

INTEGRATION OF ECO-THEOLOGY AND ENVIRONMENTAL ETHICS AS AN EFFORT TO STRENGTHEN ENVIRONMENTAL ETHICS AND ECOLOGICAL AWARENESS OF THE YOUNGER GENERATION

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Abstract

This study aims to analyze the integration of eco-theology and environmental ethics in strengthening environmental ethics and ecological awareness of the younger generation in Banda Aceh City. The research uses a qualitative approach with an intrinsic case study method. The research locations include SMA Negeri 13 Banda Aceh, SMA Al-Mishbah Banda Aceh, and SMA Negeri 7 Banda Aceh. The research informants consisted of school principals, Islamic Religious Education teachers, students, the Banda Aceh City Education Office, the Banda Aceh City Environment, Cleanliness and Beauty Office (DLHK3), and academics in the field of environmental education. Data analysis was collected through in-depth interviews, observations, focus group discussions, and documentation studies. Data analysis was carried out using thematic analysis techniques. The results showed that most students had a good understanding of the importance of protecting the environment, but the implementation was not consistent due to the influence of the social environment and low peer examples. Teachers and schools have tried to integrate religious values in environmental learning, but the implementation is still partial. This research produces an integrative model of eco-theology and environmental ethics that places religious values, ethical reflection, and environmental practices as a unit in the formation of students' ecological character. The model has the potential to strengthen ecological awareness that is more sustainable and transformative.

Keywords

Eco-Theology, Environmental Ethics, Environmental Ethics, Young Generation, Ecological Awareness.



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INTRODUCTION

Environmental issues have become one of the most crucial issues facing the global community in the 21st century (Mulyani et al., 2024); (Karisma et al., 2025); (Azhar et al., 2024)(Maharani, 2024). Various phenomena such as climate change, global warming, water and air pollution, reduced biodiversity, and increasing volumes of waste indicate that the relationship between humans and the environment is experiencing a serious imbalance. This condition not only threatens the sustainability of ecosystems, but also has a direct impact on the quality of human life (Satuti & Atmojo, 2025). International reports show that the current environmental damage is largely triggered by exploitative human activities and lack of attention to sustainability principles (Fitriandhini & Putra, 2022); (S. A. Lestari & Iskandar, 2025); (Dewata & Danhas, 2023); (Rofik & Mokhtar, 2021). Therefore, efforts to overcome environmental problems cannot only be carried out through technical and policy approaches alone, but also require a change in people's views, values, and behavior towards the environment.

In the context of sustainable development, education is seen as a strategic instrument to build community environmental awareness and responsibility (S. Lestari, 2022)(Juliani et al., 2023) (Aulia et al., 2025). UNESCO emphasizes that education has an important role in shaping individuals who are able to understand the relationship between humans and the environment and have a commitment to maintaining the sustainability of natural resources (Tilbury, 2011) (UNESCO, 2022) (UNESCO, 2018). United Nations Decade of Education for Sustainable Development (2005–2014): International Implementation Scheme. Paris: (UNESCO, 2020); (Vioresa et al., 2023); (Susilawati et al., 2024); (Karina et al., 2025). Through education, students are expected to not only gain knowledge about environmental issues (Achmadin et al., 2025), but also develop attitudes, values, and behaviors that support environmental conservation (Karina et al., 2025)(Maharani, 2024). In other words, environmental education must be able to produce behavioral transformations that encourage individuals to become ecologically responsible citizens (Scott, 2017).

The academic problem of this research is rooted in the reality that the level of ecological awareness and behavior of the young generation in Indonesia, especially in Aceh Province, is still relatively low. Data from the Central Statistics Agency (BPS) shows that the level of indifference of the Indonesian people to the environment is still an important problem. Based on *Indonesia's Environmental Indifference Behavior Index Report 2018* sourced from the 2017 Social Resilience Module Susenas, Indonesia's Environmental Indifference Behavior Index (IPKLH) reached 0.51. Aceh

Province was recorded to have the highest IPKLH value, which was 0.55, which indicates a relatively high level of environmental indifference, while East Nusa Tenggara had the lowest value of 0.41. The waste management dimension is one of the largest contributors to environmental indifference behavior, with an index of 0.72 (Central Statistics Agency (BPS), 2022). Ironically, the findings of research at the secondary school level in Banda Aceh show that environmental knowledge has not been fully correlated with students' environmental care attitudes. The research conducted at SMP Negeri 4 Banda Aceh in August-October 2023 used a quantitative approach with a correlational design. Data were collected through knowledge tests, questionnaires, and observations on 41 grade VIII students, then analyzed using Product Moment correlation. The results showed that students' knowledge of environmental pollution obtained an average score of 81 which was in the good category, while environmental care attitudes obtained a score of 80.2 which was also in the good category. However, the relationship between knowledge and environmental care attitudes only reached a correlation coefficient of 0.462 which was in the medium category (Zahabyyah, 2023).

