

Internalizing Gratitude to Allah and Environmental Stewardship through Plastic Waste Recycling: An Islamic Ecotheological Study among Students of SD Negeri 5 Kota Bengkulu

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ABSTRACT

The increasing accumulation of plastic waste has become one of the environmental challenges that requires not only technical intervention but also educational efforts capable of shaping ecological awareness and moral responsibility. Within the perspective of Islamic education, environmental preservation is closely related to the values of gratitude (syukur) to Allah and the mandate (amanah) entrusted to human beings as caretakers of the earth. Therefore, environmental education in elementary schools should not merely focus on knowledge acquisition but also facilitate the internalization of religious values that encourage responsible attitudes toward nature. This study aims to examine the process of internalizing gratitude to Allah and environmental stewardship through plastic waste recycling activities among students of SD Negeri 5 Kota Bengkulu from the perspective of Islamic ecotheology. This study employed a qualitative approach with a case study design. Data were collected through in-depth interviews, participant observation, and documentation involving school principals, teachers, and students. Data analysis was conducted through the stages of data reduction, data display, and conclusion drawing, while the validity of findings was strengthened through source and technique triangulation. The findings reveal that plastic waste recycling activities function as an effective medium for integrating environmental education with Islamic values. Students demonstrated an understanding that maintaining environmental sustainability represents an expression of gratitude to Allah for His blessings and a form of responsibility in safeguarding natural resources entrusted to humanity. The recycling process encouraged the development of environmentally responsible behavior, discipline, cooperation, creativity, and ecological awareness. Furthermore, the integration of practical environmental activities with religious reflection enabled students to connect everyday actions with their spiritual obligations toward Allah and the environment. The study concludes that plastic waste recycling serves as a meaningful strategy for internalizing gratitude to Allah and fostering environmental stewardship among elementary school students. Through an Islamic ecotheological approach, environmental preservation can be transformed into a value-based educational practice that strengthens both ecological consciousness and Islamic character formation.



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Introduction

The increasing accumulation of plastic waste has become one of the most pressing environmental challenges in Indonesia. Plastic waste pollution not only threatens ecosystem sustainability but also contributes to environmental degradation, flooding, soil contamination, and disturbances to public health. Although various waste management programs have been implemented by government agencies, schools, and community organizations, environmental problems continue to emerge due to the limited environmental awareness and behavioral commitment of society. This condition indicates that environmental conservation efforts cannot rely solely on technical solutions but must also involve educational interventions capable of shaping environmental values and responsible behavior from an early age (Rohman et al., 2024).

Environmental education at the elementary school level occupies a strategic position because childhood is a critical period for character formation. During this stage, students begin to develop attitudes, habits, and values that influence their future behavior. Previous studies have shown that environmental awareness is more effectively developed through direct participation in environmental activities than through theoretical learning alone. Activities such as waste sorting, waste recycling, and environmental conservation projects provide opportunities for students to understand the consequences of their actions and develop environmentally responsible behavior through experiential learning processes (Cahyaningsih et al., 2022). Therefore, schools have an important responsibility not only to provide environmental knowledge but also to cultivate environmental character that can be internalized in students' daily lives.

However, environmental education practices in schools frequently emphasize scientific knowledge and ecological literacy while paying less attention to the spiritual and moral dimensions that sustain long-term environmental responsibility. Consequently, environmental behavior may emerge only within formal educational settings without necessarily becoming an internalized value. This limitation highlights the need for educational approaches that integrate environmental awareness with ethical and religious consciousness. Within the context of Islamic education, environmental preservation is not merely a social obligation but also a manifestation of faith, gratitude, and obedience to Allah (Sapitri et al., 2025).

From an Islamic perspective, nature is regarded as one of Allah's blessings entrusted to humanity. The Qur'an repeatedly encourages human beings to reflect upon creation and to express gratitude for the favors bestowed by Allah. Gratitude (*syukur*) occupies a central position in Islamic teachings because it reflects a believer's recognition of divine blessings and responsibility toward their proper utilization. Allah states:

لَشَدِيدٌ عَذَابِي إِنْ كَفَرْتُمْ وَلَئِنْ ۖ لَا زِيْدَنَّكُمْ شُكْرُكُمْ لَئِنْ رُبُّكُمْ تَأْتِنَ وَإِذْ

"And [remember] when your Lord proclaimed, 'If you are grateful, I will surely increase you [in favor]; but if you deny, indeed, My punishment is severe'" (Qur'an 14:7).

This verse demonstrates that gratitude extends beyond verbal acknowledgment and should be manifested through responsible actions toward Allah's blessings. In the context of environmental sustainability, preserving natural resources and minimizing environmental damage can be understood as practical expressions of gratitude to Allah for the gifts entrusted to humankind (Rosidah et al., 2026).

