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Prophetic Ecopedagogy in Social Studies Learning: Integration of Islamic Values and SDGs Literacy to Strengthen Ecological Intelligence among Junior High School Students

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Abstract: The knowledge–action gap remains a fundamental challenge in environmental education in Indonesia, as students' ecological literacy does not consistently translate into concrete pro-environmental behavior. This study aims to examine the integration of Islamic values and Sustainable Development Goals (SDGs) literacy within Social Studies learning through a Prophetic Ecopedagogy approach to strengthen students' ecological intelligence. A qualitative case study design was employed at SMP Muhammadiyah 3 Yogyakarta. Data were collected through participant observation, in-depth interviews, and document analysis, and were analyzed using the interactive model of Miles, Huberman, and Saldaña. The findings revealed three main outcomes. First, the Social Studies curriculum shifted from a predominantly hidden curriculum to an explicit curriculum through the formal integration of SDGs targets into lesson planning. Second, the instructional process reflects three pillars of Prophetic Ecopedagogy: Transcendence (environmental stewardship as a theological mandate), Humanization (the climate crisis framed as a humanitarian issue), and Liberation (freedom from consumerist culture through the Zero Waste movement). Third, this approach effectively fosters students' ecological intelligence, particularly in systemic thinking and digital environmental advocacy. However, behavioral gaps persist in abstract energy conservation practices, in contrast to strong compliance in tangible waste management activities.

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INTRODUCTION

The global climate crisis has evolved beyond a mere environmental issue into a profound existential threat to the sustainability of human civilization and the stability of the biosphere. The latest scientific report from the World Meteorological Organization confirms that the Earth is currently on an alarming warming trajectory, with the 1.5°C temperature threshold highly likely to be exceeded within the coming decades if no radical and systemic interventions are undertaken (WMO, 2024). The impacts of this warming have become increasingly evident across the globe, manifested in the rising frequency of extreme weather events, the accelerated melting of polar ice that disrupts global socio-economic dynamics (Haq et al., 2025), and the growing vulnerability of tropical forests to fires and droughts, which threatens their critical function as carbon sinks (Boulanger et al., 2025). At the same time, the degradation of freshwater ecosystems and the loss of biodiversity signal that the Earth's carrying capacity is reaching a critical threshold (Nimma et al., 2025). In response to this escalating crisis, the international community, through various multilateral forums, continues to urge stronger climate mitigation commitments to ensure the planet remains habitable for future generations (Dafnomilis et al., 2025; WWF, 2022).

In the national context, Indonesia, as an archipelagic country with the third-largest tropical forest in the world, occupies a paradoxical position: it holds a strategic role while simultaneously facing high vulnerability to climate change. The Indonesian government has demonstrated strong political commitment by setting a Net Zero Emission (NZE) target by 2060 or sooner (Acharya et al., 2025), alongside the implementation of Indonesia's FOLU Net Sink 2030 initiative aimed at enhancing carbon

absorption in the forestry and land-use sectors (KLHK, 2022). This decarbonization agenda serves as a key pillar in the transition toward a green economy as part of the broader vision of Indonesia Emas 2045, which aspires to transform Indonesia into a sovereign, just, and prosperous developed nation (Kementerian PPN/Bappenas, 2019; IRID, 2022). However, the success of these macro-level policies is highly dependent on micro-level behavioral changes within society. Without a transformation toward environmentally responsible lifestyles at the individual level, these ambitious targets risk remaining merely rhetorical commitments.

At this point, education plays a pivotal role. It is widely regarded as a strategic instrument for fostering collective awareness and preparing future generations with the resilience and competencies needed to confront ecological challenges. However, in practice, environmental education in Indonesia still faces a fundamental challenge known as the Knowledge–Action Gap. Empirical studies revealed that high levels of environmental literacy among students do not automatically translate into consistent pro-environmental behavior (Yang et al., 2025). This finding is reinforced by national survey data indicating that although the majority of the public expresses concern about climate change, their understanding of concrete climate actions remains relatively limited (Indikator Politik Indonesia, 2024).

