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A Model for Integrating Ecological Values into the Islamic Education Learning System in Indonesia

Asep Sutisna Sanjaya [a,1,*], Subiantoro[b,2], Firmansyah[c,3], Nur Kholik[d,4]

[*a] Nusa Putra University, Indonesia;
[b] Darul Ishlah College of Islamic Education, Indonesia;
[c] Raden Fatah State Islamic University Palembang, Indonesia;
[d] Alma Ata University, Indonesia;
[1]asepss1945@gmail.com; [2]subiantoro810@gmail.com; [3]firmansyah_uin@radenfatah.ac.id;
[4]nurkholik@almaata.ac.id;
*Correspondent Author; asepss1945@gmail.com

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ABSTRACT

The global ecological crisis demands that religious education go beyond normative instruction and become a learning system that shapes learners' ecological awareness and behavior. Previous studies in Indonesia have documented eco-theology, eco-pesantren, and green madrasas, yet they tend to be partial, to rely on single cases, and to stop short of formulating an integrative architecture that links theological foundations with curriculum, pedagogy, governance, and assessment. This article aims to formulate a model for integrating ecological values into the Islamic education learning system in Indonesia. The study employs a qualitative approach with a conceptual model development design, drawing on a qualitative systematic literature review of publications from 2021–2026, analyzed through reflexive thematic analysis and followed by model synthesis. The analysis yields five interrelated model components: (1) theological–ethical foundation, (2) layered curriculum, (3) cyclical pedagogy (tadabbur, ta'lim, tajribah, 'amal, muhasabah), (4) green institutional ecosystem, and (5) continuous assessment and feedback. These components are implemented in three sequential stages: initiation, strengthening, and institutionalization. Four testable propositions were derived from the model through cross-theme synthesis: recurring relationships among the themes identified in the reviewed literature were formulated as propositions, and each was checked against the studies supporting it and against evidence of contrary or partial findings. The model asserts that integrating ecological values should be understood as a transformation of the learning system, not as an addition of content or ceremonial programs. The article's contribution is both theoretical and practical; empirical validation through expert judgment and field trials constitutes the agenda for further research.

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Introduction

The ecological crisis has become one of the most pressing civilizational problems of this century. The Synthesis Report of the Sixth Assessment Report of the Intergovernmental Panel on Climate Change affirms that human activity has caused global warming with far-reaching impacts on ecosystems and human life, and that it demands immediate action involving all sectors of society (IPCC, 2023). Education occupies a strategic position in this response because it shapes the worldviews, values, and habits of the generation that will inherit the consequences of the crisis. Nevertheless, UNESCO's (2021) global review indicates that environmental issues have not been adequately integrated into education systems, whether at the level of curriculum, teacher training, or assessment. The problem, therefore, is not merely a lack of information about the environment but a systemic failure to make ecological concern an inherent part of the learning process itself.

In the Islamic tradition, the relationship between humans and nature is built on a rich theological and ethical framework. Human beings are positioned as vicegerents (khalifah) on earth (Qur'an 2:30) who bear a trust (amanah) (Qur'an 33:72); the universe is read as signs (ayat kauniyah) of God's oneness; balance (mizan) is affirmed as the order of creation (Qur'an 55:7–9); whereas corruption on earth (Qur'an 7:56; 30:41) and excess (Qur'an 7:31) are condemned. Contemporary scholarship shows that environmental protection is embedded in Islamic teachings and is relevant to the sustainable development agenda, including through the role of education in the Islamic tradition (Bsoul et al., 2022). This ethic of sustainability is also regarded as part of Islam's moral heritage that can enter into dialogue with other traditions in building a shared ethical awareness (Puglisi & Buitendag, 2022; Zilio-Grandi, 2021).