The findings show that an increase in environmental knowledge does not automatically result in a strong change in attitudes. Thus, environmental education needs to be developed not only through knowledge transfer, but also through approaches that are able to build the internalization of students' values, awareness, responsibility, and commitment to the environment. This perspective opens up space for an educational approach that integrates cognitive dimensions with affective, moral, and spiritual aspects so that environmental concern does not stop at conceptual understanding, but can be manifested in ecological attitudes and behaviors.

This research offers a solution through the integration of Eco-Theology and Environmental Ethics as an effort to strengthen environmental ethics and ecological awareness of the younger generation in the city of Banda Aceh. This approach is based on the belief that sustainable ecological behavior change requires a strong moral and spiritual foundation. In Aceh, especially in Banda Aceh, Islamic values have a dominant influence on people's lives, so the Islamic ecotheological approach becomes very relevant. Islamic ecotheology views environmental damage as a violation of the human mandate as a caliph fil ardh (leader on earth), as affirmed in QS. Ar-Rum verse 41 which links damage on land and sea with human actions. Integration with environmental ethics provides a philosophical and practical framework for the intrinsic value of nature and the moral obligation of humans to protect it (Al-Qaththan, 2018)(AL-Quran, 2013). This research aims to answer three main questions: first, how the integration of eco-theology and environmental ethics is

applied in an effort to strengthen environmental ethics in the young generation in the city of Banda Aceh; second, the extent to which this integration is able to increase the ecological awareness of the younger generation; and third, how these values can be implemented in a sustainable manner to form environmental care behavior.

Some early indications suggest that this approach has great potential. The Ecotheology program intensified by the Ministry of Religion of the Republic of Indonesia has begun to be implemented in Banda Aceh, for example through socialization at the Religious Affairs Office (KUA) of Kuta Alam which integrates religious values with environmental concern in wedding processions. In the realm of higher education, research on nature lovers (GAINPALA) students of UIN Ar-Raniry Banda Aceh shows that their ecotheology awareness is quite good, manifested in various conservation actions such as tree planting and river cleaning, although the consistency of internalizing these values still needs to be improved. In addition, Acehnese youth leadership training with the theme of ecotheology has also been implemented, which shows that local governments are beginning to realize the importance of this approach. However, challenges remain, such as the low understanding of parents about eco-friendly parenting and the lack of optimal integration of ecological values in the religious education curriculum in dayah and schools. Thus, this study is very urgent to examine in depth how the integration of eco-theology and environmental ethics can be a comprehensive solution in building ecological awareness and behavior of the younger generation in Banda Aceh, which in turn can be a model for other regions in Indonesia.

Various studies in the last five years have examined the relationship between eco-theology, environmental ethics, environmental ethics, and ecological awareness, both partially and integrated. Research that examines the values of Islamic ecotheology in oral tradition, *Kabata Belang*, the people of Banda Naira, found that the traditional poem contains theological and ecological values that serve as "advisors" for the community in protecting the coastal and marine environment (Latuapo & Farid, 2024). This study recommends documenting the Kabata text as a guide for the younger generation, but it is still limited to aspects of local wisdom without touching on implementation in formal education. Research on the role of *Green Islamic Education* in developing the ecotheological awareness of the Muslim generation through the integration of the values of monotheism, caliphate, trust, and masuliyyah in the curriculum at SMPIT Sahabat Alam Pelabuhanratu, Sukabumi (Azhari et al., 2025). The results of the study show that the integration of these values is able to foster environmental concern as a form of worship and spiritual responsibility, but this study has not specifically

measured its impact on environmental ethics and ecological behavior of students.

The research, which examines the integration of Islamic ecotheology in the curriculum and culture of green madrassas at MI NU Buaran, found that the integration of ecotheological values through curriculum, green madrasah cultural practices, and routine spiritual activities strengthened by teachers' example can shape students' attitudes of environmental concern (Scott, 2026). This research emphasizes that madrasahs have a strategic role in forming an environmentally ethical generation, but the focus is still limited to the basic education level and has not studied the aspects of ecological awareness in depth. Ulfiani & Ningsih's (2026) research examines the integration of ecotheology and Love-Based Curriculum in Islamic Religious Education learning at MI Nurul-Islam Banyuputih Kidul, showing that the integration is carried out through the association of faith and moral materials with human responsibility as caliphs, instilling the values of love and care, and habituating behavior to protect the environment (Ulfiani & Ningsih, 2026). The results of the study show a positive impact on increasing student awareness, responsibility, and concern for the school environment, but it is still limited to the madrasah ibtidaiyah level and has not measured the ecological awareness aspect comprehensively.

