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Cultivating Environmental Awareness through Ayat Kauniyah-Based Ecopedagogy: A Qualitative Study in an Indonesian Islamic Junior High School

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Abstract

This study investigates how environmental awareness is cultivated through Ayat Kauniyah-Based Ecopedagogy at SMP Pembangunan Laboratorium UNP, Indonesia, and examines the challenges encountered in its implementation. The study responds to the growing ecological crisis and the need for environmental education models that integrate Islamic values with sustainable environmental practices. A qualitative case study design was employed. Data were collected through participant observation, semi-structured interviews, and document analysis involving the principal, Islamic Religious Education (PAI-BP) teachers, homeroom teachers, educational staff, and students. Data were analyzed using thematic analysis through coding, categorization, and interpretation processes, while trustworthiness was ensured through triangulation and member checking. The findings reveal that environmental awareness is cultivated through five interconnected dimensions: (1) contextual integration of *ayat kauniyah* into PAI-BP learning, (2) environmentally oriented school culture and daily habituation, (3) appreciation-based motivation through the Cleanest Classroom Award, (4) environmental communication through *muhadharah* activities, and (5) institutional support grounded in the philosophy of *"Alam Takambang Jadi Guru."* These initiatives successfully transform students' understanding of the *khalifah* concept into practical ecological responsibility. However, implementation remains constrained by limited instructional time, inconsistent student behavior, insufficient parental involvement, and weak cross-curricular collaboration. This study introduces the concept of Ayat Kauniyah-Based Ecopedagogy, which integrates Qur'anic ecological literacy, environmental habituation, spiritual motivation, environmental communication, and institutional reinforcement within an Islamic educational setting. The study contributes a conceptual framework for faith-based environmental education and expands the discourse on Islamic ecopedagogy by demonstrating how religious values can foster ecological awareness and pro-environmental behavior among students.

Keywords: Ayat Kauniyah-Based Ecopedagogy; Environmental Awareness; Islamic Environmental Education; Ecopedagogy; Environmental Character; Islamic Junior High School.

Introduction

Environmental degradation has emerged as one of the most pressing global challenges of the twenty-first century. Climate change, biodiversity loss, deforestation, pollution, and increasing frequencies of natural disasters threaten ecological sustainability and human well-being across the world. Scholars increasingly acknowledge that environmental crises are not merely technological or economic issues but are fundamentally linked to human values, ethics, and environmental consciousness (Ardoin et al., 2020). In Indonesia, this challenge is particularly evident through the increasing occurrence of hydrometeorological disasters, including floods, landslides, droughts, and extreme weather events. Data from the Indonesian National Disaster Management Agency (BNPB) indicate a substantial increase in environmental disasters during the period 2010–2024, largely associated with environmental degradation caused by unsustainable human activities (Data Bencana Indonesia, 2025).

In response to these challenges, environmental education has become a strategic approach for fostering environmental awareness and encouraging pro-environmental behavior among younger generations. Environmental awareness is generally understood as an individual's understanding, concern, and responsibility toward environmental sustainability, which subsequently influences environmentally responsible actions (Chen & Lou, 2003; Tian & Chen, 2023). Recent studies have demonstrated that environmental education significantly contributes to the development of pro-environmental behavior when it is integrated into educational practices, institutional culture, and sustainability-oriented learning environments (Qi et al., 2025; Al Husban, 2025). Likewise, sustainable schools and environmentally oriented curricula have been shown to play a crucial role in shaping students' ecological consciousness and environmental responsibility (Petkou et al., 2025; Ni et al., 2024).

Within the field of environmental education, ecopedagogy has emerged as a transformative educational framework that emphasizes critical awareness, ecological responsibility, and the interconnectedness between humans and nature. Rooted in Freirean critical pedagogy, ecopedagogy seeks not only to increase environmental knowledge but also to cultivate ecological consciousness and social responsibility that lead to sustainable action (Misiaszek, 2016, 2020, 2022). Ecopedagogy encourages learners to critically reflect on environmental issues while developing ethical commitments toward environmental preservation. Empirical studies have reported that ecopedagogical approaches can effectively enhance environmental awareness, environmental literacy, and pro-environmental attitudes among students (Mulyanie & Setiawan, 2024; Korsant, 2024). However, most ecopedagogy studies have been developed within secular educational contexts, while investigations integrating religious worldviews, particularly Islamic perspectives, remain relatively limited.

