

Integrating Ecotheology into Islamic Religious Education: A Systematic Literature Review on Students' Spiritual, Social, and Cognitive Character Development

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Abstract

The global ecological crisis demands an educational response that is not only technical but also ethical and spiritual. This study systematically reviews the integration of ecotheology into Islamic Religious Education (IRE) and synthesizes evidence on its effects on students' spiritual, social, and cognitive character development. Using a Systematic Literature Review design guided by PRISMA 2020, we searched Scopus and Google Scholar for peer-reviewed studies published between 2020 and 2025 using Boolean combinations of eco-theology/Islamic environmental ethics, Islamic education/IRE, and character-related outcomes. After identification, deduplication, screening, and full-text eligibility assessment, 33 studies met the inclusion criteria and were analyzed through thematic narrative synthesis. The findings show that ecotheology is integrated into IRE through three main pathways: (1) curriculum strengthening (learning objectives, content, and materials grounded in Islamic ecological principles), (2) contextual-reflective pedagogies (including problem-based, experiential, and project-based learning), and (3) authentic assessment (e.g., reflective journals, portfolios, and behavior-based observation). Across the reviewed literature, ecotheology integration tends to enhance students' spiritual awareness, strengthen socio-ecological responsibility and solidarity, and foster critical and reflective thinking about sustainability. However, a key limitation across studies is the lack of standardized learning-outcome indicators and validated evaluation instruments for ecotheology within IRE. This review highlights the need for a structured pedagogical framework and an assessment system to support consistent implementation and measurable outcomes in ecotheology-oriented Islamic education.

Keywords: *Ecotheology; Islamic Religious Education; Character Education; Ecological Awareness*

Abstrak

Krisis ekologi global menuntut respons pendidikan yang tidak hanya bersifat teknis, tetapi juga etis dan spiritual. Penelitian ini menyajikan tinjauan literatur sistematis mengenai integrasi ekoteologi dalam Pendidikan Agama Islam (PAI) serta mensintesis temuan-temuan empiris terkait dampaknya terhadap pengembangan karakter spiritual, sosial, dan kognitif peserta didik. Penelitian menggunakan desain Systematic Literature Review (SLR) dengan panduan PRISMA 2020. Proses penelusuran dilakukan melalui basis data Scopus dan Google Scholar terhadap artikel ilmiah yang dipublikasikan antara tahun 2020 hingga 2025, menggunakan kombinasi Boolean yang mencakup konsep ekoteologi/etika lingkungan Islam, pendidikan

Islam/PAI, serta dimensi karakter. Setelah melalui tahap identifikasi, eliminasi duplikasi, penyaringan, dan evaluasi kelayakan teks penuh, sebanyak 33 artikel memenuhi kriteria inklusi dan dianalisis melalui pendekatan sintesis naratif tematik. Hasil kajian menunjukkan bahwa integrasi ekoteologi dalam PAI berlangsung melalui tiga jalur utama: (1) penguatan kurikulum (perumusan tujuan pembelajaran, materi, dan konten berbasis prinsip ekologi Islam), (2) penerapan pedagogi kontekstual-reflektif (termasuk problem-based learning, experiential learning, dan project-based learning), serta (3) penggunaan asesmen autentik (seperti jurnal reflektif, portofolio, dan observasi perilaku). Secara umum, integrasi ekoteologi berkontribusi pada peningkatan kesadaran spiritual peserta didik, penguatan tanggung jawab sosial-ekologis, serta pengembangan kemampuan berpikir kritis dan reflektif terhadap isu keberlanjutan. Namun demikian, keterbatasan utama yang teridentifikasi adalah belum tersedianya indikator capaian pembelajaran yang terstandar serta instrumen evaluasi yang tervalidasi untuk ekoteologi dalam PAI. Kajian ini menegaskan urgensi pengembangan kerangka pedagogis dan sistem asesmen yang sistematis guna mendukung implementasi yang konsisten dan terukur dalam pendidikan Islam berbasis ekoteologi.