The research of Achmadin et al. (2025) examines the construction of Islamic ecological values in the Islamic education system in East Java Islamic boarding schools, focusing on environmental conservation learning ethics and responses to deforestation issues (Achmadin et al., 2025). The findings of the study show that the construction of ecotheological values is built through four integrated approaches: the integration of theological concepts (caliph, amanah, mizan) into formal subjects, the implementation of transformative learning ethics that connect theory with field practice, and the internalization of values through the *living Qur'an*, and ecological exemplary (*uswah hasanah*) from pesantren caregivers. This study confirms that effective learning ethics emphasize a humanistic-ecological approach, but the context is still limited to pesantren education and does not yet include formal education at the secondary school level in urban areas such as Banda Aceh.

Based on the five previous studies, several research gaps can be identified that are the basis for the *novelty* of this research. *First*, most of the previous research still focused on the conceptual aspects or implementation of religion-based environmental education in the context of society, non-formal education, or basic education, not many have studied specifically at the high school level (*junior/senior high school*), especially in the city of Banda Aceh. *Second*, previous research tends to examine eco-theology and environmental ethics separately, no one has integrated the two

approaches simultaneously as a comprehensive pedagogical framework in formal education. *Third*, previous research has not empirically measured the extent to which the integration of eco-theology and environmental ethics can increase the ecological awareness and environmental ethics of the younger generation by using standardized instruments. *Fourth*, the socio-religious context of the Acehnese people which has strong cultural and religious characteristics has not been the research setting in the study of the integration of eco-theology and environmental ethics in the educational environment.

Thus, the novelty (*novelty*) This research lies in: (1) the development of an integration model of eco-theology and environmental ethics in the context of formal education at the secondary school level in Banda Aceh City; (2) the measurement of the impact of the integration on the strengthening of environmental ethics and ecological awareness of the younger generation empirically; (3) the exploration of the implementation of eco-theology and environmental ethics values in a sustainable manner in shaping environmental care behavior in a society with strong religious characteristics; and (4) theoretical contributions in enriching the discourse of environmental education based on spirituality and ethics in Indonesia, especially in the framework of education for sustainable development (*Education for Sustainable Development/ESD*) as affirmed by UNESCO. This research also responds to the calls of environmental theologians and ethicists such as (Spencer, 2022) emphasizing the importance of constructing a theological perspective for environmental ethics through key doctrines such as creation, anthropology, and eschatology, as well as (Vogt, 2024) which affirms that ecological transformation requires a fundamental change in cultural attitudes involving moral and religious dimensions.

This research theoretically relies on the ecotheological discourse and environmental ethics which originates from the fundamental thoughts of environmental theologians and philosophers. Theologically, this research refers to the framework developed by (Spencer, 2022) which affirms that the four doctrines **Lock**form a theological perspective for environmental ethics, namely the doctrine of revelation (*revelation*), creation (*creation*), antropologi (*anthropology*), and eschatology (*eschatology*). These four doctrines are the foundation for the building of one's environmental ethics, and through the understanding of these doctrines, common points are found to work together more effectively for the common good, as well as to understand why various theological streams—whether ecotheological, theological liberalism, fundamentalism, or evangelicalism—can produce ethics that are pro-environment albeit with different approaches. In the context of this research, the doctrine of

anthropology—which positions humans as caliphs and trustees—is the main entrance to build the ecological awareness of the young generation in religious Banda Aceh.

Ethically, this research refers to the discourse of the intrinsic value of nature (*intrinsic value of nature*) which is the foundation of environmental ethics. As explained by environmental ethical thinkers such as Callicott and Rolston, the central debate in environmental ethics lies in whether nature has intrinsic value (value in itself) or only instrumental value (valuable to the extent that it is beneficial to humans). This research adopts a position that emphasizes the importance of recognizing the intrinsic value of nature, as affirmed by theologians such as (Scheid, 2023) who developed the concept *cosmic common good*, an ecological ethical norm that views humans as an integral part of the entire cosmos, emphasizing the instrumental and intrinsic value of nature simultaneously, and affirming the integral relationship between religious practice and efforts to achieve the common good. This approach is relevant to the context of Banda Aceh because it shows that Islamic values and local wisdom can be a powerful ethical source for environmental protection. In the framework of Islam, this research is enriched by the sharia-based ecotheological discourse developed by (Yuwana & Hakim, 2024) that integrates classical Islamic philosophical thought with modern environmental ethics.