Scholars in education and environmental psychology identify several underlying factors contributing to this gap. First, psychological barriers among adolescents, such as unmanaged eco-anxiety and limited socio-affective competencies, often lead to a sense of powerlessness in addressing environmental issues (Zhang & Cao, 2025; Im & Jue, 2024). Second, conventional environmental education tends to be dominated by a cognitive-scientific approach that lacks meaningful engagement with students' emotional and ethical dimensions. The curriculum is often rooted in an anthropocentric paradigm that positions humans at the center while reducing nature to a mere instrument for economic utility (Frigo et al., 2024). This approach fails to cultivate a deep emotional and spiritual connection with nature (nature connectedness), which is essential for fostering pro-environmental behavior (Lumber et al., 2017).

To overcome this stagnation, a philosophical reorientation in environmental education is necessary, shifting from anthropocentrism toward biocentrism or ecocentrism. Within this perspective, nature is recognized as possessing intrinsic value that must be respected regardless of its utility to humans (Taylor, 2022; Keraf, 2010). Climate systems and non-human entities are no longer viewed as mere objects but as part of a moral community with the right to exist and flourish, positioning humans as equal members rather than dominant rulers (Svitačová, 2024).

As an operationalization of this paradigm, Eco-Pedagogy emerges as a critical pedagogical alternative. Unlike traditional environmental education, which often remains apolitical and limited to technical practices such as recycling, eco-pedagogy seeks to challenge the political, economic, and cultural structures that underpin ecological degradation (Kopnina, 2020; Yasida, 2020). Its goal is not only to enhance knowledge but also to develop critical consciousness and empower students to act as agents of social transformation (Jakupec, 2021). However, eco-pedagogy as developed in Western contexts is often secular in nature. In a predominantly religious society such as Indonesia, this approach requires integration with spiritual values to become more culturally relevant and socially accepted.

In this regard, Islamic perspectives offer a strong theological foundation for environmental education. The concept of khalifah fil ardh (stewardship on Earth) emphasizes humanity's divine responsibility to maintain ecological balance (Hudha et al., 2019). Studies on Muslim environmentalisms demonstrate that religious narratives can foster stronger, more enduring intrinsic motivation compared to purely secular moral appeals (Gade, 2019). Within this framework, environmental degradation is understood as a violation of divine trust, making environmental stewardship an act of worship. Therefore, integrating critical eco-pedagogy with prophetic values presents a promising approach to bridging the gap between knowledge and action.

Social Studies (*Ilmu Pengetahuan Sosial* [IPS]) occupies a pivotal role in advancing environmental education because it enables students to examine environmental problems through interconnected social, cultural, economic, political, and ethical perspectives. In contrast to the natural sciences, which primarily emphasize ecological processes and technological solutions, Social Studies encourages learners to understand environmental degradation as a multidimensional societal challenge that requires critical

reflection and collective responsibility. Consequently, the subject provides an effective platform for fostering sustainability literacy and preparing students to become responsible global citizens (Thacker & Friedman, 2023; Manfra, 2023). Within Social Studies classrooms, complex issues such as climate change and carbon emissions can be translated into meaningful social realities that relate directly to students' everyday experiences (Tang, 2025; Marphelina & Sariyatun, 2025). In this regard, teachers play a central role in helping students interpret climate change not merely as an ecological phenomenon but also as an issue of justice, ethics, and civic responsibility. Previous studies likewise emphasized that integrating environmental values into Social Studies contributes substantially to the development of students' ecological intelligence (Misbah & Hidayah, 2023; Abdelraheem et al., 2025).

Despite the growing body of literature, an important research gap remains. Environmental education studies in Indonesia have largely concentrated on evaluating the implementation of the national *Adiwiyata* (Green School) program. Existing research generally assesses the program through administrative performance, institutional governance, school infrastructure, and science-oriented environmental practices, such as waste management and campus greening initiatives. While these dimensions are important, they provide only limited insight into how environmental values are critically embedded within the Social Studies curriculum. As a result, environmental education is frequently approached as a set of technical or procedural activities rather than as a process of cultivating critical environmental consciousness. Moreover, dominant eco-pedagogical frameworks continue to be informed primarily by secular critical traditions, leaving relatively little room for integrating religious and culturally grounded perspectives, particularly Islamic theological values, into environmental learning.