Kata Kunci: *Ekoteologi; Pendidikan Agama Islam; Pendidikan Karakter; Kesadaran Ekologis*

A. Introduction

The global ecological crisis, characterized by climate change, environmental degradation, and the unsustainable exploitation of natural resources, has evolved into a multidimensional threat to human survival and ecosystem sustainability.¹ Its consequences extend beyond physical environmental damage, affecting social stability, economic resilience, and public health. In response, governments and institutions have introduced environmental policies, green technologies, and sustainability-oriented educational initiatives. However, these efforts largely operate within a technocratic and rational-instrumental paradigm that emphasizes regulatory control and technical problem-solving. While necessary, such approaches often overlook the deeper ethical and spiritual dimensions underlying ecological destruction.² As a result, the root cause of the crisis—an exploitative and anthropocentric worldview that positions nature as an object of domination rather than stewardship—remains insufficiently addressed.³

Growing scholarly awareness suggests that the ecological crisis reflects not merely an environmental imbalance but also an ethical and spiritual rupture in the relationship between

¹ Azizah Husin et al., “Environmental Education in Schools: Sustainability and Hope,” *Discover Sustainability* 6, no. 1 (2025): 41, <https://doi.org/10.1007/s43621-025-00837-2>.

² Bambang Irawan, “Islamic Boarding Schools (Pesantren), Sufism and Environmental Conservation Practices in Indonesia,” *HTS Teologiese Studies / Theological Studies* 78, no. 4 (2022): a7073, <https://doi.org/10.4102/hts.v78i4.7073>.

³ Nagiya Nagiya and Ali Marzuki Zebua, “Eco-Pedagogic Based on Eco-Theology: Strategies for Building Students’ Spiritual, Social, and Cognitive Character,” *Jurnal Cendekia Media Komunikasi Penelitian Dan Pengembangan Pendidikan Islam* 17, no. 2 (2025): 419–33, <https://doi.org/10.37850/cendekia.v17i02.1091>.

humans and nature.⁴ Addressing ecological degradation, therefore, requires a paradigm capable of reconstructing this relationship in moral and theological terms.⁵ Eco-theology offers such an alternative by framing environmental responsibility within a spiritual worldview that regards nature as part of God's creation. From this perspective, environmental preservation is not merely a pragmatic obligation but also a manifestation of faith and moral accountability.⁶

In the Islamic intellectual tradition, eco-theology is grounded in fundamental theological principles: *tawhid* (divine unity), *khalifah fil ardh* (human stewardship), *amanah* (trust), and *mīzān* (cosmic balance). The Qur'an and Hadith explicitly prohibit environmental destruction (*fasād fi al-ard*) and promote harmonious interaction between humans and the natural world.⁷ These teachings indicate that ecological responsibility is intrinsically embedded within Islamic theology rather than being a peripheral ethical addendum.⁸ Despite this strong theological foundation, ecological values have not yet been systematically integrated into Islamic Religious Education (IRE). In many contexts, IRE continues to prioritize doctrinal mastery and ritual practice, while the ethical, reflective, and praxis-oriented dimensions of environmental responsibility receive limited emphasis in pedagogy.⁹

As a discipline, Islamic Religious Education aims not only to cultivate doctrinal understanding but also to develop students' holistic character across spiritual, social, and cognitive domains.¹⁰ Integrating eco-theology into IRE thus provides an opportunity to transform religious learning into a contextual and responsive framework capable of addressing contemporary ecological challenges.¹¹ Through such integration, Islamic teachings move

⁴ Norah D Aldawsari, Mohamed Ali Nemt-allah, and Mohamed Sayed Abdellatif, "Environmental Education Awareness in Light of Sustainable Development Goals and Its Relationship with Environmental Responsibility Among University Students," *Sustainability* 17, no. 21 (2025): 9393, <https://doi.org/https://doi.org/10.3390/su17219393>.

⁵ Desi Sabtina and Mahariah, "Internalizing Islamic Ecotheology through School Culture to Foster Eco-Character," *Halaqa: Islamic Education Journal* 9, no. 2 (2025): 21–41, <https://doi.org/10.21070/halaqa.v9i2.1754>.

⁶ Amir Mahmud, Maisyanah, and Arif Rahman, "Integrasi Pembelajaran Pendidikan Agama Islam Berwawasan Ekologi Di Sekolah Menengah Pertama Bina Karya Surabaya," *El-Banat: Jurnal Pemikiran Dan Pendidikan Islam* 14, no. 2 (2024): 326–45, <https://doi.org/https://doi.org/10.54180/elbanat.2024.14.2.326-345>.