Indonesia, as the country with the largest Muslim population in the world, has thousands of pesantren (Islamic boarding schools) and tens of thousands of madrasas, in addition to Islamic higher education institutions, reaching millions of learners. This network provides considerable moral legitimacy and social reach for faith-based environmental movements. Policy direction has also strengthened in recent years. At the 2025 National Working Meeting on Islamic Education, the Minister of Religious Affairs urged that eco-theology and nature conservation become part of the religious education curriculum (Kompas.com, 2025); the Ministry of Religious Affairs launched the Green Pesantren movement as a concrete expression of eco-theology (NU Online, 2025a); and classical Islamic texts (kitab turats) were positioned as references for building eco-theology in pesantren and schools (NU Online, 2025b). This institutional opportunity makes the question of how ecological values are integrated into learning both urgent and strategic.

Yet there is a clear gap between norm and practice. Kusnan et al. (2026) note that studies of sustainability education from an Islamic perspective often remain at the normative level, that is, affirming environmental protection as a divine mandate without formulating a systematic model for implementing it in educational institutions. According to their findings, existing green practices in Islamic educational institutions tend to be habit-based and are not yet supported by a formal policy framework; some initiatives even stop at symbolic messages such as posters, without supporting facilities and monitoring systems, while obstacles in the form of limited funding, gaps in educators' ecological literacy, and policy inconsistency remain dominant. A sharper irony is raised by Suryanullah et al. (2025): Islamic mass organizations, commonly regarded as guardians of values and protectors of the environment, have become involved in the exploitation of natural resources after the government opened the opportunity for religious organizations to manage mines. This phenomenon shows that possessing a rich ethical tradition does not automatically result in the internalization of ecological values. The research problem can therefore be formulated as follows: ecological values in Islam have not been treated as an integrated component of the Islamic education learning system, so they tend to appear as additional topics, incidental activities, or institutional symbols rather than as a learning architecture that shapes awareness, knowledge, and behavior on a sustained basis.

Previous research has laid an important foundation for this problem. Broadly, it can be grouped into five streams, each of which illuminates one part of the problem without addressing the whole. The first stream is general environmental education, which provides pedagogical and policy tools but is largely detached from religious frameworks. UNESCO (2021) shows that environmental issues remain inadequately integrated into curriculum, teacher training, and assessment, while Wijaya Mulya and Salvi (2024) note that dominant approaches have been criticized as overly secular and Western-oriented. Because these approaches lack theological grounding, they cannot give ecological action the religious meaning that motivates Muslim learners, and they cannot simply be transplanted into Islamic education.

The second stream turns to curriculum and learning within Islamic education itself. Rohman et al. (2024), Taisir et al. (2024), and Lutfauziah et al. (2023) examined how eco-theology and environmental sustainability can be incorporated into the curriculum, Rahman et al. (2025) analyzed the representation of ecological ethics in Islamic Religious Education textbooks, and Dewi (2021) and Agustin et al. (2023) discussed how ecological awareness can be built through Islamic values. This stream clarifies what should be taught, yet it mostly stops at content and curriculum documents. How such content is taught progressively, reinforced by institutional practice, and assessed remains largely unspecified.

The third stream, studies of eco-pesantren, addresses this limitation by examining practice. Wijaya Mulya and Salvi (2024) showed that environmental education praxis can be grounded in Islamic spirituality and connected with grassroots struggles. Akbar et al. (2023), Bakri (2021), Syukri et al. (2024), Karman et al. (2023), Syarifah and Amin (2022), and Irawan (2022) traced, respectively, the dynamics of eco-pesantren, their assessment, eco-theology-based Qur'anic learning, ecological movements grounded in the living Qur'an, and the links among Sufism, pesantren, and conservation. This body of work offers considerable contextual and spiritual depth, but because it relies heavily on single cases, its findings are difficult to transfer to madrasas and Islamic higher education institutions.

The fourth stream shifts attention to green madrasas, schools, and institutional governance. Ratnasari et al. (2024) showed how a nature school integrates eco-theology through experiential programs and family involvement. Junaidah et al. (2025), Nugroho et al. (2025), and Wahjusaputri et al. (2025) discussed the implementation, quality improvement, and evaluation of green madrasa and green school programs, Masturin et al. (2022) developed tawhid-based green learning in Islamic higher education, and Kusnan et al. (2026) synthesized the practices and challenges of green management. This stream strengthens the institutional and managerial dimension. However, Kusnan et al. (2026) themselves report that existing practices tend to be habit-based, sometimes symbolic, and weakly supported by policy and monitoring. Program and facility management alone, in other words, does not guarantee that ecological values are internalized by learners.