The concept of gratitude is closely related to the Qur'anic notion of human beings as *khalifah fil ardhi* (vicegerents on earth). Human beings are entrusted with the responsibility of managing and preserving the environment in accordance with divine guidance. Allah declares:

خَلِيفَةَ الْأَرْضِ فِي جَاعِلٌ إِنِّي لِلْمَلَائِكَةِ رَبُّكَ قَالَ وَإِذْ

"Indeed, I will make upon the earth a successive authority (khalifah)" (Qur'an 2:30).

The concept of *khalifah* implies responsibility rather than domination. Human beings are entrusted with maintaining ecological balance, protecting natural resources, and ensuring environmental sustainability for future generations. Therefore, environmental stewardship represents a form of obedience to Allah and the fulfillment of a divine trust (*amanah*) entrusted to humanity (Sapitri et al., 2025).

The responsibility to preserve the environment is further reinforced by the Qur'anic prohibition against environmental destruction. Allah commands:

إِصْلَاحَهَا بَعْدَ الْأَرْضِ فِي تَفْسُدُوا وَلَا

"And do not cause corruption upon the earth after its reformation" (Qur'an 7:56).

This verse provides a clear ethical foundation for environmental conservation and sustainable resource management. Likewise, the Prophet Muhammad ﷺ emphasized environmental responsibility through practical action, stating:

فَلْيَغْرِسْهَا يَغْرِسَهَا حَتَّى تَقُومَ لَا أَنْ اسْتَطَاعَ فَإِنْ فَسِيلَةً أَحَدِكُمْ يَدٍ فِي السَّاعَةِ قَامَتْ إِنْ

"If the Final Hour comes while one of you has a seedling in his hand, then if he can plant it before the Hour comes, let him plant it" (Narrated by Ahmad).

Both the Qur'an and Hadith demonstrate that environmental preservation is not only an ecological necessity but also a moral and spiritual responsibility. Consequently, efforts to reduce plastic waste through recycling activities may be viewed as concrete manifestations of gratitude, stewardship, and environmental responsibility within Islamic teachings.

These theological foundations have contributed to the emergence of Islamic ecotheology as an interdisciplinary discourse that explores the relationship between God, humanity, and nature. Islamic ecotheology argues that environmental crises are not solely ecological problems but also reflections of moral and spiritual crises resulting from weakened human awareness of divine responsibility. Therefore, environmental preservation should be understood as an act of worship and a manifestation of ethical commitment toward Allah's creation (Rohman et al., 2024; Syafaruddin, 2025).

Recent studies have highlighted the growing significance of ecotheological approaches in Islamic education. Rohman et al. (2024) found that integrating ecotheological perspectives into Islamic Religious Education strengthens students' environmental awareness and moral responsibility. Similarly, Rosidah et al. (2026) reported that ecotheological values contribute to the development of both spiritual consciousness and ecological responsibility among learners. Furthermore, Cahyaningsih et al. (2022) demonstrated that environmental character education becomes more effective when supported by Islamic values and participatory educational practices. These findings indicate that the integration of environmental education and Islamic teachings possesses significant potential for fostering environmentally responsible behavior among students.

Despite these developments, previous studies have predominantly focused on conceptual discussions of Islamic ecotheology, environmental character education, or curriculum integration. Limited attention has been given to examining how specific environmental practices can function as media for internalizing gratitude to Allah and environmental stewardship among elementary school students. In particular, research exploring plastic waste recycling as a pedagogical medium for integrating environmental education, Islamic values, and ecological character formation remains relatively scarce. This gap is important because recycling activities provide practical opportunities for students to connect environmental action with religious reflection and moral responsibility.

Based on these considerations, this study investigates the internalization of gratitude to Allah and environmental stewardship through plastic waste recycling activities among students of SD Negeri 5 Kota Bengkulu from the perspective of Islamic ecotheology. Specifically, the study aims to explore students' understanding of gratitude toward environmental sustainability, examine how recycling activities foster awareness of environmental stewardship as a divine trust (*amanah*), and analyze the contribution of Islamic ecotheological values to the development of ecological character.

By integrating environmental education with Islamic theological principles, this study seeks to contribute to the growing discourse on Islamic ecotheology while providing practical insights for strengthening value-based environmental education in elementary schools.

Method

This study employed a qualitative descriptive approach to explore the process through which values of gratitude to Allah and environmental stewardship were internalized among elementary school students through plastic waste recycling activities. A qualitative approach was considered appropriate because the focus of the study was not to measure the effectiveness of a particular intervention statistically, but rather to understand the meanings, experiences, interpretations, and value constructions developed by participants within their natural educational setting. In qualitative inquiry, social reality is understood as contextually constructed through interactions, experiences, and reflections of participants. Therefore, this approach enabled the researcher to capture how students, teachers, and school stakeholders interpreted recycling activities not merely as environmental practices but also as manifestations of gratitude (*syukur*), responsibility (*amanah*), and stewardship (*khalifah fil ardh*) from the perspective of Islamic ecotheology (Fadli, 2021).