⁷ Karman, Rosihon Anwar, and Lukman Hakim, "The Qur'anic Learning Based on Islamic Eco-Theology at Pesantren," *Jurnal Pendidikan Islam* 9, no. 2 (2023): 169–86, <https://doi.org/10.15575/jpi.v9i2.24933>.

⁸ Auril Ikhwasul Amal and Saifuddin, "Membangun Karakter Ekoteologi Islam Melalui Penanaman Pohon Dan Kepedulian Lingkungan Di Smpn 11 Banjarbaru," *ADDABANA: Jurnal Pendidikan Agama Islam* 8, no. 2 (2025): 89–99, <https://doi.org/10.47732/adb.v8i2.914>.

⁹ Nur Wakhidah and Erman, "Examining Environmental Education Content on Indonesian Islamic Religious Curriculum and Its Implementation in Life," *Cogent Education* 9, no. 1 (2022): 58–75, <https://doi.org/10.1080/2331186X.2022.2034244>.

¹⁰ Abdul Karim, "Integration of Religious Awareness in Environmental Education," *Qudus International Journal of Islamic Studies* 10, no. 2 (2022): 415–42, <https://doi.org/10.21043/qjijis.v10i2.14404>.

¹¹ M. Faishal Khoirurrijal, Abd Ala, and Hisbullah Huda, "Integrating Religious and Environmental Education in Indonesian Eco-Pesantren: Does Student Religiosity Enhance Environmental Awareness?," *Environmental Education Research*, December 2025, 1–26, <https://doi.org/10.1080/13504622.2025.2600602>.

beyond abstract theological discourse and become internalized as attitudes, ecological awareness, and concrete pro-environmental behaviors.¹²

Empirical studies indicate that values-based environmental education enhances spiritual awareness, social empathy, and critical thinking regarding sustainability issues.¹³ Research has demonstrated positive associations between environmental moral education, Islamic religiosity, and pro-environmental behavior.¹⁴ Other studies show that integrating ecological values into religious education strengthens students' moral responsibility and environmental awareness.¹⁵

Although previous studies have examined the relationship among Islamic religiosity, environmental ethics, and pro-environmental behavior, most focus on specific cases, particular educational levels, or single dimensions of character development. These studies generally employ descriptive or case-based approaches and tend to analyze either the spiritual dimension, social responsibility, or cognitive awareness separately, without offering an integrated analytical framework that explains how eco-theology systematically shapes students' spiritual–social–cognitive character within Islamic Religious Education. Moreover, no recent study has synthesized empirical findings from diverse contexts to map consistent patterns in eco-theology integration strategies across the curriculum, pedagogy, and assessment domains. Therefore, a Systematic Literature Review (SLR) is required to consolidate fragmented findings, critically evaluate methodological trends, and construct a structured conceptual framework. The novelty of this article lies in its systematic mapping of eco-theological integration models and its analysis of their implications for holistic character, while also identifying unresolved gaps, particularly the absence of standardised learning outcome indicators and evaluation instruments in eco-theological Islamic Religious Education.

Based on the above description, this study aims to comprehensively analyse the integration of eco-theology into Islamic Religious Education by reviewing relevant scientific literature, with an emphasis on the pedagogical strategies employed and their implications for

¹² M. Lutfi Mustofa, M. Fauzan Zenrif, and Ahmad Barizi, "Towards an Islamic Ecotheology: Indonesian Muslim Organizations in Climate Mitigation and Adaptation Efforts," *Problemy Ekorozwoju* 20, no. 2 (2025): 21–31, <https://doi.org/10.35784/preko.7089>.

¹³ Dilan Kalaycı Alas and Kurthan Korutürk, "Exploring the Impact of Values Education on Sustainable Environmental Awareness and Behavior Among Eighth-Grade Students," *Sustainability* 16, no. 21 (2024): 9302, <https://doi.org/10.3390/su16219302>.

¹⁴ Abida Begum et al., "Impact of Environmental Moral Education on Pro-Environmental Behaviour : Do Psychological Empowerment and Islamic Religiosity Matter ?," *International Journal of Environmental Research and Public Health Article* 18, no. 4 (2021): 1604, <https://doi.org/https://doi.org/10.3390/ijerph18041604> Academic.