The fifth stream is conceptual and normative. Suryanullah et al. (2025) offered a set of frameworks, namely eco-religiosity, eco-theology, eco-Sufism, Islamic ecocentrism, eco-pesantren, and Islamic environmental law, as teaching material in Islamic educational institutions, and Mutakin and Rahman (2023) developed an ecological fiqh grounded in maqasid al-shariah. These works supply strong theological and ethical foundations, but they do not translate those foundations into curriculum design, pedagogical sequences, governance arrangements, or assessment instruments.

Read together, these five streams explain why existing approaches remain insufficient. First, they are partial: each covers only one or two dimensions, so the reciprocal relationships among theological foundations, curriculum, pedagogy, governance, and assessment have not been formulated within a single coherent architecture. Second, they are context-bound: reliance on single cases and normative analyses enriches contextual understanding but limits transferability across pesantren, madrasas, and Islamic higher education institutions. Third, the pedagogical and assessment dimensions, that is, how ecological values are taught progressively and how their attainment is measured, are the least developed, even though they

determine whether values become sustained behavior rather than remaining declared norms. The field therefore has strong norms and many programs, but lacks an integrative model that explains how the two are connected. To the best of our knowledge, within the literature reviewed for this study, no model explicitly links these five dimensions as a single Islamic education learning system that can be adapted to different types of institutions.

This article addresses that gap, and its novelty lies in four respects. First, it integrates theology, curriculum, pedagogy, institutional governance, and assessment as interdependent components of one learning system rather than treating them as separate topics. Second, it operationalizes theological foundations through a cyclical pedagogy of tadabbur, ta'lim, tajribah, 'amal, and muhasabah and through continuous assessment and feedback, the two dimensions least developed in the existing literature. Third, it specifies three implementation stages, namely initiation, strengthening, and institutionalization, that can be adapted to pesantren, madrasas, and Islamic higher education. Fourth, it formulates testable propositions that open the model to empirical validation. The model was formulated through a thematic synthesis of literature published from 2021 to 2026.

The study is guided by three research questions: (1) what themes form the basis for integrating ecological values into Islamic education according to recent literature; (2) what model architecture connects these themes within a single learning system; and (3) what are the implementation stages and implications of the model for different types of Islamic educational institutions. The article's contribution is theoretical, in that it shifts the discussion from integration as the addition of content to integration as system transformation, and practical, in that it provides a framework that curriculum designers, pesantren and madrasa leaders, and policymakers can use as a reference.

Method

This study uses an interpretive qualitative approach, which allows meanings and relationships among ideas to be examined in depth and flexibly in textual data (Creswell & Creswell, 2023). The design is conceptual model development through a qualitative systematic literature review. This design was chosen because of the research objective, namely to formulate an integration architecture from accumulated evidence scattered across various contexts, rather than to test the effectiveness of a particular intervention. The resulting model is positioned as an initial conceptual model awaiting empirical validation. The research data consist of scholarly journal articles, book chapters, international scientific assessment reports, and relevant policy documents or news reports published between 2021 and 2026. The search was conducted through Google Scholar, the Garuda portal, the *Directory of Open Access Journals*, Crossref, and journal publishers' websites, using combinations of keywords in Indonesian and English, among them "ekoteologi", "pendidikan Islam berbasis lingkungan", "eco-pesantren", "madrasah hijau", "fikih lingkungan", "Islamic environmental education", "Islamic eco-theology", and "education for sustainable development". The search was extended through the reference lists of core articles (*snowballing*) to reach works that did not appear in the initial search.

Sources were included if (a) they were published between 2021 and 2026; (b) they addressed Islamic education in Indonesia or provided a directly relevant conceptual basis for integrating ecological values into education, including global scientific reports on climate change and environmental education; (c) they were available in full text or as a sufficiently informative abstract; and (d) they were written in Indonesian or English. Sources were excluded if they were opinion pieces without academic argumentation, lacked verifiable bibliographic identifiers, or addressed environmental issues only marginally. News reports and policy documents were used only to a limited extent, as evidence of the policy context rather than as a basis for conceptual synthesis. All cited sources are presented in full with digital identifiers (DOI or URL) in the reference list so that readers can verify them.