The research was conducted at SD Negeri 5 Kota Bengkulu, Indonesia. The selection of this site was based on purposive considerations. The school has implemented environmental education activities that involve students directly in plastic waste management and recycling practices. More importantly, these activities provide a relevant context for examining the intersection between environmental education and Islamic value formation at the elementary school level. As environmental awareness and religious character development constitute important components of elementary education, SD Negeri 5 Kota Bengkulu offered a meaningful setting for investigating how ecological responsibility can be integrated with spiritual and moral learning experiences.

The participants of this study consisted of individuals who were directly involved in environmental education activities within the school environment. They included the principal, Islamic Religious Education teachers, classroom teachers, and students who actively participated in plastic waste recycling programs. Participants were selected using purposive sampling techniques because they possessed specific experiences, knowledge, and involvement relevant to the research objectives. Rather than seeking statistical representation, participant selection emphasized information richness and the ability to provide in-depth insights regarding the internalization of gratitude and environmental stewardship values through recycling activities (Yuliani, 2023).

Data were collected primarily through semi-structured interviews. This technique allowed the researcher to prepare guiding questions while simultaneously providing opportunities for participants to express their experiences, perceptions, and reflections in their own words. Interviews focused on participants' understanding of environmental responsibility, their experiences in recycling activities, the role of teachers in fostering environmental awareness, and the ways Islamic values were integrated into environmental education practices. During the interview process, probing questions were employed to explore emerging themes more deeply and to clarify participants' responses. Such flexibility was important for uncovering meanings that might not emerge through structured questioning alone (Fadli, 2021).

In addition to interviews, observation was conducted to gain direct insights into students' behaviors and interactions during environmental activities. Observation enabled the researcher to examine how environmental values were translated into everyday practices within the school setting. Particular attention was given to students' participation in plastic waste collection, sorting, and recycling activities, as well as their interactions with teachers and peers during environmental programs.

Observational data were recorded systematically through field notes to capture contextual information, behavioral patterns, and spontaneous responses that could not be fully revealed through interviews alone. Through direct observation, the researcher was able to compare participants' verbal statements with actual practices observed in the field.

Documentation was utilized as a complementary source of data to enrich and verify information obtained through interviews and observations. Documentary materials included school environmental program reports, photographs of recycling activities, school regulations concerning environmental management, students' recycled products, attendance records, and other relevant institutional documents. These materials provided contextual evidence regarding the implementation of environmental education activities and offered additional perspectives on how environmental stewardship was embedded within school culture. The use of documentation also contributed to a more comprehensive understanding of the educational processes under investigation (Sugiyono, 2022).

Ensuring the trustworthiness of qualitative findings constituted an important aspect of the research process. Therefore, this study adopted the criteria of credibility, transferability, dependability, and confirmability as proposed in qualitative research traditions. Credibility was enhanced through prolonged engagement in the field, persistent observation, and member checking. During member checking, participants were given opportunities to review interview summaries and clarify statements to ensure that the findings accurately represented their perspectives. Transferability was supported by providing detailed descriptions of the research context, participants, and procedures, allowing readers to assess the applicability of findings in other educational settings. Dependability and confirmability were maintained through systematic documentation of research activities, field notes, interview transcripts, and analytical decisions throughout the study (Fadli, 2021).

To strengthen data validity further, triangulation techniques were employed. This study applied both source triangulation and methodological triangulation. Source triangulation involved comparing information obtained from principals, teachers, and students to identify similarities, differences, and consistencies across participant groups. Methodological triangulation was conducted by comparing findings derived from interviews, observations, and documentation. The combination of multiple sources and data collection methods enhanced the credibility of the findings and minimized the risk of subjective interpretation. Through triangulation, emerging themes were continuously examined and verified across different forms of evidence before being interpreted as research findings (Yuliani, 2023).

Data analysis followed the interactive model developed by Miles, Huberman, and Saldaña (2014), which consists of data condensation, data display, and conclusion drawing and verification. The analysis began with data condensation, involving the selection, simplification, categorization, and organization of raw data collected through interviews, observations, and documentation. Subsequently, the organized data were presented in narrative descriptions and thematic matrices to facilitate interpretation and pattern identification. The final stage involved drawing conclusions and verifying findings through continuous comparison between emerging themes and empirical evidence. Throughout this process, the researcher paid particular attention to themes related to gratitude to Allah, environmental stewardship, Islamic ecotheology, ecological responsibility, and character formation. The iterative nature of the analysis allowed findings to emerge inductively while remaining grounded in participants' lived experiences and the broader theoretical framework of Islamic environmental ethics.

Results and Discussion

1. Plastic Waste Recycling as a Medium for Internalizing Gratitude to Allah

The findings indicate that plastic waste recycling activities implemented at SD Negeri 5 Kota Bengkulu function not merely as environmental education practices but also as meaningful pedagogical spaces through which students develop an awareness of gratitude toward Allah's blessings.

Based on classroom observations and interviews, students gradually came to understand that the natural environment constitutes a divine gift that must be preserved rather than exploited irresponsibly. Recycling activities encouraged students to reflect on the importance of maintaining environmental cleanliness and reducing waste accumulation as part of their responsibility toward the resources entrusted by Allah. This understanding demonstrates that environmental education can serve as an effective medium for connecting ecological awareness with spiritual values, particularly when environmental practices are accompanied by religious reflection and moral guidance (Rohman et al., 2024).