¹⁵ Aldawsari, Nemt-allah, and Abdellatif, "Environmental Education Awareness in Light of Sustainable Development Goals and Its Relationship with Environmental Responsibility Among University Students."

students' character development. Specifically, this study maps how eco-theological values have been internalised in Islamic Religious Education, identifies the patterns and forms of integration used in the learning process, and examines their impact on students' spiritual, social, and cognitive character development.

By offering a comprehensive integrative mapping rather than a case-specific analysis, this study contributes to the field in two significant ways: theoretically, by constructing an integrated analytical framework that explains how eco-theology operationalizes holistic character formation within Islamic Religious Education; and practically, by proposing directions for the standardization of learning outcome indicators and assessment instruments to ensure measurable, sustainability-oriented character development. In doing so, this research advances the discourse from fragmented empirical findings toward a structured, replicable, and policy-relevant model of eco-theological education.

B. Research Methods

This study uses a qualitative approach with a Systematic Literature Review (SLR) following the PRISMA 2020 guidelines to systematically examine the integration of eco-theology in Islamic Religious Education and its impact on the formation of students' spiritual, social, and cognitive characters. This method was chosen because it allows researchers to identify, evaluate, and synthesise prior research findings in a structured and transparent manner, resulting in a comprehensive conceptual map of the topic under study.¹⁶

A systematic literature search was conducted in January 2026 using two academic databases, Scopus and Google Scholar, in accordance with the PRISMA 2020 guidelines to ensure transparency and replicability. In Scopus, the search string was applied using the TITLE-ABS-KEY field as follows: (“eco-theology” OR “Islamic environmental ethics” OR “Islamic ecotheology”) AND (“Islamic Religious Education” OR “Islamic education” OR “faith-based education”) AND (“character education” OR “spiritual character” OR “social character” OR “cognitive development” OR “environmental awareness”), limited to peer-reviewed journal articles published between 2020 and 2025 in English or Indonesian. In Google Scholar, the advanced search employed the Boolean combination (“eco-theology” OR “Islamic environmental ethics”) AND (“Islamic Religious Education” OR “IRE”) AND (“character” OR “spiritual” OR “social” OR “cognitive”) with the same publication year limitation (2020–2025). To ensure academic rigour and reduce heterogeneity, only articles published in journals

¹⁶ David Moher et al., “Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement,” *PLoS Medicine* 6, no. 7 (2009): 1000097, <https://doi.org/10.1371/journal.pmed.1000097>.

indexed in SINTA (1–4), DOAJ, or Scopus and subjected to a transparent peer-review process were retained.

Based on the PRISMA flow diagram in Figure 1, the identification stage yielded 638 records (Scopus: 313; Google Scholar: 325). All retrieved records were exported to Mendeley Data and cross-checked in Microsoft Excel to ensure accurate deduplication. A total of 384 duplicate records were removed, leaving 254 for screening. During the title and abstract screening stage, 125 articles were excluded for being irrelevant to Islamic Religious Education, lacking an educational focus, or discussing environmental issues without theological integration. The remaining 84 articles were assessed for full-text eligibility. At this stage, 23 articles were excluded for the following primary reasons: insufficient methodological transparency ($n = 34$) and the absence of an explicit educational outcome ($n = 17$). Ultimately, 33 articles met all inclusion criteria and were included in the qualitative synthesis.

For data extraction, a structured coding matrix was developed in Microsoft Excel to systematically record key variables from the 33 included studies, including: publication information (author, year, journal indexing), education level (elementary school, junior high school, Islamic boarding school, college), research design (qualitative, quantitative, mixed methods, literature-based), form of eco-theology integration (curriculum, learning process, assessment), pedagogical approaches applied, and reported impacts on students' spiritual, social, and cognitive characteristics. The synthesised findings were then analysed thematically to identify dominant pedagogical patterns and trends in the internalisation of ecological values in Islamic Religious Education. The main themes to be analysed were: (1) forms and strategies of eco-theology integration in Islamic Religious Education, (2) pedagogical approaches used in internalising ecological values based on Islamic theology, and (3) the impact of this integration on student character development. This thematic grouping allows researchers to identify dominant patterns, variations in approach, and methodological trends in ecotheology and Islamic education studies. The results of this thematic analysis are then synthesised narratively and analytically to build a comprehensive picture of the development of ecotheology studies in Islamic Religious Education, while affirming the contribution of this research to the discourse on Islamic education and environmental sustainability.¹⁷

¹⁷ Sirwan Khalid Ahmed et al., "Using Thematic Analysis in Qualitative Research," *Journal of Medicine, Surgery, and Public Health* 6 (2025): 100198, <https://doi.org/10.1016/j.glmedi.2025.100198>.