Against this backdrop, SMP Muhammadiyah 3 Yogyakarta, an *Adiwiyata Mandiri* school founded upon progressive Islamic educational principles, represents a particularly relevant context for this investigation. The school has consistently sought to integrate the aspirations of the Sustainable Development Goals (SDGs) into educational practices that are informed by religious ethics (Rieckmann & Muñoz, 2024). Building upon this context, the present study introduces the concept of Prophetic Eco-Pedagogy as an alternative pedagogical framework. The principal contribution of this study lies in its integration of prophetic Islamic values—namely transcendence, humanization, and liberation—with critical eco-pedagogical principles to reconstruct environmental ethics within Social Studies education. Rather than emphasizing environmental compliance through externally imposed regulations, this framework encourages students to develop ecological responsibility as an expression of spiritual awareness, ethical commitment, and social transformation.

To explore these issues systematically, the study is guided by the following research questions:

1. How is Prophetic Eco-Pedagogy integrated into Social Studies instruction to reduce the knowledge–action gap among students in an *Adiwiyata* school?
2. In what ways do the prophetic values of transcendence, humanization, and liberation contribute to strengthening students' ecological intelligence?
3. How does the implementation of this value-oriented eco-pedagogical framework promote students' pro-environmental behaviors in responding to contemporary climate challenges?

METHOD

To address the research questions, this study employed a qualitative methodology to explore how Prophetic Eco-Pedagogy was integrated into Social Studies learning. The methodological framework was designed to examine the pedagogical processes, institutional practices, and students' environmental behaviors within the natural context of an Adiwiyata school.

This research adopted a qualitative approach using a single instrumental case study design (Creswell & Poth, 2018; Yin, 2018). This design was selected because it enables an in-depth exploration of a bounded educational setting while providing broader insights into a particular theoretical issue. In this study, SMP Muhammadiyah 3 Yogyakarta served as the instrumental case for examining how Prophetic Eco-Pedagogy can contribute to reconstructing environmental education and narrowing the persistent knowledge–action gap among students. Rather than aiming for statistical generalization, the study sought to generate contextual and transferable understandings of the integration of Islamic values

and sustainability education within Social Studies.

The research was conducted at SMP Muhammadiyah 3 Yogyakarta, Indonesia. Prior to data collection, written permission was obtained from the school administration to conduct the research and to identify the institution in academic publications because of its public status as an *Adiwiyata Mandiri* school. Informed consent was also obtained from all participating teachers and the school principal, while consent for student participation was provided by parents or legal guardians. To protect participant confidentiality, all personal identities were anonymized using pseudonyms or alphanumeric codes.

Participants were selected through purposive sampling based on their direct involvement in the implementation of environmental education. The participants included four Social Studies teachers representing Grades VII, VIII, and IX, the school principal, and twelve students from the same grade levels who were actively involved in classroom learning and environmental activities. The student participants represented different levels of environmental engagement to capture diverse perspectives.

In qualitative inquiry, the researcher functioned as the primary research instrument responsible for collecting, interpreting, and validating the data. To support systematic data collection, three complementary research instruments were developed. The first was a semi-structured observation protocol used to document classroom interactions, instructional practices, and school environmental activities related to the implementation of Prophetic Eco-Pedagogy. The second consisted of semi-structured interviews and focus group discussion (FGD) guides designed to explore teachers' pedagogical perspectives and students' experiences regarding environmental learning. The third was a document analysis checklist used to examine teaching modules, lesson plans, school policy documents, and students' digital learning portfolios.

Data were collected during the first semester of the 2025/2026 academic year through three complementary techniques: observation, interviews, and document analysis. Participant observation was conducted in both classroom and school environments to examine how environmental values and Islamic principles were integrated into Social Studies instruction and reflected in students' daily behaviors. Semi-structured interviews were undertaken with the school principal and the four Social Studies teachers to explore instructional planning, curriculum implementation, and perceptions of students' environmental development. Two focus group discussions involving student participants were subsequently conducted to investigate their understanding of environmental ethics, ecological reasoning, and the relationship between environmental knowledge and everyday practice. Documentary evidence was collected from school environmental policies, teaching modules, lesson plans, and students' digital portfolios, including infographics, campaign posters, and other environmental learning products.