From an Islamic perspective, environmental stewardship constitutes an integral component of faith and ethical responsibility. The Qur'an repeatedly emphasizes the harmonious relationship between humans and nature through concepts such as *khalifah* (stewardship), *amanah* (trust), and *mizan* (balance). Environmental degradation is explicitly addressed in QS. Ar-Rum [30]:41, which states that corruption on land and sea occurs because of human actions, while QS. Ali Imran [3]:190 invites believers to contemplate natural phenomena as signs of God's greatness. According to Shihab (2002), these verses affirm that environmental preservation is not merely a social obligation but also a spiritual responsibility rooted in faith. Contemporary scholarship further highlights that Islamic environmental ethics provide a comprehensive framework for ecological stewardship through principles of justice, moderation, sustainability, and collective responsibility (Helfaya et al., 2018; Kurbiyanto et al., 2024; Muhammad et al., 2024). Recent studies have also emphasized that Islamic teachings can serve as a powerful foundation for environmental education by integrating religious values with ecological consciousness (Setianingrum et al., 2024; Arafa, 2026).

A central concept within Islamic environmental education is *ayat kauniyah*, namely the signs of God manifested in the natural universe. Through reflection upon nature, learners are encouraged to develop not only cognitive understanding but also spiritual awareness and ecological responsibility. The concept of *ayat kauniyah* positions nature as a living classroom where students can observe divine signs while cultivating environmental ethics and sustainable behavior. Previous studies have highlighted the potential of Islamic educational institutions to integrate environmental values into curricula and learning activities (Taufiqurrochman, 2025; Romlah et al., 2024). Nevertheless, much of the existing literature focuses primarily on curriculum content, environmental ethics, or theological foundations, while limited attention has been given to how *ayat kauniyah* is operationalized through school culture, learning practices, and institutional programs to cultivate environmental awareness among students.

Furthermore, although previous studies have discussed Islamic environmental ethics (Bakar et al., 2025; Ragozina, 2023), Qur'anic environmental responsibility (Helfaya et al., 2018), environmental education in Islamic institutions (Setianingrum et al., 2024), and the integration of environmental values into Islamic curricula (Taufiqurrochman, 2025), few studies have specifically examined the implementation of *ayat kauniyah*-based ecopedagogy within formal Islamic schooling. Existing research tends to emphasize normative theological discussions rather than exploring how ecological values are translated into concrete educational practices that shape students' environmental awareness and behavior. Consequently, there remains a significant gap in understanding how Islamic educational institutions can transform Qur'anic ecological teachings into lived educational experiences capable of fostering environmental consciousness.

This gap is particularly relevant in the Indonesian context, where Islamic schools possess substantial potential to integrate religious teachings

with environmental education. Preliminary observations conducted at SMP Pembangunan Laboratorium UNP revealed that the school has implemented various environmental initiatives grounded in Islamic values and *ayat kauniyah*. However, the processes through which these initiatives cultivate students' environmental awareness, as well as their pedagogical and institutional dimensions, have not been systematically investigated. Understanding these processes is important not only for enriching the discourse on Islamic environmental education but also for developing practical models of environmental learning that integrate religious values with ecological sustainability.

Therefore, this study aims to explore how environmental awareness is cultivated through *ayat kauniyah*-based ecopedagogy in an Indonesian Islamic junior high school. Specifically, the study investigates the educational strategies, school culture, and institutional practices employed to foster students' environmental consciousness. By doing so, this research contributes to the growing literature on Islamic environmental education by proposing an empirical understanding of how *ayat kauniyah* can function as a pedagogical foundation for ecopedagogical practices. The study further contributes to the development of an Islamic ecopedagogy framework that bridges Qur'anic ecological values, environmental education, and school-based sustainability initiatives.

Method

This study employed a qualitative approach using a case study design to explore how environmental awareness is cultivated through *ayat kauniyah*-based ecopedagogy at SMP Pembangunan Laboratorium Universitas Negeri Padang (UNP). A qualitative case study was considered appropriate because the research sought to understand a contemporary educational phenomenon within its real-life context and to capture participants' experiences, meanings, and interpretations regarding environmental education practices embedded in Islamic values (Yin, 2018). Consistent with Assyakurrohim et al. (2022), qualitative descriptive inquiry enables researchers to provide a comprehensive and contextually grounded understanding of social phenomena. Furthermore, qualitative case studies are particularly suitable for investigating educational processes that involve interactions among values, institutional culture, and learning practices that cannot be adequately explained through quantitative measurement alone (Merriam & Tisdell, 2016). This approach allowed the researchers to examine how ecological values derived from *ayat kauniyah* were translated into daily educational practices and how these practices contributed to students' environmental awareness (Sahra et al., 2025).