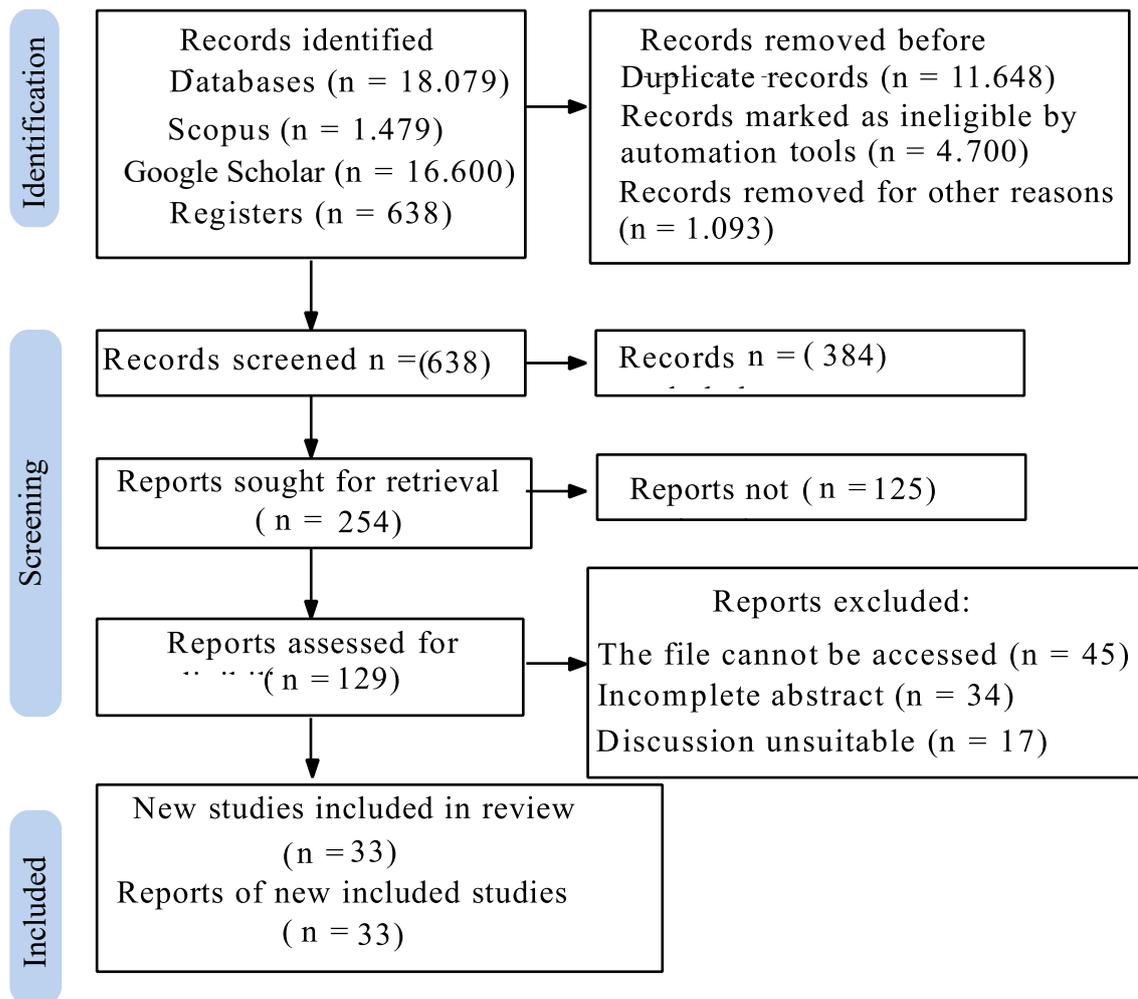


Figure 1. PRISMA Flow Diagram

C. Results and Discussion

The following section presents findings from a systematic literature review of 33 studies that examine the integration of eco-theology into Islamic Religious Education. The results are organised to highlight research trends, methodological patterns, and thematic foci, particularly their impact on students' spiritual, social, and cognitive character development.