Several students expressed that prior to participating in recycling activities, they viewed plastic waste merely as discarded material with little significance. However, continuous involvement in waste collection, sorting, and recycling processes gradually altered their perspectives. Students began to recognize that environmental cleanliness contributes to human well-being and that preserving the environment reflects appreciation for the blessings granted by Allah. One student explained that participating in recycling activities helped him realize that "Allah has provided a clean environment for us, therefore we should not damage it by throwing waste carelessly." Although expressed in simple language, such reflections reveal an emerging connection between environmental responsibility and religious consciousness. This finding suggests that environmental practices can become meaningful learning experiences through which students internalize values beyond technical waste management skills.

Teachers also emphasized that recycling activities were intentionally integrated with discussions concerning Islamic teachings on gratitude and responsibility. According to an Islamic Religious Education teacher, environmental activities were frequently accompanied by conversations regarding the importance of appreciating Allah's blessings through concrete actions rather than merely verbal expressions. The teacher explained that students were encouraged to understand that gratitude is demonstrated through behavior that protects and sustains the environment. Similarly, a classroom teacher noted that students who regularly participated in recycling activities appeared more attentive to cleanliness within the school environment and increasingly reminded their peers not to litter. These observations indicate that environmental learning experiences contributed not only to cognitive understanding but also to behavioral transformation.

The relationship between environmental stewardship and gratitude is strongly supported by Islamic teachings. The Qur'an states:

لَشَدِيدٌ عَذَابِي إِنْ كَفَرْتُمْ وَلَئِنْ ۖ لَأَزِيدَنَّكُمْ شُكْرًا ثُمَّ لَئِنْ رُبُّكُمْ تَأَدَّبْنَ وَإِذْ

"And [remember] when your Lord proclaimed, 'If you are grateful, I will surely increase you [in favor]; but if you deny, indeed, My punishment is severe'" (Qur'an 14:7).

This verse provides an important theological foundation for understanding gratitude as an active and transformative value. Within the context of environmental education, gratitude cannot be reduced to verbal acknowledgment of Allah's blessings. Rather, it requires responsible action aimed at preserving and utilizing those blessings appropriately. Environmental conservation, therefore, may be interpreted as a practical manifestation of gratitude because it reflects awareness of the value and significance of natural resources provided by Allah for human welfare.

The findings further reveal that students increasingly associated environmental cleanliness with religious virtue. During observations, students demonstrated greater willingness to collect plastic waste, separate recyclable materials, and maintain the cleanliness of school surroundings even when teachers were not directly supervising them. Such behavior suggests that environmental responsibility had begun to shift from externally imposed rules toward internally motivated actions. This transformation is particularly significant because value internalization occurs when individuals adopt certain principles as part of their personal convictions rather than merely complying with institutional expectations.

In this regard, recycling activities provided opportunities for students to experience the practical dimensions of gratitude through repeated environmental actions embedded within everyday school life.

From the perspective of Islamic character education, the development of gratitude involves cognitive, affective, and behavioral dimensions. Students must first understand the meaning of divine blessings, then develop positive emotional appreciation toward those blessings, and finally express that appreciation through responsible conduct. The findings of this study demonstrate the interaction of these three dimensions. Students recognized the environment as a blessing from Allah, expressed concern regarding environmental degradation, and participated actively in activities aimed at preserving environmental sustainability. This process reflects what Islamic educational scholars describe as the transformation of religious knowledge into lived moral practice, whereby values become embedded within everyday behavior rather than remaining abstract concepts (Ruslan et al., 2024).

The results also support previous studies highlighting the importance of integrating environmental education with religious values. Rohman et al. (2024) argue that eco-theological approaches enable environmental issues to be understood not merely as ecological concerns but also as moral and spiritual responsibilities. Likewise, Sapitri et al. (2025) emphasize that environmental awareness becomes more sustainable when linked to religious values capable of shaping students' ethical commitments. The present findings extend these arguments by demonstrating that plastic waste recycling activities can function as practical instruments for cultivating gratitude to Allah among elementary school students. Through direct engagement with environmental problems and solutions, students learn to translate religious teachings into concrete environmental actions.

Viewed from a broader educational perspective, the significance of these findings lies in their implication for character formation. Contemporary environmental education often prioritizes knowledge acquisition and behavioral outcomes while overlooking the spiritual foundations that sustain long-term commitment. The experiences of students at SD Negeri 5 Kota Bengkulu suggest that integrating environmental activities with Islamic values creates a more holistic educational process. Students do not merely learn how to recycle plastic waste; they also learn why environmental preservation matters from a religious perspective. Consequently, gratitude emerges not only as a theological concept but also as a lived disposition expressed through everyday environmental practices. This integration of ecological learning and spiritual reflection represents an important contribution of Islamic ecotheology to elementary environmental education.