The analysis was carried out in three interlinked stages. First, the data were condensed, displayed, and concluded iteratively following the qualitative data analysis procedure of Miles

et al. (2020), by sorting the core information of each source into an extraction matrix covering the context, focus of study, values or concepts referred to, learning or institutional practices, and reported obstacles. Second, the matrix was coded and developed into themes through reflexive thematic analysis following the six phases of Braun and Clarke (2021): familiarization with the data, coding, generating initial themes, reviewing themes, defining and naming themes, and writing up. Content analysis was used as a complement at the coding stage to ensure the consistency of categories, in line with the view that content analysis and thematic analysis are mutually complementary (Humble & Mozelius, 2022). Third, the themes were transformed into model components through cross-theme mapping, that is, by identifying the functional relationships among themes (foundation, process, supporting structure, and feedback mechanism) and then formulating them into the model architecture, implementation stages, and propositions. The credibility of the analysis was pursued through source triangulation (empirical research articles, conceptual studies, global reports, and policy documents), an audit trail of coding and theme-development decisions, and the presentation of supporting evidence for each main claim with traceable references. This study has limitations: the corpus is restricted to publications that are accessible and indexed in the databases used; the synthesis is interpretive and therefore highly dependent on the quality of reporting in the primary studies; and the resulting model has not yet been empirically tested in real educational institutions.

Results and Discussion

A Plural and Convergent Theological–Ethical Foundation

The literature shows a diversity of reference frameworks used to ground ecological ethics in Islamic education. Suryanullah et al. (2025) identify eco-religiosity, eco-theology, eco-Sufism, Islamic ecocentrism, eco-pesantren, and Islamic environmental law as frameworks useful for teaching; Mutakin and Rahman (2023) link ecological fiqh with *maqasid al-shariah*; Masturin et al. (2022) position tawhid as the basis of green learning that culminates in the formation of the *insan kamil* (the perfect human being); and Lutfauziah et al. (2022) and Irawan (2022) explore the Sufi dimension of environmental education and conservation practices in pesantren. Despite their diversity, these frameworks converge on a number of recurring driving values, namely tawhid, *khalifah* and *amanah*, balance (*mizan*), cleanliness (*taharah*), simplicity and the rejection of wastefulness (*israf*), and compassion toward all creatures. Kusnan et al. (2026) explicitly cite cleanliness (*taharah*), simplicity (*basatah*), and stewardship (*khilafah*) as values that shape learners' ecological character. This plurality is both a richness and a risk: without synthesis, institutions tend to choose one framework arbitrarily and produce inconsistent practices.

Studies of curriculum position Islamic Religious Education and character education as the main vehicles of integration (Rohman et al., 2024; Taisir et al., 2024), including in developing environmental education curricula in pesantren (Lutfauziah et al., 2023). Attention has also been directed to teaching materials, as seen in the analysis of the representation of ecological ethics in Islamic Religious Education textbooks (Rahman et al., 2025). Another point that emerges from the literature is that enriching curriculum content does not necessarily lead to behavioral change, because successful green practices are found to be supported more by routines, role modeling, and institutional culture than by instructional materials alone (Kusnan et al., 2026). In other words, the curriculum needs to be understood as layered, encompassing what is taught, what is done, and what is lived.

Experiential and Contextual Learning

The practices reported in the literature rely heavily on direct experience and local context. A nature school in Yogyakarta, for instance, introduces learners to nature through outings, involves families in a Family Conservation Day, and fosters responsibility through environmental action (Ratnasari et al., 2024). In eco-pesantren, environmental education praxis is reported to be connected with grassroots community struggles and with cultural–religious discursive resources familiar to the students (*santri*) (Wijaya Mulya & Salvi, 2024); other studies trace the dynamics of eco-pesantren development and ecological movements based on the *living Qur'an* (Akbar et al., 2023; Syarifah & Amin, 2022), and position the learning

of the Qur'an, fiqh, and ethics (*akhlaq*) as entry points for cultivating ecological awareness (Karman et al., 2023; Syukri et al., 2024). These findings indicate that ecological values are more readily internalized when connected with real experience, local problems, and learners' social relationships.