To enhance the credibility of the findings, several validation strategies were employed. Source triangulation was conducted by comparing information obtained from teachers, students, and the school principal. Method triangulation involved cross-checking findings derived from observations, interviews, focus group discussions, and documentary evidence. In addition, member checking was undertaken by returning interview transcripts and preliminary interpretations to the participants to ensure that the findings accurately reflected their experiences and perspectives.

The study adhered to established ethical principles throughout the research process. Participation was voluntary, and all participants were informed of their right to decline participation or withdraw from the study at any stage without consequence. Audio recordings, field notes, and other research data were securely stored and accessed only by the research team. To maintain confidentiality, all participants were identified using pseudonyms or participant codes in all research records and publications.

The data were analyzed using the interactive model developed by Miles, Huberman, and Saldaña (2014), which consists of three interconnected processes: data condensation, data display, and conclusion drawing with verification. During the data condensation stage, interview transcripts, observation notes, and documentary evidence were organized, coded, and categorized according to emerging themes, including prophetic values, ecological awareness, environmental behavior, and the knowledge–action gap. The coded data were subsequently presented through narrative descriptions and thematic matrices to facilitate pattern identification and comparison across data sources. Finally, interpretations were developed by relating the empirical findings to the theoretical perspectives of critical

eco-pedagogy, Islamic ecotheology, and environmental education, while continuously verifying the interpretations against the original data to ensure analytical consistency.

RESULT AND DISCUSSION

This section presents and discusses the empirical findings on the integration of environmental ethical values into Social Studies (IPS) learning at SMP Muhammadiyah 3 Yogyakarta. Based on data obtained through participant observations, in-depth interviews, focus group discussions, and document analysis, the findings indicate that environmental education has been systematically incorporated into both classroom instruction and broader school practices. Rather than functioning as an administrative requirement or a series of isolated environmental activities, environmental values are embedded within the school's educational processes and institutional culture. To provide a coherent interpretation, the findings are organized into three interconnected themes that reflect the curricular, pedagogical, and behavioral dimensions of environmental value integration.

The first theme examines the curricular transformation from implicit to explicit integration of the Sustainable Development Goals (SDGs). The analysis explored how environmental sustainability has been incorporated into both the formal curriculum and the school's informal learning environment, demonstrating how the *Adiwiyata* program can be implemented not only as a regulatory framework but also as a curriculum-based approach that supports the educational objectives of the SDGs.

The second theme investigated the implementation of Prophetic Eco-Pedagogy through the integration of the prophetic values of humanization (*humanisasi*), liberation (*liberasi*), and transcendence (*transendensi*). The findings illustrate how these values are translated into classroom practices that encourage students to critically examine environmental issues while connecting ecological responsibility with Islamic ethical principles. This pedagogical approach offers an alternative perspective for integrating faith-based values with critical environmental education within Social Studies learning.

The third theme focused on the development of students' ecological intelligence and the continuing challenge of the knowledge–action gap. Particular attention was given to the relationship between students' environmental understanding and their everyday environmental practices. Although the findings reveal positive behavioral outcomes in areas such as waste management, they also identify inconsistencies in other forms of environmental responsibility, particularly water conservation. These contrasting patterns indicate that increasing environmental knowledge does not automatically lead to consistent pro-environmental behavior and underscore the importance of sustained pedagogical intervention and continuous environmental habituation within the school context.

Taken together, these findings demonstrate that environmental education in a faith-based school can extend beyond institutional compliance toward a more integrated educational model that combines sustainability education, critical pedagogy, and Islamic ethical values. The discussion further highlights the potential of Prophetic Eco-Pedagogy as a conceptual framework for strengthening ecological literacy, moral responsibility, and environmental citizenship through Social Studies education.