2. Internalizing Environmental Stewardship as an Amanah through Recycling Activities

The findings reveal that plastic waste recycling activities contributed significantly to students' understanding of environmental stewardship as a form of *amanah* entrusted by Allah. Although students initially participated in recycling programs primarily as part of school activities, repeated involvement gradually encouraged them to perceive environmental care as a personal responsibility rather than merely a school obligation.

Interviews with students indicated that they increasingly understood that environmental cleanliness should be maintained collectively and continuously. This awareness emerged not only from environmental knowledge acquired during classroom instruction but also from direct experiences in managing plastic waste within the school environment.

Field observations demonstrated that students began to associate environmental responsibility with everyday actions. During recycling activities, students voluntarily collected plastic waste found in classrooms and school yards, sorted recyclable materials, and reminded their peers to dispose of waste properly. Interestingly, these actions often occurred without direct supervision from teachers.

Such behavior suggests that environmental responsibility had started to become internalized as a personal value. Rather than responding solely to school regulations, students demonstrated an emerging sense of ownership toward the cleanliness and sustainability of their surroundings. This finding indicates that practical environmental activities can facilitate the transformation of ecological responsibility from external compliance into internal commitment.

Teachers also reported noticeable changes in students' attitudes toward plastic waste management. According to several classroom teachers, students who regularly participated in recycling programs became more aware of the environmental consequences of improper waste disposal. One teacher explained that students frequently discussed the negative impacts of plastic pollution during classroom conversations and increasingly expressed concern when encountering littered areas around the school. Similarly, an Islamic Religious Education teacher observed that students had begun to connect environmental issues with moral responsibility, recognizing that environmental degradation results not only from technical failures but also from human negligence. These observations suggest that recycling activities created opportunities for students to develop both ecological awareness and ethical sensitivity.

The emergence of such awareness is closely related to the Islamic concept of human beings as *khalifah fil ardhi* (vicegerents on earth). Within Islamic teachings, humanity is entrusted with the responsibility of managing and preserving the earth in accordance with divine guidance. Allah states:

خَلِيفَةَ الْأَرْضِ فِي جَاعِلٍ إِنِّي لِلْمَلَائِكَةِ رَبُّكَ قَالَ وَإِذْ

"Indeed, I will make upon the earth a successive authority (khalifah)" (Qur'an 2:30).

This verse highlights the fundamental responsibility of human beings to act as caretakers rather than exploiters of the natural world. The concept of *khalifah* emphasizes stewardship, accountability, and ethical responsibility toward all forms of creation. Within the context of environmental education, students' participation in recycling activities can therefore be interpreted as an early manifestation of this stewardship role. By engaging directly in efforts to reduce waste and preserve environmental cleanliness, students begin to understand their position as individuals entrusted with safeguarding the sustainability of Allah's creation.

The notion of environmental stewardship is further reinforced by the Qur'anic prohibition against environmental destruction. Allah commands:

إِصْلَاحِهَا بَعْدَ الْأَرْضِ فِي تُفْسِدُوا وَلَا

"And do not cause corruption upon the earth after its reformation" (Qur'an 7:56).

This verse establishes a clear ethical framework for environmental responsibility by emphasizing the importance of maintaining balance and preventing harm. Environmental degradation caused by excessive waste production and irresponsible disposal practices may therefore be viewed as forms of ecological corruption (*fasad*) that contradict Islamic teachings. In this regard, recycling activities function not merely as environmental management strategies but also as educational practices that encourage students to avoid behaviors contributing to environmental damage. The findings indicate that students increasingly recognized littering and waste accumulation as actions inconsistent with their moral and religious responsibilities.

Another important finding concerns the emergence of ecological forms of *amanah* among students. Interviews revealed that many students began to perceive environmental cleanliness as a trust that should be protected collectively. Some students expressed that caring for the environment was similar to caring for school facilities because both had been entrusted to them and should not be neglected. Others described environmental preservation as an obligation toward future generations, emphasizing that environmental damage would negatively affect those who come after them. These reflections demonstrate that students were beginning to understand *amanah* not only in interpersonal terms but also in relation to the broader ecological context.

Such perspectives represent an important development because they expand moral responsibility beyond individual interests toward collective and environmental concerns.

From an educational perspective, the internalization of *amanah* occurred through a process of experiential engagement rather than abstract instruction alone. Recycling activities provided concrete situations in which students could practice responsibility, cooperation, and environmental care. Through repeated participation, students encountered real environmental challenges and learned that individual actions contribute to broader ecological outcomes. Consequently, the concept of *amanah* became connected to tangible experiences rather than remaining a purely theological abstraction. This finding supports the argument that environmental values are more effectively internalized when students are actively involved in meaningful environmental practices that allow them to experience the consequences of responsible and irresponsible behavior directly (Ruslan et al., 2024).