The study was conducted at SMP Pembangunan Laboratorium UNP, an Islamic-oriented junior high school recognized for implementing environmental programs integrated with religious education. The school was selected purposively because it provides a unique context in which environmental learning is linked with Qur'anic teachings and school-wide

environmental initiatives. The selection of an information-rich case is consistent with qualitative sampling principles, which prioritize depth of understanding rather than statistical generalization (Patton, 2015).

Research participants were selected using purposive sampling based on their direct involvement in environmental education activities and school environmental programs. A total of 18 participants were involved in the study, consisting of one principal, three Islamic Religious Education (PAI) teachers, two homeroom teachers, two school cleaning staff members, and ten Grade VIII students. The principal was selected because of his role in formulating school policies, while teachers were chosen due to their involvement in implementing *ayat kauniyah*-based learning activities. Cleaning staff were included because they actively participated in maintaining environmental programs and school cleanliness culture. Students were selected to represent the primary beneficiaries of environmental education initiatives and to provide insights into their experiences and environmental awareness development. The diversity of participants enabled the researchers to obtain multiple perspectives and strengthen the richness of the data.

Data were collected over a four-month period through participant observation, semi-structured interviews, and document analysis. Observations were conducted regularly during classroom learning activities, environmental campaigns, waste management programs, school gardening activities, and other environmentally oriented school events. Observation enabled the researchers to directly examine interactions, behaviors, and environmental practices occurring within the school environment. Field notes were systematically recorded to document participants' actions, environmental routines, and contextual factors influencing environmental awareness development.

Semi-structured interviews were conducted individually with all participants using interview protocols developed from the concepts of environmental awareness, ecopedagogy, and Islamic environmental education. This interview format allowed participants to express their experiences and perspectives freely while ensuring that essential research topics were consistently explored across interviews (Brinkmann & Kvale, 2018). Each interview lasted approximately 40–60 minutes and was audio-recorded with participants' consent. Follow-up interviews were conducted when clarification or deeper exploration of emerging themes was required.

Document analysis was employed to complement observational and interview data. Documents examined included school vision and mission statements, environmental program reports, learning modules, lesson plans, student activity reports, environmental campaign materials, photographs, and other institutional records related to environmental education. Document analysis served as an important source of contextual information and facilitated triangulation across different data sources (Bowen, 2009).

In qualitative research, the researcher functions as the primary instrument for data collection and interpretation. Therefore, reflexivity was

continuously practiced throughout the research process. The researchers maintained reflective field journals to document personal assumptions, emerging interpretations, methodological decisions, and potential biases. Reflexive practices were conducted to enhance transparency and minimize the influence of researcher subjectivity on data interpretation (Creswell & Poth, 2018).

To ensure the trustworthiness of the findings, several validation strategies were employed. Credibility was established through prolonged engagement in the field, triangulation of data sources, member checking, and peer debriefing. Source triangulation involved comparing information obtained from principals, teachers, staff members, and students. Method triangulation was achieved by integrating observations, interviews, and document analysis (Mekarisce, 2020; Sugiyono, 2019). Time triangulation was also conducted by collecting data at different periods to examine the consistency of participants' responses and observed behaviors (Benny et al., 2021; Santoso & Hakimah, 2023). Member checking was performed by returning interview summaries and preliminary interpretations to participants for verification. Dependability was strengthened through maintaining detailed documentation of research procedures and analytical decisions, while confirmability was supported through audit trails and reflexive notes. Transferability was enhanced by providing rich descriptions of the research context and participants, enabling readers to assess the applicability of findings in similar educational settings (Lincoln & Guba, 1985).

Data analysis followed the interactive model proposed by Miles, Huberman, and Saldaña (2020), consisting of data collection, data condensation, data display, and conclusion drawing. The analytical process began simultaneously with data collection and continued iteratively throughout the study. Interview recordings were transcribed verbatim and combined with observation notes and documentary evidence. During the first cycle of analysis, open coding was conducted to identify meaningful units related to environmental awareness, ecological values, environmental behavior, religious practices, and school environmental culture. Codes with similar meanings were subsequently grouped into categories through axial coding. In the second cycle, thematic coding was applied to identify broader patterns and relationships among categories (Saldaña, 2021).

The emerging themes were continuously compared across different data sources using a constant comparative technique to ensure analytical rigor and consistency. Data reduction involved selecting, focusing, simplifying, and organizing information relevant to the research objectives (Fitria, 2022). Data displays were then developed in the form of thematic matrices, narrative descriptions, and conceptual diagrams to facilitate interpretation and identify relationships among themes (Ahlan et al., 2023). Finally, conclusions were generated through an iterative process of interpretation, verification, and comparison with existing theories and previous studies, allowing the researchers to construct a comprehensive understanding of how *ayat*

kauniyah-based ecopedagogy contributes to cultivating environmental awareness among students (Muslimin et al., 2021).

