiences with objects and their surrounding environments. Children do not merely receive information about the importance of environmental preservation but develop understanding through concrete actions. For example, when children water plants, they learn that plants require water through direct experience rather than merely through verbal explanations from teachers.

Experience-based learning approaches in early childhood education have a strong theoretical foundation in Piaget's constructivist perspective. Constructivism explains that children actively construct their own knowledge through interactions with their environment rather than passively receiving information (Chou, 2017; Sadvakassova et al., 2023). Piaget emphasized that cognitive development is a constructive process that occurs through continuous interaction between individuals and their environments (Hu, 2024; Erawati & Adnyana, 2024).

Within early childhood contexts, this theory highlights the importance of direct experiences as the foundation for developing understanding (Plazar, 2022; White et al., 2021). Children are not positioned as passive recipients of knowledge but as active agents who construct cognitive schemas through processes of assimilation and accommodation (Sadvakassova et al., 2023). When children engage in real activities such as watering plants, they construct an understanding of plant needs through these direct experiences. This aligns with Piaget's principle that education should provide opportunities for children to discover and construct knowledge independently (Tallou, 2022; Chen et al., 2024).

The findings of this study also support the concept of environmental education that emphasizes the importance of *learning by doing*. This concept refers to learning through active participation, where children are directly involved in meaningful activities. In early childhood education, learning processes should introduce fundamental concepts through experiences that encourage children's curiosity, exploration, and active engagement (Sriyanti & Zanki, 2021).

Previous studies have confirmed that environmental education in early childhood becomes more effective when children participate in authentic activities related to their daily lives. Experiential and collaborative learning approaches have been shown to effectively cultivate sustainable living habits among young children (Koenarso, 2023). Direct experiences, such as planting activities and garden management, provide children with deeper understanding of sustainability concepts (Koenarso, 2023). These experiences support the development of ecological awareness while fostering positive environmental habits from an early age (Susari, 2016; Hasanah, 2018).

The implementation of *Eco-Schools* in this study demonstrates that the school environment can function as a laboratory for character education. Children learn that environmental preservation is a shared responsibility. Activities such as cleaning classrooms and organizing play equipment indicate that environmental care is not limited to outdoor natural environments but also includes the social environment where children learn and interact.

The implementation of *Eco-Schools* shows that the school environment can serve as an effective space for character development. Previous research indicates that environmental awareness can be cultivated through habituation, namely through consistent routines practiced by children within school settings (Quezada et al., 2024). Activities such as classroom cleaning and organizing play materials represent strategies for developing environmental care character that encompasses not only natural environments but also children's immediate social surroundings (Mardhatillah, 2022).

These findings strengthen the view that environmental character education has interconnected moral and social dimensions. Environmental care is not merely related to human relationships with nature but also reflects children's ability to understand responsibility toward themselves, others, and their surrounding environments (Farihin, 2023).

Through collaborative activities, children develop fundamental social skills. Playing and interacting with peers enable children to practice cooperation, sharing, respecting others, and understanding the consequences of their actions (Rahmadianti, 2020). Outdoor environments, in particular, provide rich opportunities for developing character values such as responsibility, discipline, environmental appreciation, and cooperation (Sutini & Sa'diyah, 2020).

Activities involving plant and animal care also demonstrate the relationship between environmental education and children's social-emotional development. When children feed rabbits or water plants, they learn to develop empathy and concern toward other living beings. Children begin to understand that the environment is not separate from themselves but an essential part of life that should be respected and protected.

Previous studies have shown that children's involvement in environmental activities can enhance ecological awareness and prosocial behaviors (Nopiana, 2025; Sari et al., 2025). Children who frequently interact with natural environments tend to develop stronger responsibility and greater concern toward their surroundings. Therefore, the *Eco-Schools* program has strong relevance for implementation in early childhood education.

The role of teachers emerged as an important factor in the successful implementation of this program. In this study, teachers acted as facilitators who provided opportunities for children to participate in environmental activities. Teachers



did not merely provide instructions but guided children, modeled positive behaviors, and developed environmental habits through daily routines.

Therefore, the implementation of *Eco-Schools* at POS PAUD Dahlia Mangli Randudongkal, Pemalang, demonstrates that environmental education can serve as a strategy for developing young children's character. The program not only enhances children's understanding of the environment but also strengthens values of responsibility, care, discipline, and empathy through meaningful real-life experiences.

CONCLUSION

This study demonstrates that the implementation of the *Eco-Schools* program at POS PAUD Dahlia Mangli Randudongkal, Pemalang Regency, plays an important role in developing environmental care character among young children. The *Eco-Schools* program is not merely an environmental introduction activity but has developed into a learning culture that provides children with authentic experiences to interact with, care for, and take responsibility for their surrounding environment.

Through activities such as planting, watering plants, caring for animals, maintaining cleanliness, and developing habits of proper waste disposal, children gained direct experiences in understanding the relationship between humans and the environment. The findings indicate that environmental care character develops through consistent habituation processes embedded in children's daily activities.

Environment-based activities not only enhance children's understanding of nature but also strengthen character values, including responsibility, discipline, independence, cooperation, and empathy toward living organisms. These findings highlight the importance of integrating environmental education into early childhood learning practices rather than treating it merely as an additional activity.

Early childhood institutions are encouraged to develop sustainable environmental education programs through meaningful play-based and experiential activities. Teachers should design learning experiences that allow children to actively participate in caring for their environment. Future development of the *Eco-Schools* program may involve stronger collaboration among schools, parents, and communities so that environmental care culture extends beyond school settings into children's everyday lives. Further research may explore the implementation of *Eco-Schools* across diverse early childhood education contexts and develop innovative models of environmental learning for young children.

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