The sustainability of programs is determined by the support of institutional structures. Kusnan et al. (2026) highlight policy, educator capacity, facilities, and external collaboration as determining factors; Junaidah et al. (2025) discuss how green madrasa programs are implemented and sustained; Nugroho et al. (2025) and Wahjusaputri et al. (2025) examine Adiwiyata madrasa programs and green schools in Islamic institutions; and Bakri (2021) develops an eco-pesantren assessment. Beyond the religious context, Altassan (2023) offers a holistic framework that combines infrastructure, behavior change, and recycling practices in educational institutions, and Sulhan and Hakim (2023) emphasize the importance of student character culture in Islamic education management. Both reinforce the argument that a whole-institution approach is more promising than stand-alone programs.

Challenges: Fragmentation, Symbolism, and the Norm–Practice Gap

The most consistently reported challenges are fragmentation and symbolism. Green practices tend to be scattered, small in scale, and dependent on individual initiative (Kusnan et al., 2026). Limited funding, the low ecological literacy of some educators, and policy inconsistency weaken continuity. At a broader level, the involvement of religious organizations in the management of extractive natural resources shows that strong theological discourse can coexist with practices that contradict it (Suryanullah et al., 2025). This finding underscores the need for accountability mechanisms, namely assessment and feedback, so that integration does not remain mere rhetoric.

A Model for Integrating Ecological Values into Islamic Education Learning

Based on the thematic mapping, this study formulates the Ecological Integration Model for Islamic Education Learning, which consists of five components. The model is read from top to bottom: the theological–ethical foundation serves as the source of values for the three operational components, namely curriculum, pedagogy, and institutional ecosystem; these three converge on assessment; and the assessment results feed back to improve all components through a feedback mechanism. This relationship is illustrated in Figure 1.