Results and Discussion

Results

Cultivating Environmental Awareness through Ayat Kauniyah-Based Ecopedagogy

The findings reveal that environmental awareness at SMP Pembangunan Laboratorium UNP is cultivated through a comprehensive ecopedagogical approach that integrates Qur'anic ecological values into both academic and non-academic activities. Data obtained from interviews, observations, and document analysis indicate that environmental awareness is not developed solely through classroom instruction but is reinforced through school culture, student participation, institutional policies, and religiously grounded environmental practices. Five major themes emerged from the analysis: (1) integration of *ayat kauniyah* into Islamic Religious Education (PAI-BP), (2) environmentally oriented school culture and daily habituation, (3) appreciation-based environmental motivation, (4) integration of environmental themes into *muhadharah* activities, and (5) institutional policy support.

Integration of Ayat Kauniyah into Islamic Religious Education

One of the most fundamental efforts undertaken by the school is the integration of *ayat kauniyah* into Islamic Religious Education and Character Development (PAI-BP) lessons. Teachers deliberately connect Qur'anic verses related to environmental stewardship, such as QS. Ar-Rum [30]:41, QS. Al-A'raf [7]:56, QS. Al-Baqarah [2]:30, and QS. Ali Imran [3]:190, with environmental issues that students encounter in their daily lives. As a result, Qur'anic teachings are presented not merely as texts to be memorized but as ethical foundations for ecological responsibility.

This contextual learning approach is designed to foster students' awareness that environmental preservation constitutes an integral part of worship (*ibadah*) and human responsibility as *khalifah* (stewards of the Earth). A PAI teacher explained: "When we discuss QS. Ar-Rum verse 41, for example, we relate it to environmental conditions around us so that students do not merely know the text of the verse but also understand its meaning and responsibility."

The findings indicate that this pedagogical strategy contributes to changes in students' environmental perspectives. Students begin to perceive environmental conservation as a practical manifestation of Islamic teachings. One student stated: "This makes me more aware that littering is wrong and contradicts Islamic teachings."

These findings suggest that the integration of *ayat kauniyah* facilitates the transformation of religious understanding from a purely cognitive

dimension into practical ecological awareness. Students increasingly interpret the concept of *khalifah* as a concrete obligation to protect and preserve the environment.

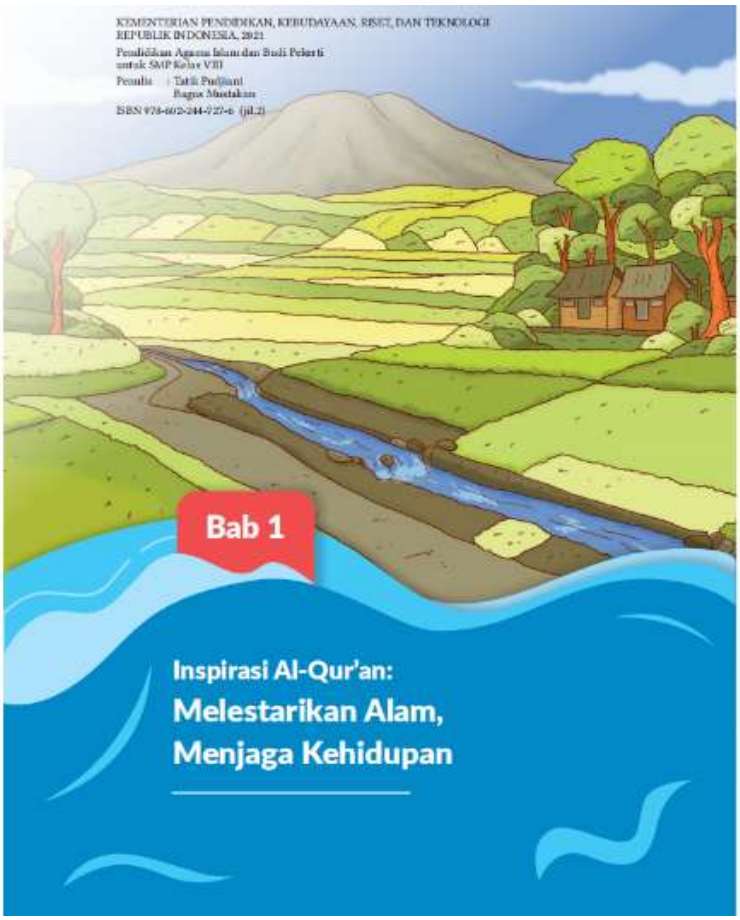


Figure 1. Integration of Environmental Preservation Themes in the Grade VIII Islamic Religious Education and Character Development (PAI-BP) Textbook

Figure 1 presents the opening page of Chapter 1 in the official Grade VIII Islamic Religious Education and Character Development textbook published by the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia in 2021. The chapter, entitled *"Qur'anic Inspiration: Preserving Nature, Sustaining Life,"* serves as the primary instructional resource supporting the integration of environmental values into Islamic education.