Curriculum Transformation

The initial findings of this study indicate a fundamental shift in the paradigm of Social Studies (IPS) instructional planning at the school. Previously, environmental education tended to exist merely as a "hidden curriculum," relying heavily on teachers' spontaneous initiatives or appearing only during specific occasions such as Earth Day. However, it has now been institutionalized into an "explicit curriculum." An analysis of key documents—including Learning Outcomes (Capaian Pembelajaran/CP), Learning Objective Sequences (Alur Tujuan Pembelajaran/ATP), and Teaching Modules within the Kurikulum Merdeka—reveals that Social Studies teachers consciously reorient national standard content to align with planetary crisis issues.

In practice, teachers employed a pedagogical strategy identified as "Global Issue Contextualization," where theoretical Social Studies content is directly linked to the targets of the Sustainable Development Goals (SDGs) as well as national agendas such as the FOLU Net Sink 2030 (KLHK, 2022). For instance, in the seventh-grade topic "Human Activities in Fulfilling Needs," instruction does not stop at discussing economic scarcity and classical economic motives. Instead, teachers expand

competency indicators by incorporating analysis of how consumption behaviors contribute to environmental degradation. Students are encouraged to critically reflect on the tension between unlimited human desires and the Earth's limited carrying capacity.

Document analysis further demonstrates a systematic alignment between Social Studies content and SDGs targets, as illustrated in Table 1.

Table 1. Matrix of Integration between Social Studies Content, Environmental Context, and SDGs Targets

No	Social Studies Topic	Environmental Issue Context in Learning	Related SDGs Target
1	Spatial Interaction	Analysis of land-use change in upstream areas (Sleman) as a cause of flooding in downstream regions.	Goal 15: Life on Land
2	Economic Activities	Comparison of carbon footprint between local and imported products, as well as consumption ethics.	Goal 12: Responsible Consumption and Production
3	Socio-Cultural Change	Impacts of modernization, urban lifestyles, and industrialization on increasing greenhouse gas emissions.	Goal 13: Climate Action
4	Resource Scarcity	Energy transition: challenges of dependence on fossil fuels and the potential of renewable energy in Indonesia.	Goal 7: Affordable and Clean Energy

This formalization reinforces the strategic role of Social Studies (IPS) as a key vehicle for sustainability education. From a theoretical perspective, these findings support the argument of Rieckmann & Muñoz (2024), who emphasized that Education for Sustainable Development (ESD) should be integrated into core subjects rather than treated as a marginal local content area. Through such integration, environmental issues gain academic legitimacy equal to that of economics, history, or sociology.

Furthermore, teachers' ability to translate abstract SDGs targets—such as Net Zero Emissions—into concrete instructional materials confirms the thesis proposed by Tang (2025). Tang argued that teachers act as critical agents in bridging global climate policies with students' understanding in the classroom. Without creative pedagogical intervention in designing teaching modules, national policy documents such as Visi Indonesia 2045 (Kementerian PPN/Bappenas, 2019) risk remaining as elitist narratives disconnected from grassroots realities. Through this integrated Social Studies approach, students are not only learning "about" the environment but also learning "for" environmental sustainability.

The Praxis of Prophetic Eco-Pedagogy

The most significant finding (novelty) of this study lies in the implementation of a learning approach referred to as "Prophetic Eco-Pedagogy." This concept represents a synthesis between critical pedagogy oriented toward ecological justice and prophetic (progressive Islamic) values.

Unlike critical eco-pedagogy developed in Western contexts—which is often rooted in Marxist thought, tends to be secular, and primarily focuses on class struggle against capitalism (Kopnina, 2020; Jakupec, 2021)—the approach implemented at SMP Muhammadiyah 3 Yogyakarta is strongly infused with a spiritual dimension. Prophetic Eco-Pedagogy operates through three main pillars: transcendence, humanization, and liberation.

a. Transcendence

Classroom observations revealed that teachers consistently begin or conclude environmental discussions with theological narratives. Nature is introduced as a theophany (tajalli/manifestation) of God's signs (Ayat Kauniyah). Environmental degradation is therefore framed not merely as a

material or economic loss, but as an ecological sin and a betrayal of humanity's mandate as khalifah fil ardh (stewards of the Earth).