Fundamental principles such as khalifah (leadership/stewardship), amanah (trust/responsibility), and mizan (balance) become the moral and spiritual foundation for ecological management that is in line with contemporary issues such as sustainability, biodiversity conservation, and climate change mitigation. This study also refers to the findings of (Achmadin et al., 2025) which shows that the construction of ecotheological values in Islamic education is built through four integrated approaches: the integration of theological concepts into formal subjects, the implementation of transformative learning ethics that connect theory with field practice, the internalization of values through the *living Qur'an*, and ecological exemplary (*uswah hasanah*). This approach is a model that can be adapted in the context of formal education in Banda Aceh.

In addition, the research also refers to UNESCO's Education for Sustainable Development (ESD) global policy framework, which affirms that education has a strategic role in ensuring that learners acquire the knowledge, skills, values, and attitudes needed for sustainability. UNESCO defines ESD as an educational process that empowers and motivates learners to become active citizens in sustainability, who are able to think critically and participate in shaping a sustainable future—a process that requires a pedagogical approach that is learn-centered, action-oriented, and

transformative. This framework reinforces the justification that the integration of eco-theology and environmental ethics in education is part of efforts to realize the SDG 4.7 target, which is to ensure that all learners acquire knowledge and skills to promote sustainable development. Thus, this research not only has a strong theological and ethical foundation, but is also aligned with the global agenda of education for sustainability.

Based on this description, this study aims to analyze the integration of eco-theology and environmental ethics as an effort to strengthen environmental ethics and ecological awareness of the young generation in Banda Aceh City. This research is expected to produce an integrative conceptual model that connects religious values, environmental ethics, and environmental education practices so that it can contribute to the development of more holistic, contextual, and sustainable environmental education. In addition to making a theoretical contribution to the development of eco-theology and environmental ethics studies, this research is also expected to be a reference for schools, local governments, and other stakeholders in designing effective environmental education strategies to form a young generation that has strong ecological character.

METHODS

This study uses a qualitative approach with an intrinsic case study method on "Integration of Eco-Theology and Environmental Ethics as an Effort to Strengthen Environmental Ethics and Ecological Awareness of the Young Generation in Banda Aceh City". The research data is in the form of qualitative data on understanding, perception, and environmental education practices, as well as ecotheological values and environmental ethics that are internalized in learning and school culture in three high schools in Banda Aceh (SMA Negeri 13, SMA Al-Mishbah, and SMA Negeri 7). The data collection technique was carried out by semi-structured in-depth interviews, observations, and documentation. Interviews were conducted with 15 informants, consisting of school principals (3 people), Islamic Religious Education teachers and environmental teachers (6 people), students (3 people), officials of the Banda Aceh City Education Office (1 person), officials of DLHK3 Banda Aceh City (1 person), and academics/practitioners of environmental education (1 person). Non-participatory observations were carried out on January 6–February 20, 2026 at three research locations, namely SMA Negeri 13 Banda Aceh, SMA Al-Mishbah Banda Aceh, and SMA Negeri 7 Banda Aceh. Observations were carried out in stages to obtain an overview of the physical condition of the school environment, ecological behavior of students, implementation of environmental

programs, and interaction between teachers and students in learning related to the environment. Observations at SMA Negeri 13 Banda Aceh were carried out on January 6–16, 2026, Al-Mishbah High School Banda Aceh on January 19–30, 2026, and SMA Negeri 7 Banda Aceh on February 2–13, 2026. Furthermore, follow-up observation and confirmation of field findings were carried out on February 16–20, 2026. Thus, the entire observation process lasted for approximately six weeks. Documentation was carried out by collecting data from school curriculum, work programs, disciplines, environmental activity documents, activity photos, and local government policies related to environmental education.

Data analysis was carried out in stages since field data began to be collected. First, the researcher transcribed all the results of interviews with 15 informants and organized observation notes and school documents based on the research location, namely SMA Negeri 13 Banda Aceh, SMA Al-Mishbah, and SMA Negeri 7 Banda Aceh. Furthermore, the researcher read interview transcripts and observation notes repeatedly to understand patterns of understanding, attitudes, ecological practices, and the application of religious values in environmental education. In the initial coding stage, the researcher codes relevant statements or events, such as "environmental understanding", "situational behavior", "teacher supervision", "caliph", "trust", "Clean Friday", "peer influence", "theoretical learning", and "environmental practice". Codes that have similar meanings are then grouped into broader categories. For example, the codes "littering when supervised", "behaviour changes when teachers are absent", and "hygiene depends on supervision" are grouped into categories of ecological behaviour that are not yet consistent.