The findings also resonate with contemporary discussions within Islamic ecotheology, which emphasize the interconnected relationship between God, humanity, and nature. According to Rohman et al. (2024), environmental stewardship should be understood as an extension of humanity's responsibility before Allah, whereby ecological care becomes an expression of faith and moral accountability. Likewise, Sapitri et al. (2025) argue that ecological responsibility gains greater significance when framed within Islamic ethical teachings concerning stewardship and trust. The present study confirms these perspectives by demonstrating that recycling activities can facilitate students' understanding of environmental preservation as both an ecological necessity and a religious obligation.

Viewed more broadly, the internalization of environmental stewardship through recycling activities illustrates the potential of Islamic ecotheological education to address contemporary environmental challenges. Rather than presenting environmental conservation solely as a technical issue, this approach encourages students to perceive environmental responsibility as part of their spiritual identity and moral vocation. The experiences of students at SD Negeri 5 Kota Bengkulu indicate that environmental education becomes more meaningful when ecological practices are linked to the concepts of *amanah* and *khalifah fil ardh*. Through this integration, environmental stewardship evolves from a school-based activity into a value-based commitment grounded in Islamic teachings and expressed through everyday actions.

3. The Development of Ecological Character through Plastic Waste Recycling Practices

The findings of this study indicate that plastic waste recycling activities contributed significantly to the development of ecological character among students of SD Negeri 5 Kota Bengkulu. Beyond serving as an environmental management initiative, recycling activities functioned as an educational process through which students experienced, practiced, and internalized values associated with environmental responsibility. Observations conducted throughout the research revealed that students gradually demonstrated behavioral changes reflecting greater awareness of environmental sustainability. These changes were evident not only during recycling activities but also in their daily interactions within the school environment.

Such findings affirm that environmental education becomes more meaningful when students are directly involved in practical activities that connect environmental knowledge with everyday behavior and moral responsibility (Rohman et al., 2024).

One of the most apparent character traits developed through recycling activities was discipline. During the initial stages of the program, several students still required reminders from teachers regarding proper waste disposal and waste sorting procedures. However, continuous participation gradually transformed these practices into routines. Students became increasingly accustomed to placing plastic waste in designated containers, maintaining classroom cleanliness, and complying with environmental regulations established by the school.

Based on observations, many students were able to perform these activities independently without direct supervision. This development suggests that repeated environmental practices can foster disciplined behavior by encouraging students to translate environmental values into consistent daily actions. In the context of character education, discipline emerges not merely from compliance with rules but from an internal awareness of the importance of maintaining environmental order and cleanliness (Cahyaningsih et al., 2022).

Responsibility also emerged as a prominent dimension of ecological character formation. Interviews with teachers and students revealed a growing understanding that environmental sustainability depends upon the participation of all members of the school community. Students increasingly recognized that maintaining a clean environment was not solely the responsibility of teachers, school staff, or cleaning personnel. Rather, they viewed themselves as active contributors to environmental preservation. Several students expressed concern regarding the accumulation of plastic waste and acknowledged that irresponsible disposal practices could negatively affect the comfort and health of the school environment. Such perspectives indicate the development of personal accountability, whereby students begin to understand the relationship between individual actions and collective environmental outcomes. Similar findings have been reported in studies demonstrating that environmental education can strengthen students' sense of responsibility toward ecological sustainability through active participation in environmental programs (Ruslan et al., 2024).

In addition to discipline and responsibility, recycling activities fostered cooperative behavior among students. The implementation of recycling projects frequently required students to work in groups to collect, classify, and process plastic waste materials. These collaborative activities encouraged communication, mutual assistance, and collective problem-solving. Observational data showed that students often divided tasks voluntarily and supported one another throughout the recycling process. Teachers noted that environmental activities created opportunities for students to interact with peers from different friendship groups and develop a stronger sense of collective responsibility. The emergence of cooperative behavior demonstrates that environmental education not only addresses ecological concerns but also contributes to the cultivation of positive social values. Environmental stewardship, therefore, becomes a shared commitment that is strengthened through collaboration and communal participation (Sapitri et al., 2025).

Another important finding concerns the development of creativity through recycling practices. Rather than viewing plastic waste as useless material, students gradually learned to perceive it as a resource that could be transformed into objects with practical and aesthetic value. During observations, students enthusiastically engaged in creating flower pots, decorative ornaments, pencil holders, and various classroom displays from recycled plastic materials. The creative process encouraged experimentation, imagination, and innovation while simultaneously reinforcing awareness of waste reduction. Interviews further revealed that students took pride in producing useful items from materials that would otherwise be discarded.

This finding suggests that recycling activities can broaden students' perspectives regarding environmental problems by encouraging them to seek constructive and sustainable solutions. Creativity, in this context, becomes an ecological competency that supports responsible resource utilization and environmental conservation (Rohman et al., 2024).

Environmental care emerged as the most dominant characteristic developed through participation in recycling activities. Compared to their attitudes prior to the program, students demonstrated greater concern regarding waste management, environmental cleanliness, and the consequences of plastic pollution. During field observations, students frequently reminded classmates not to litter, voluntarily collected waste found in school areas, and participated actively in maintaining the cleanliness of classrooms and playgrounds. Several students also reported implementing simple waste management practices at home, such as separating recyclable materials and reducing unnecessary plastic use.