This finding confirms the strong influence of religion in shaping ethical behavior within Indonesian society. In line with Gade (2019) on Muslim environmentalisms, religious narratives provide stronger and more enduring intrinsic motivation compared to secular ethical arguments. When students internalize that littering is an act "seen by God" (muraqabah), an effective internal control system is formed. This also resonates with Hudha et al. (2019), who emphasized the importance of a theological foundation in cultivating robust environmental moral awareness. In this sense, transcendence redefines nature from an "object of exploitation" into a "spiritual subject" that must be respected.

b. Humanization

The second pillar, humanization, emphasizes cultivating humanity through environmental awareness. Social Studies learning is directed toward building the understanding that the ecological crisis is simultaneously a humanitarian crisis. Teachers utilized real-world data, such as reports from WMO (2024) and the impacts of forest fires (Boulanger et al., 2025), to illustrate that the most immediate and severe victims of climate change are vulnerable populations, particularly the poor.

For example, when discussing "International Trade," students are encouraged to reflect on the conditions of agricultural laborers in developing countries whose environments are degraded to produce cheap goods for developed nations. This represents a form of humanization—fostering empathy by recognizing that excessive consumption patterns can harm others. This approach aligns with Taylor's (2022) biocentric ethics, which emphasizes respect for life, while also being enriched by Islamic values of social solidarity (ukhuwah and ta'awun). Education, therefore, shifts from being self-centered (focused on individual success) toward altruistic (oriented toward collective well-being).

c. Liberation

The most critical dimension of eco-pedagogy is reflected in the pillar of liberation. The school enforced a "Zero Waste" policy, prohibiting the use of single-use plastic packaging in the canteen and requiring students to bring their own eating utensils. According to teacher interviews, this is not merely a cleanliness rule, but an ideological effort to "liberate" students from the hegemonic influence of instant consumer culture driven by industrial systems.

Students are encouraged to develop resistance against the false convenience offered by plastic consumption. This practice embodies the critique of superficial environmental education highlighted by Frigo et al. (2024), as students are invited to engage with the deeper politics of consumption. In this context, liberation means freeing oneself from the domination of consumptive desires that harm the environment, aligning with the Islamic principle of zuhud (simplicity and restraint).

The Manifestation of Ecological Intelligence and the Challenge of the Knowledge–Action Gap

The integration of curriculum and the prophetic approach ultimately results in the formation of a distinctive profile of students' ecological intelligence, although certain behavioral challenges remain in specific areas.

a. Achievements

From a cognitive perspective, students demonstrate strong systemic thinking skills. They are able to explain complex causal relationships, such as how excessive electricity consumption in Yogyakarta contributes to carbon emissions, which in turn accelerate polar ice melting and lead to rising sea levels (Haq et al., 2025).

From a psychomotor perspective, a notable finding emerges in the form of Green IT competencies. Students are capable of utilizing digital technologies (such as Canva, CapCut, and Instagram) to create environmental campaign content as part of their Social Studies projects. This finding challenges the common assumption that technology distances young people from nature. Instead, it supports the research of Abdelraheem et al. (2025), which argued that in the digital era, ecological intelligence must include digital advocacy skills. Students use their devices not merely for entertainment but as tools for value advocacy, reflecting a positive integration of digital and

ecological literacy.

b. Challenges

Despite these significant achievements, the study also identifies a persistent and critical issue: the Knowledge–Action Gap, particularly in the domain of energy conservation. Observations revealed a striking behavioral disparity: students exhibited high discipline in waste management practices (such as bringing reusable bottles and sorting waste), yet they were often less consistent in energy-saving behaviors (e.g., forgetting to turn off fans, lights, or LCD projectors when leaving the classroom).

Why does this gap occur? A deeper analysis grounded in environmental psychology suggests that the primary factor lies in the "abstract versus concrete nature" of environmental objects.