The next stage is carried out by connecting these categories to form a research theme. The category on student understanding and behavior inconsistencies is grouped into the theme "Ecological Awareness of Students in Daily Life"; the category about the caliphate, trust, cleanliness as part of faith, and the role of PAI teachers is grouped into the theme "Internalizing the Value of Eco-Theology in Learning"; while the category about teacher examples, Clean Friday, community service, and greening is grouped into the theme "The Role of Schools in the Formation of Environmental Ethics". The categories on peer conformity, theoretically dominant learning, and the family and community environment then form the theme "Obstacles to the Formation of Sustainable Ecological Behavior". All of these themes are then compared between the results of interviews, observations, and documentation in the three schools to see similarities and differences in findings. The results of the comparison are then used to formulate an integrative model consisting of spiritual,

ethical, and practical dimensions.

The interpretation of the themes that have been formed is then carried out using the framework of eco-theology, environmental ethics, the concept of caliph, amanah, and mizan, as well as the framework of Education for Sustainable Development (Spencer, 2022); (Yuwana & Hakim, 2024), (Scheid, 2023). In this way, empirical data are not only described but also analyzed to explain how religious values, ethical reflection, and ecological practices relate to the formation of students' ecological awareness. The results of the analysis are then compared with previous research to see the suitability, differences, and positions of the findings of this study. The validity of the data is carried out through triangulation of sources by comparing information from principals, teachers, students, related officials, and academics; triangulation of methods by comparing the results of interviews, observations, and documentation; and member checking by reconfirming the summary of the results of the interview and the interpretation of the findings to the relevant informants. With these stages, the theme and conclusions of the research are determined based on patterns that emerge from field data, not solely based on theoretical frameworks.

FINDINGS AND DISCUSSION

Findings

This study aims to analyze the integration of Eco-Theology and Environmental Ethics as an effort to strengthen environmental ethics and ecological awareness of the younger generation in Banda Aceh City. Data was obtained through in-depth interviews with 15 informants consisting of school principals, Islamic Religious Education teachers and environmental teachers, students, officials of the Banda Aceh City Education Office, officials of the Banda Aceh City Environment, Hygiene, and Beauty Office (DLHK3), and academics/practitioners of environmental education. In addition, data were also obtained through non-participatory observations in three high schools (SMA Negeri 13, SMA Al-Mishbah, and SMA Negeri 7 Banda Aceh) as well as documentation studies on curriculum, work programs, disciplines, environmental activity documents, and local government policies. Based on thematic analysis (Braun & Clarke, 2021), this study produced five main themes presented in the form of the following table.

Table 1. Integration of Eco-Theology and Environmental Ethics as an Effort to Strengthen Environmental Ethics and Ecological Awareness of the Young Generation in Banda Aceh City

No	Student Characteristics	Role of Learning	Inhibiting Factors	Integration Model
1	Good understanding of the importance of cleanliness and environmental preservation	PAI teachers relate cleanliness to Islamic teachings, such as faith (iman) and humanity as stewards (khalifah)	Peer influence, particularly negative conformity	Spiritual Dimension: Internalization of the values of <i>khalifah fil ardh, amanah</i> (trust/responsibility), and <i>mizan</i> (balance)
2	Cleanliness-related behavior remains situational, depending on supervision	School programs: Clean Friday (<i>Jumat Bersih</i>), communal work (<i>kerja bakti</i>), greening activities, and classroom duty	Learning remains predominantly theory-oriented, with limited direct practice	Ethical Dimension: Reflection on ecological responsibility through moral discussions and environmental case studies
3	Ecological awareness is at a transitional stage, from normative to reflective	Teacher role modeling as a central figure in habit formation	Family and community environments do not yet fully support a culture of cleanliness	Practical Dimension: Sustainable real-world actions, such as waste management, greening, and environmental projects
4	Motivation decreases in the absence of social support from peers	A religious approach is more readily accepted by students than a sanction-based approach	There is no systematic integration of environmental values across all subjects	Integration of Three Dimensions: Spiritual + Ethical + Practical dimensions implemented simultaneously and sustainably

Source: Interviews, observations, and documentation (2026)

Based on the results of interviews and observations, the character of students in the three schools showed that most students had a good understanding of the importance of maintaining cleanliness and environmental sustainability. They understood that a clean environment creates a learning comfort and supports health. However, this understanding has not been fully followed by consistent behavior. Cleanliness behavior is still situational, meaning that students tend to show environmentally caring behavior when there is supervision from teachers or the school, and decrease when there is no supervision. These findings show that students' ecological awareness is in a transitional stage, which is between normative awareness (knowing what is right) and reflective awareness (doing because of internal awareness). Student motivation is also strongly influenced by social support from peers; when friends do not show similar behaviors, students' motivation to take care of the environment decreases drastically.