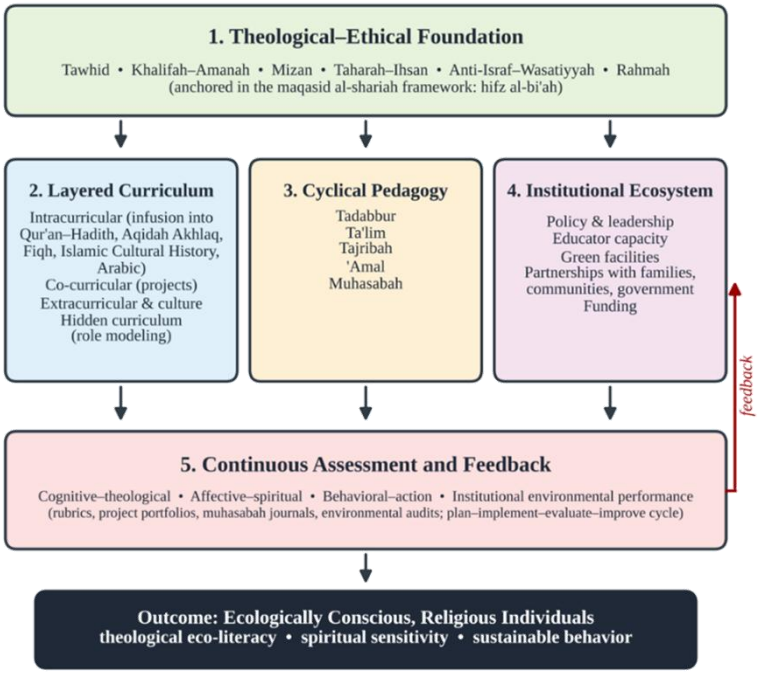


Figure 1. Ecological Integration Model for Islamic Education Learning

The first component functions as the source of legitimacy, intrinsic motivation, and criteria for selecting learning content. The model proposes six driving values formulated from the convergence of the literature: tawhid (nature as a sign of God's oneness and as creation that holds value in itself), *khalifah–amanah* (stewardship responsibility that will be held to account), *mizan* (balance and the limits of carrying capacity), *taharah* and *ihsan* (cleanliness and doing good to the environment), anti-*israf* and *wasatiyyah* (moderation in consumption), and *rahmah* (compassion toward all creatures, including inanimate ones). These six values are anchored in the *maqasid al-shariah* framework, with environmental protection (*hifz al-bi'ah*) regarded in this model as a prerequisite for the preservation of life, intellect, lineage, and property; the foundation of an ecological fiqh based on *maqasid al-shariah* can be found in Mutakin and Rahman (2023). It is important to note that a purely instrumental, anthropocentric reading of the concept of *khalifah* needs to be balanced by the ideas of Islamic ecocentrism and eco-Sufism, which emphasize the interconnectedness of humans and nature (Suryanullah et al., 2025). In implementation, this foundation is plural yet curated: institutions choose references in line with their scholarly traditions, for example *kitab turats* in traditional (*salaf*) pesantren (NU Online, 2025b) or environmental fiqh in madrasas, while still incorporating all six driving values. Framing ecology as moral character (*akhlaq*) and worship (*ibadah*), rather than as mere administrative compliance, has been reported to make environmentally friendly behavior in Islamic schools more sustainable and to strengthen the intrinsic motivation of school community members (Kusnan et al., 2026).

The second component treats the curriculum as four mutually reinforcing layers. The *intracurricular* layer maps and infuses ecological learning outcomes into the cluster of Islamic Religious Education subjects: Qur'an–Hadith (*kauniyah* verses, *khalifah*, and the prohibition of *fasad*, or corruption), Aqidah Akhlaq (ethics toward the environment), Fiqh (environmental fiqh, including cleanliness, water, common ownership, and the prohibition of destruction), Islamic Cultural History (the management of resources and cities in Islamic civilization), and Arabic (literacy in classical and contemporary texts about nature). This mapping also links the Islamic Religious Education cluster with science and social studies subjects so that theological and scientific understanding proceed hand in hand (Rohman et al., 2024; Taisir et al., 2024). The *co-curricular* layer consists of cross-subject thematic projects based on local environmental problems, for example waste, water, and local food management. The *extracurricular and cultural* layer includes interest-group activities, structured communal work, and institutional traditions such as regular eco-theology study sessions. The *hidden curriculum* layer concerns the role modeling of leaders and educators, institutional rules, and spatial arrangements that convey value messages indirectly. The need for this last layer is supported by findings that green behavior becomes normal through repetition and visual cues in the learning environment (Kusnan et al., 2026). The quality of teaching materials should be reviewed periodically, given that the representation of ecological ethics in textbooks has become an object of study in its own right (Rahman et al., 2025).

The third component addresses the pedagogical gap identified in the introduction. The model proposes a five-phase cycle adapted from Islamic learning traditions and combined with the experiential learning widely found in the practices of eco-pesantren and nature schools. The *tadabbur* (contemplation) phase invites learners to reflect on revealed texts and natural phenomena as two sources of signs (*ayat qauliyah* and *kauniyah*), so that spiritual awareness of nature grows. The *ta'lim* (instruction) phase provides conceptual understanding that combines environmental fiqh, ethics, and scientific knowledge about ecosystem damage and restoration. The *tajribah* (experience) phase provides direct experience, such as field observation, gardening, waste and water audits, and visits to affected communities, as practiced through outings at a nature school (Ratnasari et al., 2024) and through eco-pesantren praxis grounded in local context (Wijaya Mulya & Salvi, 2024). The *'amal* (action) phase turns understanding into collective action in the form of local problem-solving projects involving families and communities, in line with the parental involvement model of the Family Conservation Day (Ratnasari et al., 2024). The *muhasabah* (self-reflection) phase invites

learners to reflect on their behavior, consumption, and the impact of their actions, among other ways through reflective journals and group discussions, and its results then trigger the next *tadabbur* cycle at a deeper level. This cyclical character is important because the internalization of values is understood as a repeated process, not a single event.