Document analysis shows that the textbook functions as an important pedagogical instrument for introducing ecological responsibility through Qur'anic teachings. By linking environmental preservation with religious obligations, the textbook provides students with a conceptual framework for understanding the relationship between faith and environmental stewardship. The instructional materials support the school's broader effort to cultivate environmental awareness through *ayat kauniyah*-based ecopedagogy.

Environmentally Oriented School Culture and Daily Habituation

Environmental education at SMP Pembangunan Laboratorium UNP is not limited to classroom instruction. Findings indicate that the school systematically reinforces environmental awareness through daily practices and institutional culture. These efforts include classroom cleaning duties (*piket kebersihan*), weekly *Jumat Bersih* (Clean Friday) activities, and the placement of environmental slogans accompanied by Qur'anic verses throughout school corridors.

The principal explained: "We have long established a culture of daily classroom cleaning duties and Clean Friday activities so that environmental awareness becomes a reminder for all school members."

Observational data demonstrate that these routines have contributed to students' environmental discipline. Students were frequently observed disposing of waste properly, participating actively in cleaning activities, and maintaining classroom cleanliness.

A member of the educational staff confirmed this observation: "Students are now more disciplined in throwing garbage into bins, especially since the school actively conducts Clean Friday activities and displays Qur'anic messages about environmental preservation on school walls."

The findings suggest that repeated environmental practices play a significant role in shaping students' ecological habits. Through continuous exposure to environmentally responsible behaviors and visual reminders rooted in Islamic teachings, environmental awareness becomes embedded within the school's collective culture.

Appreciation-Based Motivation through the Cleanest Classroom Program

Another strategy employed by the school involves the implementation of a monthly Cleanest Classroom Award. This program aims to strengthen students' motivation to maintain cleanliness and environmental quality within their learning environments.

Unlike conventional reward systems, the program is closely linked to Islamic values. Teachers consistently emphasize that cleanliness is not merely a school requirement but also a manifestation of faith and religious commitment.

The principal explained: "The cleanest classroom program has had a significant positive impact. Students become more motivated to maintain cleanliness because rewards are provided. We also connect this program with Islamic values that cleanliness is part of faith."

The findings reveal that the program generates outcomes beyond maintaining classroom cleanliness. Observations indicate that students voluntarily bring ornamental plants, organize classroom decorations, and participate in greening initiatives without direct instruction from teachers. Such actions reflect the emergence of personal initiative and environmental responsibility among students.

These findings suggest that appreciation-based strategies can facilitate the internalization of ecological values. Environmental stewardship gradually shifts from being perceived as a compulsory school rule to becoming a shared cultural and spiritual commitment among students.

Integration of Environmental Themes into Muhadharah Activities

An additional innovation identified in this study is the integration of environmental themes into *muhadharah* activities, which are conducted regularly every Friday morning. Traditionally intended to develop students' public speaking and religious communication skills, *muhadharah* has been expanded to include discussions of environmental issues from Islamic perspectives.

Students are guided by PAI teachers and homeroom teachers to prepare and deliver short speeches addressing environmental problems through references to the Qur'an and Hadith. A PAI teacher explained: "In muhadharah activities, we intentionally include environmental themes. Students are encouraged to connect Qur'anic verses about nature with environmental conditions around them. This is intended not only to deepen their understanding but also to enable them to communicate environmental concern to others."

The findings indicate that *muhadharah* functions as an important platform for strengthening environmental literacy while simultaneously developing students' communication skills. Through active participation, students become not only recipients of environmental knowledge but also agents who disseminate ecological values to their peers and the wider school community.



Figure 2. Implementation of Muhadharah Activities as a Medium for Communicating Environmental Awareness Based on Ayat Kauniyah

Figure 2 illustrates students participating in a regular *muhadharah* session conducted in the school's open area every Friday morning. Within the context of this study, *muhadharah* serves as an ecopedagogical medium through which students communicate environmental messages grounded in Qur'anic teachings and Hadith.

The activity demonstrates how environmental awareness is reinforced through religious communication practices. By encouraging students to articulate environmental concerns publicly, the school promotes the dissemination of ecological values while strengthening students' confidence and leadership skills. Consequently, environmental awareness extends beyond individual understanding and becomes part of a collective discourse within the school community.