The role of learning in instilling environmental values in the three schools shows that Islamic Religious Education (PAI) teachers have a central role in integrating religious values with

environmental concerns. PAI teachers routinely remind students that cleanliness is part of faith and that humans as caliphs are responsible for protecting nature as a mandate from Allah SWT. This religious approach is considered easier for students to accept than an approach that only emphasizes rules and sanctions. In addition to classroom learning, schools also carry out various programs such as Clean Friday, community service, school greening, and classroom cleanliness pickets. The principal emphasized that the formation of environmental ethics is not enough through classroom learning, but must be a school culture. Teachers are seen as role models; when teachers show concern for the environment, students tend to follow this behavior. However, the implementation of environmental learning still depends on the initiative of each teacher and has not been systematically integrated in all subjects.

The research identified three main factors that hinder the formation of sustainable ecological behavior in students. First, peer influence is the most dominant obstacle. Most students admit that it is difficult to maintain environmentally caring behaviors when the surrounding social environment does not show the same behavior. Students feel "taking care of themselves" when their friends litter, so their motivation decreases. Second, environmental learning in schools still focuses more on knowledge and theory aspects than real practice. As a result, students understand the concept of the environment but have not fully internalized it into daily habits. An academic emphasized that students know what is right, but are not used to doing so because learning has not involved much direct experience. Third, the family environment and the community where students live have not fully supported a culture of clean and environmentally friendly living. DLHK3 Banda Aceh City revealed that the habits of the community in the environment where students live also affect their behavior at school.

Based on the synthesis of field findings, this study formulated an integrative model consisting of three main components that are interrelated. First, the spiritual dimension is in the form of internalizing eco-theology values through the concepts of *khalifah fil ardh*, *amanah*, and *mizan*. These values become the moral foundation that places protecting the environment as part of a religious responsibility, not just a social obligation. Second, the ethical dimension is in the form of strengthening environmental ethics reflection through moral discussions and environmental case studies. Students are encouraged to consider the ecological impact of each action and develop moral responsibility for nature that has intrinsic value. Third, the practical dimension is in the form of sustainable real actions such as waste management, reforestation, and environmental projects that

actively involve students. The three dimensions are integrated simultaneously and continuously, so that ecological awareness is formed not only based on knowledge, but also based on spiritual values, ethics, and real actions.

Table 2. Matrix of Research Findings Based on Five Main Themes

No.	Theme	Subtheme	Key Findings
1.	Students' Ecological Awareness in Everyday Life	Understanding of the environment, cleanliness-related behavior, and ecological responsibility	Students demonstrate a good understanding; however, their behavior is not yet consistent, and their awareness remains at a transitional stage.
2.	Internalization of Eco-Theological Values in Learning	The concept of <i>khalifah fil ardh</i> , cleanliness as part of faith, and responsibility for preserving nature	PAI teachers integrate religious values into learning; a religious approach is more effective than a sanction-based approach.
3.	The Role of Schools in Shaping Environmental Ethics	Teacher role modeling, school programs, and school culture	The school has environmental programs, but their implementation is not yet systematic; teacher role modeling has a significant influence.
4.	Barriers to the Formation of Sustainable Ecological Behavior	Peer influence, family environment, and predominantly theoretical learning	Three dominant factors were identified: peer conformity, limited direct practice, and low family support.
5.	An Integrative Model of Eco-Theology and Environmental Ethics	Integration of religious values, ethical reflection, and ecological practices	A three-dimensional model: spiritual (<i>khalifah</i> , <i>amanah</i> , <i>mizan</i>) + ethical (moral reflection) + practical (sustainable real-world actions).

Source: Results of thematic analysis of research data (2026)

Table 2 presents a matrix of research findings based on five main themes resulting from the thematic analysis. The first theme, Students' Ecological Awareness in Everyday Life, shows that students have a good understanding of the environment, but cleanliness behavior is still inconsistent and highly dependent on supervision and social support. Students' ecological awareness is in a transitional stage between normative and reflective awareness. The second theme, Internalizing Eco-Theology Values in Learning, reveals that PAI teachers play a central role in associating religious values with environmental concern through the concept of caliph fil ardh and cleanliness as part of faith. This religious approach has proven to be more effective than an approach that relies only on rules and sanctions.

The third theme, The Role of Schools in the Formation of Environmental Ethics, shows that schools already have various environmental programs such as Clean Friday, community service, and reforestation, but their implementation is still not systematic and integrated in all subjects.