The extension of environmentally responsible behavior beyond the school environment indicates that ecological values had begun to influence students' broader patterns of behavior. Such transferability represents an important indicator of successful environmental character education because it reflects the integration of ecological values into students' daily lives (Cahayaningsih et al., 2022; Ruslan et al., 2024).

The development of these character traits demonstrates a close relationship between recycling practices and ecological character formation. Environmental education literature emphasizes that ecological character cannot be established solely through the transmission of information concerning environmental issues. Rather, it requires opportunities for learners to experience environmental responsibility directly through meaningful participation and reflection. In the present study, recycling activities provided students with concrete experiences that enabled them to understand environmental challenges, engage in problem-solving, and observe the outcomes of their actions. Through continuous involvement, ecological values became embedded in students' attitudes and behaviors, transforming environmental awareness into practical commitment. This finding supports the argument that environmental education should prioritize experiential and participatory approaches capable of connecting environmental knowledge with value formation and behavioral change (Rohman et al., 2024).

From the perspective of Islamic environmental education, the ecological character observed among students represents an important manifestation of moral responsibility toward Allah's creation. Discipline, responsibility, cooperation, creativity, and environmental care are not merely social competencies but also ethical dispositions that support the fulfillment of human responsibilities as caretakers of the earth. In this regard, ecological character formation transcends environmental management objectives and contributes to the broader mission of Islamic education, namely the cultivation of individuals who are capable of harmonizing their relationship with Allah, fellow human beings, and the natural environment. This perspective resonates with contemporary discussions in Islamic ecotheology, which emphasize that environmental preservation should be understood as an integral component of faith-based ethical practice rather than a separate environmental concern (Sapitri et al., 2025).

Overall, the findings demonstrate that plastic waste recycling activities function as an effective medium for ecological character development among elementary school students. Through direct participation in environmental practices, students developed discipline, responsibility, cooperation, creativity, and environmental care in ways that extended beyond the boundaries of formal instruction. These character traits emerged through continuous interaction with environmental challenges and collaborative efforts to address them. Consequently, recycling activities should be viewed not only as environmental interventions but also as pedagogical strategies capable of fostering holistic character formation and strengthening the integration of environmental education with Islamic values within elementary school settings.

4. Islamic Ecotheology in Elementary Environmental Education: Reflections from SD Negeri 5 Kota Bengkulu

The findings of this study demonstrate that plastic waste recycling activities at SD Negeri 5 Kota Bengkulu cannot be understood merely as environmental management practices aimed at reducing waste accumulation within the school environment. Rather, these activities evolved into educational experiences through which students gradually developed a deeper understanding of the relationship between religious values and environmental responsibility. Throughout the observations and interviews, it became evident that recycling activities were not positioned solely as technical efforts to maintain cleanliness but were consistently connected to discussions concerning gratitude to Allah, responsibility toward creation, and the ethical obligation to preserve the natural environment.

Consequently, environmental education functioned not only as a means of developing ecological awareness but also as a medium for cultivating spiritual consciousness among students. This finding reflects the broader objective of Islamic education, which seeks to integrate intellectual, moral, and spiritual dimensions of learning into a coherent educational experience (Rohman et al., 2024).

A notable finding emerging from this research is the way students began to interpret environmental preservation as part of their religious practice. Interviews revealed that many students no longer viewed activities such as collecting plastic waste, maintaining environmental cleanliness, or participating in recycling projects merely as school assignments. Instead, they increasingly associated these actions with obedience to Allah and the fulfillment of moral responsibilities taught in Islamic education. One student explained that keeping the environment clean was important because "Allah likes cleanliness and humans should take care of what He has created." Although expressed in simple language, such reflections indicate a meaningful shift in understanding. Environmental care was no longer perceived solely as a social obligation but had begun to acquire spiritual significance. This transformation is particularly important because it illustrates how ecological behavior can become internalized when linked to religious values and personal faith commitments (Sapitri et al., 2025).

The emergence of this perspective reflects one of the central principles of Islamic ecotheology, namely the interconnected relationship between Allah, humanity, and the natural environment. Within the Islamic worldview, nature is not regarded as an autonomous entity existing independently of divine purpose. Rather, the natural world is understood as part of Allah's creation, entrusted to humanity for responsible stewardship. Human beings therefore occupy a unique position within creation as moral agents who are accountable for the way they interact with the environment. This understanding challenges anthropocentric perspectives that legitimize the unrestricted exploitation of natural resources and instead promotes an ethic of care, balance, and responsibility. The findings of this study suggest that students gradually began to recognize this interconnectedness through their participation in recycling activities, thereby developing an ecological awareness grounded in religious understanding (Rohman et al., 2024).