Institutional Policy Support

The sustainability of environmental awareness programs at SMP Pembangunan Laboratorium UNP is strongly supported by institutional policies. Findings indicate that environmental education is embedded within the school's vision and mission, which explicitly emphasize the development of environmentally conscious graduates.

The school also adopts the Minangkabau philosophy *"Alam Takambang Jadi Guru"* (Nature as the Greatest Teacher), providing a culturally relevant foundation for environmental education. The principal stated: "Institutionally, environmental awareness has become part of our school vision and mission. We want our students not only to be academically and religiously competent but also to possess strong ecological awareness based on Qur'anic values."

Document analysis further confirms that environmental values are integrated into school programs, regulations, and extracurricular activities. This institutional commitment ensures that environmental education is implemented systematically and consistently rather than as a temporary initiative.

Overall, the findings demonstrate that environmental awareness at SMP Pembangunan Laboratorium UNP is cultivated through a multidimensional ecopedagogical framework that integrates Qur'anic teachings, environmental habituation, appreciation-based motivation, student participation, and institutional support. Together, these elements contribute to the development of environmentally responsible behaviors grounded in Islamic values.

Challenges in Implementing the Program

Despite the positive outcomes identified above, the study also found several challenges that constrain the effectiveness of environmental awareness initiatives.

1. Limited Instructional Time for PAI-BP

The primary challenge concerns the limited instructional hours allocated to PAI-BP. Teachers reported difficulties in discussing environmental

themes comprehensively because they must simultaneously cover mandatory curriculum content.

A PAI teacher stated: "PAI instructional time is limited, while there is a large amount of material that must be covered. Environmental themes are integrated, but they cannot always be discussed in depth because we must follow curriculum targets."

2. Inconsistency Between Knowledge and Behavior

Another challenge involves the discrepancy between students' environmental knowledge and their actual behavior. Although students understand Qur'anic teachings regarding environmental preservation, observations revealed that some still engage in environmentally irresponsible practices, such as littering.

A homeroom teacher explained: "Our greatest challenge is transforming knowledge into actual behavior. Many students know that littering is wrong and contradicts Islamic values, but some still do it."

3. Limited Parental Involvement

The findings also reveal that environmental values cultivated at school are not always reinforced at home. Limited parental involvement reduces the continuity of environmental habituation beyond the school environment.

The principal stated: "We have done our part at school, but parental support is essential. If environmental values are not reinforced at home, our efforts become less effective."

4. Weak Cross-Curricular Collaboration

The final challenge concerns the limited collaboration among subject teachers. Environmental education remains largely concentrated within PAI-BP, while opportunities for integration with other subjects, such as science and social studies, have not been fully utilized.

The principal acknowledged: "Environmental awareness should not be taught only through Islamic education. It should become a shared commitment among all teachers. Unfortunately, cross-subject coordination on environmental themes has not yet been systematically organized."

These challenges indicate that while the school has successfully established an *ayat kauniyah*-based ecopedagogical framework, further efforts are required to strengthen instructional integration, behavioral consistency, family involvement, and interdisciplinary collaboration to ensure the long-term sustainability of environmental awareness initiatives.

Discussion

Ayat Kauniyah-Based Ecopedagogy as a Strategy for Cultivating Environmental Awareness

The findings demonstrate that environmental awareness at SMP Pembangunan Laboratorium UNP is cultivated through a multidimensional ecopedagogical framework that integrates Qur'anic teachings, environmental habituation, student participation, and institutional commitment. These findings reinforce the argument that environmental education becomes more meaningful when ecological values are contextualized within students' religious and sociocultural realities rather than being delivered solely as scientific knowledge.

From an ecopedagogical perspective, the integration of *ayat kauniyah* into Islamic Religious Education (PAI-BP) represents a transformative educational practice that encourages students to critically reflect on the relationship between humans and nature. Ecopedagogy emphasizes that environmental education should move beyond information transmission and foster ecological consciousness capable of influencing individual and collective behavior (Misiaszek, 2020; Misiaszek, 2022). In this study, Qur'anic verses such as QS. Ar-Rum [30]:41 and QS. Al-Baqarah [2]:30 functioned not merely as theological references but as ethical foundations for environmental responsibility. The contextualization of these verses with real environmental problems enabled students to reinterpret the concept of *khalifah* as an active obligation to protect the Earth rather than a purely doctrinal concept.