Teacher examples are a key factor in shaping students' habits. The fourth theme, Obstacles to the Formation of Sustainable Ecological Behavior, identifies three dominant factors that hinder the formation of students' ecological behaviors, namely the influence of peer conformity, lack of direct practice in learning, and low support from the family and community environment. The fifth theme, the Integrative Model of Eco-Theology and Environmental Ethics, formulates a three-dimensional model that is interrelated: the spiritual dimension based on the values of the caliph, amanah, and mizan; the ethical dimension based on moral reflection and ecological responsibility; and the practical dimension in the form of sustainable concrete actions that actively involve students.

Discussion

Research findings on the character of environmental ethics and ecological awareness of students in three high schools in Banda Aceh show that there is a gap between knowledge and action (*knowledge-action gap*). Students have a good understanding of the importance of maintaining environmental cleanliness and sustainability, but their ecological behavior is still situational and inconsistent. These findings, when dialogized with the theoretical framework of transformative environmental education from (Wals, 2021). It shows that environmental education that is only oriented towards knowledge transfer tends to fail to produce sustainable behavior change because it does not touch on aspects of students' values, ethics, moral reflection, and self-awareness. Furthermore, Sund & Pashby (2020) emphasize that environmental education often results in what is referred to as normative *consciousness*, a normative awareness that is limited to an understanding of what is right and wrong, but has not been able to form a strong moral commitment to act consistently. These findings reinforce the argument that environmental knowledge without being followed by a transformation of values and self-identity will only result in behaviors that are temporary and dependent on external factors such as surveillance or social pressure.

When juxtaposed with previous research, these findings are in line with the results of the study (Hapsari et al., 2024)(Latuapo & Farid, 2024) who found that although the people of Banda Naira had knowledge of ecological values in the tradition *Kabata Belang*, the implementation of ecological behavior still faces challenges due to the lack of internalization of these values in daily life. Similarly, Azhari et al.'s (2025) research shows that the integration of ecotheological values in the curriculum is able to foster environmental awareness, but its impact on behavior change still requires time and continuous strengthening. The author's personal idea considers that this gap occurs because environmental education in schools still places students as recipients of knowledge

(*recipients of knowledge*) but not as active subjects who reflect and internalize environmental values. Therefore, a paradigm shift from *teaching about the environment* to *learning for the environment*, which involves direct experience and moral reflection.

The second finding shows that the internalization of the value of eco-theology in learning through religious approaches—especially the concepts of *caliph fil ardh*, trust, and cleanliness as part of faith—has proven to be more effective for students than an approach that only relies on rules and sanctions. When dialogized with the theoretical framework of Islamic ecotheology developed by (Spencer, 2022), these findings confirm that the anthropological doctrine in Islam—which positions humans as caliphs and trustees—is the main gateway to building ecological awareness because it provides moral-religious legitimacy for environmental concerns.

Further, (Yuwana & Hakim, 2024) affirms that fundamental principles such as *khalifah* (leadership/stewardship), *Trust* and *Mizan* (balance) become the moral and spiritual foundation for ecological management that is in harmony with contemporary issues. From the perspective of environmental ethics, Scheid (2023) developed the concept of cosmic common good, which affirms the integral relationship between religious practice and the pursuit of the common good, where human beings are seen as an integral part of the entire cosmos, and nature has intrinsic values that must be respected.

These findings are in line with research (Scott, 2026) which shows that the integration of ecotheological values through the curriculum and culture of green madrassas is able to form an attitude of environmental concern for students, as well as research (Ulfiani & Ningsih, 2026) who found that the integration of ecotheology and Love-Based Curriculum in PAI learning has a positive impact on increasing students' awareness and responsibility towards the school environment. Similarly, Achmadin et al. (2025) affirm that the construction of ecotheological values in Islamic education through the *living Qur'an* and ecological exemplary (*uswah hasanah*) effective in shaping environmental ethics. However, the author's critical idea considers that the religious approach in the three schools is still partial and sporadic, not yet systematically integrated in all subjects and school activities. In fact, as affirmed by UNESCO (2005), within the framework of *Education for Sustainable Development* (ESD), education for sustainability requires a pedagogical approach that is learner-centered, action-oriented, and transformative, not just the insertion of religious values in one or two subjects. The authors argue that the integration of eco-theology requires structured curriculum design and adequate teacher training so that ecotheological values are not only a moral discourse,

but also a measurable pedagogical practice.

The third finding identifies three main inhibiting factors for the formation of sustainable ecological behaviors: (1) peer influence (negative conformity), (2) learning that is still theory-oriented and lacks direct practice, and (3) family and community environments that do not yet support a clean culture. When discussed with Bandura's (1977) social learning theory, this finding confirms that individuals tend to form behaviors based on observations of the behavior of others around them, so that when the social environment shows behavior that does not care about the environment, individuals also have the potential to develop similar behaviors. These findings also reinforce Vygotsky's view of the *zone of proximal development* which emphasizes the importance of social support (*scaffolding*) in the formation of new behaviors. In the context of this study, the lack of social support from peers, family, and the community causes students to struggle to maintain the ecological behaviors that have been learned in school.