The fourth component provides the structure that sustains learning. It comprises (a) policy and leadership, namely a green vision and mission, internal regulations, and the commitment of the *kiai*, madrasa head, or university leadership; (b) educator capacity through training in eco-theology and environmental pedagogy, given that variation in educators' ecological literacy is a real obstacle (Kusnan et al., 2026); (c) green facilities and infrastructure such as waste management, energy and water conservation, and green spaces that function as learning laboratories (Altassan, 2023; Junaidah et al., 2025); (d) partnerships with families, surrounding communities, government, and environmental organizations; and (e) realistic funding, starting with low-cost, habit-based practices before moving on to more expensive green technology. This component operationalizes the whole-institution approach and is a prerequisite for ensuring that programs do not depend on particular individuals (Nugroho et al., 2025; Wahjusaputri et al., 2025). The strong character culture of santri communities also serves as social capital that can be mobilized (Sulhan & Hakim, 2023).

The fifth component responds to the challenge of symbolism by ensuring that there is evidence of attainment. Assessment covers four domains. The cognitive–theological domain assesses understanding of eco-theological concepts, environmental fiqh, and environmental science. The affective–spiritual domain assesses sensitivity, sense of responsibility, and depth of appreciation (for example, through *muhasabah* journals and attitude rubrics). The behavioral–action domain assesses habits and real engagement through structured observation and project portfolios. The institutional environmental performance domain assesses institutional indicators such as waste volume, water and energy consumption, and the extent of green space, which can draw on the eco-pesantren assessment instrument (Bakri, 2021) and the evaluation of green school programs (Wahjusaputri et al., 2025). Assessment results are fed back to all components through a plan–implement–evaluate–improve cycle, so that the curriculum, pedagogy, and institution are updated periodically. This mechanism also serves as a safeguard against the gap between discourse and practice warned of by Suryanullah et al. (2025).

Implementation and Contextual Differentiation

The model is implemented in three stages. The *initiation* stage includes diagnosing the context (environmental conditions, scholarly traditions, and resources), aligning the commitment of leaders, mapping the existing curriculum, and providing initial training for educators. The *strengthening* stage includes piloting the layered curriculum and the pedagogical cycle in several classes or units, mentoring, and monitoring with assessment instruments. The *institutionalization* stage includes establishing formal policy, budgeting, setting performance indicators, strengthening networks, and replicating good practices in other units. This sequence places cultural change and capacity building ahead of physical investment, in line with the finding that daily habits and shared values are the initial foundation for a more structured system (Kusnan et al., 2026).

The model needs to be differentiated according to the type of institution. In pesantren, the theological foundation can rest on contextual study of *kitab turats* (NU Online, 2025b), while the *tajribah* and *'amal* pedagogies can draw on environment-based business units such as organic fertilizer, waste banks, and biogas promoted in pesantren empowerment programs (NU Online, 2025a), as well as on the local context of the pesantren (Wijaya Mulya & Salvi, 2024). In madrasas and Islamic schools, the emphasis is placed on curriculum mapping, co-curricular projects, and structured environmental programs such as Adiwiyata madrasas (Nugroho et al., 2025; Junaidah et al., 2025). In Islamic higher education institutions, the model

can be translated into tawhid-based green learning (Masturin et al., 2022), research and community service based on environmental issues, and sustainable campus governance.

Through this study, the proposed model both builds on and integrates earlier findings. Curriculum studies (Rohman et al., 2024; Taisir et al., 2024) reinforce Component 2; studies of eco-pesantren and nature schools (Ratnasari et al., 2024; Wijaya Mulya & Salvi, 2024) provide an empirical basis for Component 3; studies of green governance (Kusnan et al., 2026; Nugroho et al., 2025) support Component 4; and conceptual studies (Mutakin & Rahman, 2023; Suryanullah et al., 2025) underpin Component 1. The novelty of the model lies in three aspects. First, it unites the five dimensions in a single architecture that explains their functional relationships. Second, it explicitly formulates a cyclical pedagogy rooted in Islamic learning traditions, so that integration does not stop at curriculum content. Third, it positions assessment and feedback as constitutive components rather than supplements, so that integration has an accountability mechanism. This position responds to the critique of Kusnan et al. (2026) that Islamic studies of sustainability remain too confined to the normative level, by providing a bridge to operational instruments.