This finding supports previous studies showing that Islamic environmental education can effectively strengthen ecological awareness when environmental stewardship is framed as a religious responsibility (Helfaya et al., 2018; Bakar et al., 2025). It also corroborates the argument that environmental values rooted in faith traditions tend to generate stronger internal motivation than environmentally oriented messages that rely solely on scientific reasoning (Mulyanie & Setiawan, 2024). In the context of this study, students demonstrated a growing awareness that environmentally destructive behavior, such as littering, contradicts Islamic teachings, indicating that religious values serve as an important mechanism for ecological value internalization.

Another important finding concerns the role of environmental habituation through daily cleaning duties, *Jumat Bersih* activities, and Qur'anic environmental messages displayed throughout the school environment. These practices illustrate that environmental awareness is not developed through cognitive learning alone but through repeated behavioral experiences embedded within school culture. This finding aligns with the concept of ecological literacy proposed by Ardoin et al. (2020), which emphasizes that environmental awareness emerges through the interaction of knowledge, attitudes, and environmentally responsible actions. The school's environmental culture thus functions as a practical extension of classroom

learning, enabling students to repeatedly enact ecological values in their daily activities.

The findings further demonstrate that environmental awareness is strengthened through motivational mechanisms. The Cleanest Classroom Award program encouraged students to voluntarily engage in environmental initiatives, including classroom greening and plant maintenance. Such outcomes indicate that environmental responsibility gradually shifted from externally regulated behavior to internally motivated action. This transformation reflects what Shihab (2002) describes as the practical manifestation of the *khalifah* concept, whereby human beings are entrusted with the responsibility to maintain harmony between humanity and nature. Furthermore, the findings resonate with the concept of *green spirituality* proposed by Zulaika et al. (2025), which argues that ecological behavior becomes more sustainable when environmental practices are perceived as spiritual commitments rather than institutional obligations.

The incorporation of environmental themes into *muhadharah* activities represents another significant contribution of this study. Existing environmental education programs in schools frequently focus on environmental knowledge acquisition but provide limited opportunities for students to communicate ecological concerns publicly. In contrast, the findings reveal that *muhadharah* functions as a unique pedagogical space where students become active disseminators of environmental values. Through environmental speeches grounded in Qur'anic teachings and Hadith, students are encouraged not only to understand environmental issues but also to advocate ecological responsibility within their social environment.

This finding supports recent research suggesting that environmental awareness is strengthened when learners actively participate in environmental discourse and knowledge dissemination processes (Qi et al., 2025; Tian & Chen, 2023). By positioning students as communicators rather than passive recipients of information, the school creates opportunities for the development of environmental agency, which constitutes an important dimension of contemporary ecopedagogy (Misiaszek, 2016).

The study also highlights the importance of institutional support in sustaining environmental awareness initiatives. The explicit inclusion of environmental values within the school vision and mission, combined with the Minangkabau philosophy *"Alam Takambang Jadi Guru,"* provides a culturally relevant and organizationally legitimate foundation for environmental education. This finding confirms previous studies emphasizing that successful environmental education requires institutional alignment between educational objectives, school culture, leadership commitment, and curriculum implementation (Khoir & Rusik, 2024; Setianingrum et al., 2024). Without such institutional support, environmental education initiatives often remain fragmented and dependent upon individual teacher initiatives.

Collectively, these findings suggest that the cultivation of environmental awareness is most effective when ecological values are integrated across

cognitive, affective, behavioral, spiritual, and institutional dimensions. The present study therefore extends existing scholarship on Islamic environmental education by proposing an Ayat Kauniyah-Based Ecopedagogy Framework, in which environmental awareness emerges through the interaction of five interconnected dimensions: (1) Qur'anic ecological literacy, (2) environmental habituation, (3) spiritual motivation, (4) environmental communication and participation, and (5) institutional reinforcement. This framework contributes to the growing literature on faith-based environmental education by demonstrating how religious values can function as catalysts for ecological consciousness and pro-environmental behavior in Islamic school contexts.

The Complexity of Challenges in Implementing Environmental Awareness Programs

Despite the positive outcomes identified in this study, the implementation of *ayat kauniyah*-based environmental awareness programs remains constrained by several interconnected challenges. These challenges indicate that cultivating environmental awareness is a long-term educational process that requires support beyond classroom instruction.

The first challenge concerns limited instructional time within PAI-BP. Teachers reported difficulties in discussing environmental issues comprehensively because curriculum requirements necessitate the completion of numerous learning objectives within a restricted timeframe. This finding reflects a broader challenge in environmental education, where sustainability-related topics are frequently marginalized within crowded curricula (Ni et al., 2024). Consequently, environmental themes are often treated as supplementary content rather than as integral components of educational practice.