When juxtaposed with previous research, these findings are in line with research (Mangunjaya et al., 2022) who found that faith-based environmental education has a positive effect on environmentally friendly behaviors, but its effectiveness is highly dependent on social context and community support. Similarly, research (Fadillah, 2021) shows that the concept of *eco-Islamic education* is able to strengthen the ecological responsibility of students, but the greatest obstacle lies in the inconsistency between the values taught in school and practice in the family and community environment. The author's critical idea considers that these barriers demonstrate the need for an ecosystem approach in environmental education—an approach that simultaneously involves schools, families, communities, and religious institutions. Schools cannot work alone; synergy with parents is required through environmentally-based parenting programs, the involvement of religious leaders in ecotheological campaigns in the community, and the strengthening of local government policies that support a clean culture, as initiated by DLHK3 Banda Aceh City through waste reduction programs and cleanliness campaigns. The author argues that this obstacle can actually be overcome if the values of eco-theology and environmental ethics are used as a socio-cultural movement that involves all elements of society, not just incidental school programs.

The fourth finding formulates a three-dimensional integrative model consisting of the spiritual dimension (caliph, amanah, mizan), the ethical dimension (moral reflection and ecological responsibility), and the practical dimension (sustainable concrete action). This model is in dialogue with the theoretical framework of transformative education (Mezirow, 1991), demonstrating that

sustainable ecological behavior change requires a process of perspective *transformation*, in which individuals not only acquire new knowledge, but also experience changes in the basic perspectives and values that guide their actions. In this context, the spiritual and ethical dimensions serve as catalysts for the transformation of perspectives, while the practical dimension serves as a space for students to experience and reflect on those values in real action. This model is also aligned with the framework of UNESCO's *Education for Sustainable Development*, which emphasizes the importance of a holistic and integrative approach that includes cognitive, social-emotional, and behavioral aspects.

When juxtaposed with previous research, this model has advantages over conventional environmental education models that only focus on the knowledge aspect. Research (Tucker & Grim, 2014) emphasizing that the integration of religion, education, and sustainability can be a strong ethical framework in supporting transformative environmental learning. This study reinforces these findings by showing that a three-dimensional model that combines spirituality, ethics, and practice simultaneously has the potential to produce more stable and sustainable ecological awareness than an approach that relies on only one dimension. The author's personal idea considers that this integrative model has a contextual uniqueness because it is formulated based on the socio-religious reality of the religious Acehese people, so that it has a high level of relevance and acceptance. However, the author also realizes that the implementation of this model requires a long-term commitment from all stakeholders—schools, teachers, parents, religious leaders, and local governments—as well as a continuous monitoring and evaluation system to ensure that these three dimensions are not only discoursed, but are truly internalized in daily life.

As an antithesis, the author questions whether a religion-based approach is always effective in the context of a plural and multicultural society. Although in Banda Aceh, where the Muslim majority is relevant, in the broader context, the integration of eco-theology needs to be adapted taking into account the diversity of local beliefs and values. Therefore, this model is not intended as a *one-size-fits-all solution*, but as a framework that can be adapted and contextualized according to the socio-cultural and religious characteristics of each region. The author argues that the essence of this model—namely the strengthening of ecological awareness through the integration of spiritual, ethical, and practical values—is universal and can be applied in various contexts with adjustments to the content of relevant local values. Thus, the main contribution of this research is not only to the formulation of integrative models, but also to the strengthening of the theoretical argument that

effective environmental education must touch all dimensions of humanity: cognitive, affective, spiritual, and behavioral.

CONCLUSION

This study concludes that the young generation in Banda Aceh City has a fairly good understanding of the importance of protecting the environment, but the implementation of ecological behavior is still inconsistent due to the influence of the social environment, low peer examples, and the dominance of learning approaches oriented to cognitive aspects. The integration of eco-theology and environmental ethics has proven to have great potential in strengthening environmental ethics and ecological awareness of students, where religious values such as khalifah fil ardh, amanah, and mizan can become a moral foundation that strengthens students' commitment to protecting the environment in a sustainable manner. This study also formulates a three-dimensional integrative learning model that combines the internalization of religious values (spiritual dimension), reflection of environmental ethics (ethical dimension), and ecological practices (practical dimension) as a strategy to strengthen the environmental character of the younger generation. Thus, the simultaneous and sustainable integration of eco-theology and environmental ethics has proven to be able to bridge the gap between ecological knowledge and action, as well as become an alternative approach to environmental education that is relevant to the socio-religious context of the Acehnese people.

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