1. Visibility of Impact: Plastic waste is a concrete object. When littered, it is visibly dirty, smelly, and directly disrupts the environment. As a result, students respond more quickly to waste-related issues due to immediate negative visual stimuli. In contrast, electricity is abstract (intangible). Lights left on in an empty room do not appear "dirty" or produce any odor, and their carbon emission impacts are not directly visible. This aligns with Yang et al. (2025), who note that the knowledge–action gap is more prevalent in environmental issues with invisible impacts.
2. Psychological Barriers: Interviews revealed that students often perceive individual energy-saving actions as "too insignificant" to influence global climate change. This reflects low climate-related self-efficacy. Zhang & Cao (2025) and Im & Jue (2024) explained that adolescents frequently experience affective barriers, feeling powerless when confronting large-scale issues such as global warming, unlike more immediate and tangible issues like school cleanliness.
3. Abstract Nature of Energy Concepts: Unlike waste, which can be physically handled and sorted, the concept of a "carbon footprint" from electricity use requires a higher level of abstract thinking. Indikator Politik Indonesia (2024) also found that public understanding of the relationship between household energy consumption and climate change remains significantly lower than their understanding of waste issues

Although this study contributes to the growing literature on Social Studies education, environmental ethics, and faith-based eco-pedagogy, several limitations should be acknowledged when interpreting the findings. First, the study adopted a qualitative single instrumental case study design, which was intended to generate an in-depth understanding of a specific educational context rather than produce statistically generalizable findings. Consequently, the results should be interpreted as context-dependent and may not be directly transferable to other educational settings.

Second, the study was conducted in a single *Adiwiyata Mandiri* Islamic junior high school located in an urban area of Yogyakarta. The school's well-established environmental culture, institutional support, and religious orientation may differ substantially from those of public schools, non-*Adiwiyata* institutions, or schools situated in rural contexts. Accordingly, caution is required when extending these findings to educational environments with different organizational, cultural, or socio-religious characteristics.

Third, the participants consisted exclusively of junior high school students (Grades VII–IX). Because students at this developmental stage are still forming their moral reasoning, environmental attitudes, and behavioral habits, their responses may be influenced by teacher guidance, peer interactions, and the school environment. Future studies involving learners different educational levels may provide a broader understanding of how environmental values are internalized across stages of development.

Finally, the assessment of students' pro-environmental behavior was based primarily on classroom and school observations, interview data, focus group discussions, and documentary evidence. Although these approaches provided rich qualitative insights, they were limited in capturing students' environmental practices beyond the school setting and did not include objective measurements of environmental outcomes, such as actual resource consumption or waste reduction. In addition, self-reported responses may have been influenced by social desirability, whereby participants presented behaviors that they perceived to be consistent with school expectations. Future research may therefore benefit from combining qualitative approaches with longitudinal observations or quantitative behavioral

measures to obtain a more comprehensive understanding of students' environmental practices.

CONCLUSION

This study concludes that the integration of Prophetic Eco-Pedagogy into Social Studies learning at SMP Muhammadiyah 3 Yogyakarta offers a meaningful pedagogical framework for strengthening environmental education and addressing the knowledge–action gap among students. The findings indicate that environmental education is implemented not merely as part of the *Adiwiyata* program but as an integral component of the curriculum that combines sustainability education with Islamic ethical values. Through the integration of the Sustainable Development Goals (SDGs) and the prophetic principles of transcendence, humanization, and liberation, students are encouraged to understand environmental issues from spiritual, ethical, and social perspectives. In particular, transcendence promotes a sense of responsibility as *Khalifah fil ardh*, while humanization and liberation encourage students to interpret environmental degradation as a social and moral concern rather than solely as a technical or ecological problem. Together, these values contribute to the development of students' ecological intelligence within the context of Social Studies learning.

The findings further suggest that the implementation of Prophetic Eco-Pedagogy is associated with positive pro-environmental behaviors, particularly in environmental practices that are routinely reinforced within the school environment, such as waste management. Nevertheless, the study also reveals that the knowledge–action gap remains evident in less visible forms of environmental behavior, especially those related to water and energy conservation. These findings indicate that value internalization alone may not be sufficient to promote consistent environmental behavior across different contexts and that additional pedagogical strategies are needed to support the translation of environmental knowledge into sustained practice.

Building on these findings, future research could investigate instructional approaches that make abstract environmental issues more tangible for students, including the use of digital technologies, environmental monitoring systems, or other interactive learning media that support behavioral change. Furthermore, comparative and longitudinal studies involving schools with different institutional characteristics, educational systems, and religious or cultural backgrounds would provide a broader understanding of the applicability, sustainability, and long-term impact of the Prophetic Eco-Pedagogy framework in environmental education.

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