From the perspective of Islamic ecotheology, environmental degradation is not merely an ecological problem but also a moral and spiritual issue. Environmental destruction reflects a disruption in the harmonious relationship that should exist between human beings and the natural world. Consequently, environmental preservation becomes an expression of ethical responsibility before Allah. This perspective was evident in the reflections of several teachers who emphasized that environmental education should not be limited to scientific explanations regarding pollution and waste management. Rather, students should also be encouraged to understand the moral implications of environmental behavior and recognize that environmental stewardship constitutes part of their religious obligations. Such an approach broadens the scope of environmental education by connecting ecological concerns with spiritual values and ethical commitments (Sapitri et al., 2025).

The integration of divine, human, and environmental dimensions became particularly visible through students' evolving interpretations of recycling activities. At the beginning of the program, recycling was generally perceived as a practical activity designed to reduce waste and maintain school cleanliness. However, continuous participation and reflective guidance from teachers gradually transformed students' understanding. Students began to perceive plastic waste not simply as an environmental problem but as a challenge requiring responsible action as part of their duty before Allah. In this context, environmental practices acquired moral significance because they represented concrete expressions of gratitude, responsibility, and care for creation. Such findings suggest that environmental behavior becomes more sustainable when supported by spiritual motivations rather than relying exclusively on external regulations or institutional expectations.

The findings indicate that Islamic environmental education offers a meaningful context for shaping students' character at the elementary school level. The ecological values that emerged, such as discipline, responsibility, cooperation, creativity, and care for the environment, did not stand apart from students' religious understanding, but rather grew alongside it through everyday learning experiences. As students engaged in recycling activities, they were not only introduced to practical ways of managing waste, but also gradually began to understand the moral and spiritual reasons behind caring for the environment within an Islamic worldview. This close relationship between environmental practice and religious meaning shows how Islamic ecotheology can enrich educational processes, allowing environmental learning to extend beyond technical skills and move toward deeper moral awareness and spiritual reflection (Ruslan et al., 2024).

An important implication of these findings concerns the potential role of schools in fostering environmentally responsible citizens through faith-based environmental education. Contemporary environmental challenges often require more than scientific literacy and technical solutions; they also demand ethical commitment and value-based behavior. The experiences of students at SD Negeri 5 Kota Bengkulu suggest that integrating environmental education with Islamic teachings can strengthen students' motivation to engage in environmentally responsible actions. When environmental stewardship is understood as part of worship (*ibadah*) and accountability before Allah, ecological responsibility becomes embedded within students' moral identities rather than remaining a temporary behavioral response. This process may contribute to the development of long-term environmental commitment that extends beyond formal educational settings (Ruslan et al., 2024).

The novelty of this study lies in its demonstration that plastic waste recycling can function simultaneously as an environmental education strategy and as a medium for the internalization of Islamic ecotheological values among elementary school students. Previous studies have generally examined environmental education, character formation, or Islamic ecological ethics as separate areas of inquiry. In contrast, the present study illustrates how these dimensions can be integrated within a single educational practice. Through recycling activities, students developed ecological awareness while simultaneously strengthening their understanding of gratitude to Allah, environmental stewardship as an *amanah*, and their role as caretakers of creation. This integration highlights the potential of Islamic ecotheology as a conceptual framework for designing environmental education programs that are both environmentally relevant and spiritually meaningful.

Ultimately, the findings suggest that environmental education grounded in Islamic ecotheology offers a holistic approach to addressing contemporary ecological challenges. By integrating the relationship between Allah, humanity, and nature into educational practice, schools can cultivate forms of environmental responsibility that are rooted not only in knowledge and awareness but also in faith and moral commitment. The experiences of SD Negeri 5 Kota Bengkulu demonstrate that recycling activities can become transformative educational experiences when they are framed within a broader understanding of humanity's responsibility toward creation. In this way, environmental preservation is no longer perceived merely as a technical necessity but as a manifestation of worship, gratitude, and ethical responsibility before Allah.

Conclusion

This study concludes that plastic waste recycling activities at SD Negeri 5 Kota Bengkulu serve not only as an environmental education strategy but also as an effective medium for internalizing Islamic values among elementary school students. Through direct participation in recycling practices, students developed an understanding that environmental preservation constitutes an expression of gratitude (*syukur*) to Allah for the blessings of nature, a fulfillment of their responsibility as *khalifah fil ardhi*, and a manifestation of *amanah* in safeguarding the sustainability of creation.

The findings further demonstrate that recycling activities contributed to the development of ecological character, including discipline, responsibility, cooperation, creativity, and environmental care, through meaningful experiential learning processes. More importantly, students gradually connected environmental actions with spiritual commitments, perceiving environmental stewardship not merely as a social obligation but as a form of worship and moral accountability before Allah. These findings affirm that the integration of environmental education and Islamic ecotheology provides a holistic educational framework that strengthens the relationship between Allah, human beings, and nature. Consequently, environmental preservation can be transformed from a technical activity into a value-based educational practice that simultaneously nurtures ecological consciousness, Islamic character formation, and faith-driven environmental responsibility among young learners.

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