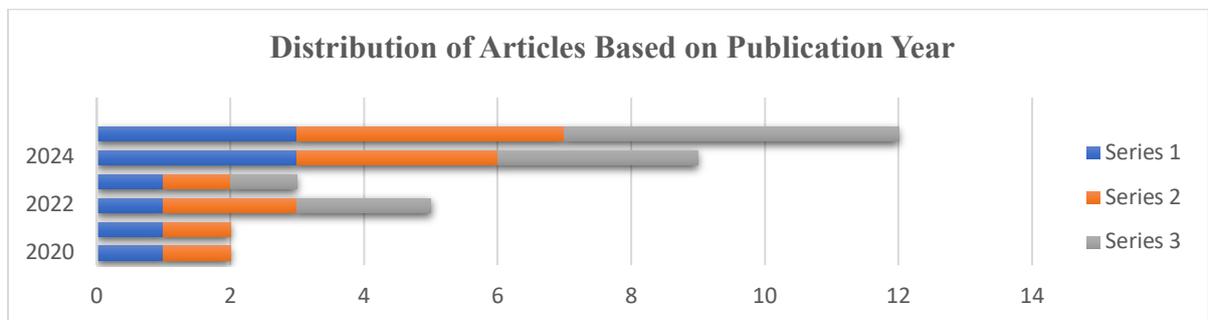


Figure 2: Distribution of Articles Based on Publication Year

The diagram illustrating the Distribution of Articles by Year of Publication shows a clear upward trend in scientific attention to eco-theology and environmental integration in Islamic Religious Education over time. From 2020 to 2022, the number of publications was relatively limited but increased gradually, indicating that the discourse on eco-theology in Islamic Religious Education remained a developing field of research. Although there was a slight decline in 2023, this trend did not last long; in 2024, there was a significant surge in publications, representing the peak in research results in the reviewed dataset. The peak was in 2025, with the highest number of articles, indicating that the integration of ecotheology into Islamic Religious Education is gaining widespread attention as a relevant pedagogical approach for addressing global environmental issues.

The significant growth in recent years indicates that the integration of ecotheology into Islamic Religious Education has become an important and timely academic concern, particularly in response to global ecological challenges and the increased emphasis on values-based environmental education. The dominance of publications from 2024–2025 indicates a shift toward more applied, context-based studies exploring the impact of integrating ecotheology on students’ spiritual, social, and cognitive development. Overall, this graph reflects an increase in academic interest and the strengthening of ecotheology’s position as an important conceptual framework in the development of Islamic Religious Education curricula and learning practices oriented towards ecological awareness and the formation of sustainable religious character.

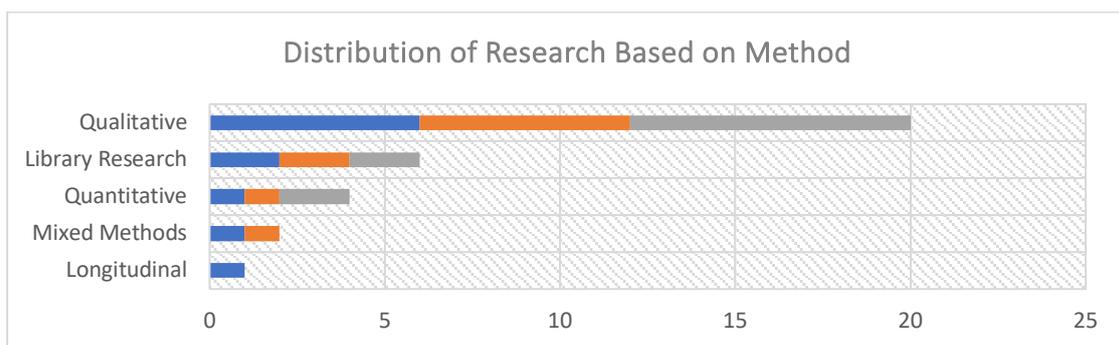


Figure 3. *Distribution of Research Based on The Method*

The distribution of research methods presented in the diagram shows a strong dominance of qualitative approaches in studies examining the integration of eco-theology in Islamic Religious Education (IRE). Of the 33 articles selected, qualitative research accounted for the majority, while quantitative research, mixed-methods research, literature-based research, and longitudinal research accounted for much smaller proportions. This methodological trend reflects the nature of eco-theology studies, which primarily emphasize

contextual understanding, the internalization of values, and interpretive analysis of the integration of religion and the environment in educational settings.