The second challenge involves the inconsistency between environmental knowledge and actual behavior. Although students demonstrated awareness of Qur'anic teachings concerning environmental stewardship, some continued to engage in environmentally irresponsible practices such as littering. This finding reflects the well-documented knowledge–behavior gap in environmental education research, whereby increased environmental knowledge does not automatically translate into pro-environmental behavior (Petkou et al., 2025). From an ecopedagogical perspective, behavioral transformation requires continuous reinforcement through lived experiences, social modeling, and supportive environments rather than relying solely on cognitive understanding.

A further challenge concerns the limited involvement of parents in reinforcing environmental values outside school. The findings indicate that environmental habits cultivated at school are not always sustained at home, reducing the continuity of ecological character formation. This observation is consistent with previous studies emphasizing that environmental awareness develops more effectively when schools and families collaboratively reinforce environmental values (Taufikin & Yusdani, 2025). Without parental

engagement, students may receive inconsistent environmental messages across different social contexts.

Finally, the study identified weak collaboration among subject teachers as a significant structural constraint. Environmental education remains largely concentrated within PAI-BP, while opportunities for interdisciplinary integration with science, social studies, and other subjects remain underutilized. This finding supports recent arguments that sustainability education should adopt a whole-school approach involving cross-curricular collaboration rather than being confined to a single subject area (Qi et al., 2025; Setianingrum et al., 2024). Environmental awareness is inherently interdisciplinary, requiring scientific understanding, ethical reflection, social responsibility, and behavioral practice to be integrated within a coherent educational framework.

Taken together, these challenges reveal that environmental awareness cannot be cultivated solely through religious instruction. Sustainable ecological consciousness requires alignment among curriculum structures, school culture, family support systems, and interdisciplinary collaboration. Therefore, future environmental education initiatives should move beyond subject-specific interventions toward more comprehensive whole-school and community-based approaches capable of sustaining ecological values across multiple educational contexts.

Conclusion

This study demonstrates that Ayat Kauniyah-Based Ecopedagogy plays a more significant role in cultivating environmental awareness than is commonly assumed in Islamic educational settings. The findings reveal that environmental awareness among students is not developed solely through classroom instruction but through the interaction of five interconnected dimensions: the contextual integration of *ayat kauniyah* into PAI-BP learning, environmentally oriented school culture and habituation, appreciation-based motivation, environmental communication through *muhadharah* activities, and institutional support grounded in the philosophy of *"Alam Takambang Jadi Guru."* These findings suggest that environmental awareness can be transformed from a cognitive understanding of religious teachings into concrete ecological behavior when environmental values are continuously reinforced through academic, cultural, spiritual, and institutional practices. Consequently, the study challenges the conventional assumption that environmental education in Islamic schools is primarily dependent on classroom-based religious instruction and highlights the importance of a holistic ecopedagogical approach.

From a scholarly perspective, this study strengthens previous findings regarding the contribution of Islamic values to environmental education while extending the discussion through the concept of Ayat Kauniyah-Based Ecopedagogy. The findings confirm that Qur'anic ecological teachings can serve as effective foundations for environmental awareness and pro-

environmental behavior. At the same time, the study questions the adequacy of approaches that rely exclusively on knowledge transmission without providing opportunities for environmental habituation, participation, and institutional reinforcement. By proposing a framework that integrates religious literacy, environmental practices, spiritual motivation, environmental communication, and organizational commitment, this study contributes a conceptual perspective that enriches the growing body of literature on Islamic environmental education and ecopedagogy.

Nevertheless, this study has several limitations. The research was conducted in a single Islamic junior high school and involved a relatively limited number of participants, making the findings difficult to generalize to broader educational contexts. Furthermore, the study focused primarily on the experiences and perceptions of participants within a specific sociocultural setting. Therefore, future research is needed to examine the applicability of the proposed framework across different educational institutions, regions, and cultural contexts. Studies involving larger samples, mixed-methods designs, or longitudinal approaches would provide a more comprehensive understanding of how ecological awareness develops and is sustained over time.

Based on these findings, several recommendations can be proposed. Schools should strengthen interdisciplinary collaboration by integrating environmental themes across multiple subjects rather than confining them to Islamic Religious Education alone. Greater engagement with parents and local communities is also necessary to ensure continuity between environmental values cultivated at school and those practiced at home. In addition, policymakers and educational leaders are encouraged to develop institutional policies that support faith-based environmental education as part of broader sustainability initiatives. For future research, classroom action research focusing on specific ecopedagogical interventions and comparative studies involving multiple schools are recommended to refine and validate the Ayat Kauniyah-Based Ecopedagogy framework in diverse educational settings.

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