Theoretically, the model shifts the understanding of integration from the addition of topics (*add-on*) toward the transformation of the learning system. This study advances four propositions that can be tested in further research. Proposition 1: the simultaneous integration of the five components produces stronger and more stable internalization of ecological values than partial programs. Proposition 2: framing ecology as moral character and worship increases intrinsic motivation more than framing based on administrative compliance. Proposition 3: a pedagogy that combines theological reflection, direct experience, and community action produces more consistent behavioral change than purely cognitive learning. Proposition 4: institutional capacity, particularly leadership and educator competence, moderates the relationship between curriculum quality and ecological learning outcomes. These four propositions are grounded in patterns visible in the literature but have not yet been tested causally.

For institutional managers, the model suggests that green efforts should begin not with costly physical projects but with strengthening values, capacity, and habits, and then progress gradually toward institutionalized systems. For curriculum designers, the model offers a map of how ecological outcomes can be placed in subjects, projects, and school culture without excessively increasing the content load. For policymakers, the Ministry of Religious Affairs' push to incorporate eco-theology into the curriculum and to promote Green Pesantren (Kompas.com, 2025; NU Online, 2025a) will have greater impact if accompanied by attainment standards, assessment instruments, and schemes for building educators' capacity, so that policy does not stop at ceremony. In addition, these initiatives need to be kept consistent with institutional positions on other environmental issues, because misalignment between message and practice risks eroding the credibility of values education (Suryanullah et al., 2025).

Conclusion

This study formulates the Ecological Integration Model for Islamic Education Learning based on a synthesis of literature from 2021 to 2026. The synthesis yields five themes: a plural yet convergent theological–ethical foundation, the curriculum as a medium of integration with clear boundaries, experiential and community-based learning, institutional governance as the determinant of sustainability, and the challenges of fragmentation and symbolism. These themes were transformed into a five-component model: a theological–ethical foundation, a layered curriculum, a cyclical pedagogy of tadabbur, ta'lim, tajribah, 'amal, and muhasabah, a green institutional ecosystem, and continuous assessment and feedback. The model is implemented through three stages, namely initiation, strengthening, and institutionalization, each with its own objectives, activities, and indicators, and it is differentiated according to the type of institution.

The main contribution of the model is theoretical and practical. Theoretically, it shifts the understanding of integration from the addition of content or ceremonial programs toward the

transformation of the learning system, and it explains the functional relationships among theology, curriculum, pedagogy, governance, and assessment, which earlier studies treated separately. It also offers four propositions that can be tested. Practically, it provides a framework that curriculum designers, the leaders of pesantren, madrasas, and Islamic higher education institutions, and policymakers can use as a reference. For Islamic education policy and practice, the model has several implications. Policy that promotes eco-theology and Green Pesantren is likely to be more effective when accompanied by attainment standards, assessment instruments, and educator capacity building, so that it does not stop at symbolic programs. Institutions are advised to begin with values, capacity, and habits before investing in physical facilities. Teacher education and professional development should include eco-theology and experiential pedagogy. Finally, institutional practice should remain consistent with the values taught, because inconsistency weakens the credibility of values education.

The model has not yet been empirically validated. It is based on a synthesis of published literature, much of which consists of single cases and descriptive studies, and the four propositions have not been tested causally. The model should therefore be treated as an initial conceptual model and not as a proven intervention. Further research is recommended to (1) validate the model through expert judgment by scholars of Islamic education, eco-theology, and environmental education, together with instrument readability testing; (2) test the model through limited field trials in pesantren, madrasas, and Islamic higher education institutions with different characteristics, using a design-based or action research approach; (3) test the four propositions through quantitative or mixed-methods designs; and (4) examine the financing and policy factors that enable the model to be replicated in institutions with limited resources.

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