The dominance of qualitative research aligns well with the focus of this systematic literature review, which explores the impact of eco-theology integration on students' spiritual, social, and cognitive development. The qualitative approach allows researchers to capture nuanced transformations in students' attitudes, ethical awareness, and religious-environmental consciousness that are difficult to quantify. However, the limited number of quantitative and mixed-methods studies indicates a methodological gap in empirically measuring these impacts in a more systematic and generalizable manner.

Table 1.
Systematic Mapping of Eco-Theological Integration in Islamic Religious Education Across Educational Levels

Author–Year	Country/Context	Level of Education	Method	Focus of Integration	Reported Impact
Sabtina & Maharia (2025)	Indonesia	Secondary School	Qualitative (Phenomenology)	School-culture-based eco-theology internalisation (PBL, outdoor class, 5R, zero waste)	Spiritual, Social
Karman et al. (2023)	Indonesia	Islamic Boarding School	Qualitative Ethnography	Qur'anic learning based on Islamic eco-theology	Spiritual, Social
Mahmud et al. (2024)	Indonesia	Higher Education	Qualitative (Case Study)	Experiential learning for Islamic environmental sustainability values	Spiritual, Cognitive
Amal & Saifuddin (2025)	Indonesia	Secondary School	Qualitative (Descriptive)	Tree-planting activities for Islamic eco-theological character building	Spiritual, Social
Nagiya & Zebua (2025)	Indonesia	Primary (Nature School)	Qualitative (Case Study)	Eco-pedagogy based on eco-theology (green programs, outing class, waste management)	Spiritual, Social, Cognitive
Supriyandi et al. (2025)	Indonesia	Secondary (Islamic School)	Qualitative (Descriptive)	Religious and disciplinary character strategies integrated with environmental awareness	Spiritual, Social
Wakhidah & Erman (2022)	Indonesia	Primary–Secondary	Qualitative (Case Study)	Integration of environmental education in Islamic religious curriculum	Spiritual, Social
Karim (2022)	Indonesia	Community-based Religious Education	Qualitative (Participatory Action)	Integration of religious awareness in environmental education	Spiritual, Social

Olsson et al (2022)	Sweden	Secondary School	Longitudinal Study	Education for Sustainable Development (ESD) implementation	Cognitive
Mustofa et al. (2025)	Indonesia	Community & Islamic Organisations	Qualitative (Case Study)	Islamic ecotheology in climate mitigation and adaptation initiatives	Spiritual, Social
Khoirurrijal et al. (2025)	Indonesia	Islamic Boarding School	Mixed Methods (Sequential Exploratory)	Integration of religiosity and environmental education (eco-pesantren model)	Spiritual, Cognitive
Taufikin (2025)	Indonesia	Islamic elementary school	Qualitative (Case Study)	Substantial integration of eco-theology into the curriculum	Spiritual, Social, Cognitive
Masyukroh et al. (2023)	Indonesia	Early Childhood Education	Qualitative (Case Study)	Environmental literacy integration in early childhood education	Spiritual, Social
Fauziah et al (2024)	Indonesia	Vocational High School	Quantitative	Integration of Islamic values for green skill development	Cognitive, Spiritual
Muhamad et al. (2024)	Malaysia	Higher Education	Qualitative (Case Study)	Experiential learning to instil Islamic environmental sustainability values	Spiritual, Cognitive
Romlah, et al. (2024)	Indonesia	Islamic Education Institutions	Literature Study	Environment-based learning management in Islamic education	Spiritual, Social
Aryanto et al. (2025)	Indonesia	Secondary School	Qualitative (Descriptive)	Integration of Islamic ecotheology and participatory learning	Spiritual, Social
Begum et al. (2021)	Malaysia	Higher Education	Quantitative	Environmental moral education and Islamic religiosity	Spiritual, Cognitive
Irawan (2022)	Indonesia	Islamic Boarding School	Qualitative (Descriptive)	Environmental conservation practices taught to students	Spiritual, Social
Rohman et al. (2024)	Indonesia	Secondary School	Qualitative (Literature Study)	Integration of eco-theology in Islamic Religious and Character Education curriculum	Spiritual, Cognitive
Rahman et al. (2023)	Indonesia	Secondary (Integrated Islamic School)	Qualitative (Descriptive)	Teachers' perspectives on integrating environmental education	Spiritual, Social
Marwiji et al. (2024)	Indonesia	Secondary School	Qualitative (Literature Study)	Integration of green morals through Islamic Religious Education	Spiritual, Social

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Ruslan et al. (2024)	Indonesia	Secondary School	Qualitative (Case Study)	Integration of environmental awareness through curricular, co-curricular, and self-development activities.	Spiritual, Social, Cognitive
Syukri et al. (2024)	Indonesia	Islamic Boarding School	Qualitative (Case Study)	Integration of Islamic values and environmental ethics in pesantren education	Spiritual, Social
Masturin et al. (2022)	Indonesia	Higher Education	Qualitative thematic	Tawhid-based green learning in Islamic higher education	Spiritual, Social
Maslani (2023)	Indonesia	Islamic Boarding School	Qualitative (Ethnography)	Environmental conservation actions driven by Islamic boarding schools for the welfare of the community	Spiritual, Social
Mkumbachi et al. (2020)	Indonesia	Higher Education	Quantitative (Descriptive)	Environmental awareness and pro-environmental behaviour among university students	Cognitive, Social
Marshall (2025)	United Kingdom	Secondary / Religious Education	Qualitative (Conceptual Study)	Integration of sustainability into religious education	Cognitive, Spiritual
Sa'edi et al (2025)	Indonesia	Islamic Boarding School	Qualitative (Ethnography)	integration of ecological awareness in islamic religious education	Spiritual, Social
Subakir (2020)	Indonesia	General / Islamic Education Context	Qualitative (Library Research)	Integration of sustainability values in Islamic education	Spiritual, Social
Mohamed et al (2024)	Indonesia	Islamic Boarding School	Qualitative (Library research)	Integration of Islamic values and the STEAM approach for environmental education	Spiritual, Cognitive
Mardhiah et al (2021)	Indonesia	Higher Education	Qualitative (Case Study)	Integration of eco-theology through humanist-contextual Islamic Religious Education learning	Spiritual, Cognitive
Sulaeman et al (2025)	Indonesia	Higher Education	Qualitative (Classroom Action research)	Integration of fiqh al-bi'ah into Project-Based Learning	Spiritual, Cognitive

1. Forms and Strategies of Integrating Ecotheology into Islamic Religious Education

The integration of eco-theology into Islamic Religious Education (IRE) is a strategic effort to bridge Islamic theological values with ecological awareness in educational practice.

This integration does not occur in a single way but is realized through various forms and strategies across the areas of curriculum, learning processes, and assessment systems.

1) Integration of Ecotheology in the Curriculum

The integration of eco-theology into the Islamic Education curriculum is achieved through various complementary forms across the curricular, pedagogical, and cultural domains. At the curriculum level, the integration of ecotheology is evident in the preparation of syllabi and lesson plans that contain Islamic values with an environmental perspective, such as the concept of humans as caliphs, the principles of amanah (trust), tawazun (balance), and the prohibition of fasad fi al-ardh (corruption on earth).¹⁸ Several studies confirm that these values are not treated as additional material but are internalized into learning objectives, teaching materials, methods, and authentic assessment in Islamic Religious Education, so that religious learning functions as a vehicle for the formation of spiritual piety and ecological awareness.¹⁹ This integration is found at various levels of education, ranging from madrasah ibtidaiyyah (elementary Islamic school) and secondary school to higher education and Islamic boarding schools, with distinct contextual characteristics.

In terms of learning materials, several studies show that eco-theology integration is achieved by enriching Islamic Education themes related to ethics toward nature, environmental fiqh, and the interpretation of kauniyah verses.²⁰ Mahmud et al. explain that fiqh and akhlak materials are used to instill the values of trustworthiness, balance (mīzān), and moderation in the use of natural resources. Meanwhile, Sabtina and Mahariah reveal that the development of environment-based Islamic Education materials can broaden students' understanding of ecological issues while strengthening their moral and spiritual awareness. This shows that Islamic Education materials have strategic potential as a medium for internalizing eco-theological values, although their development still largely depends on teachers' creativity and the educational institution's context.²¹

¹⁸ Abdul Rohman et al., "Religious Education For The Environment: Integrating Eco-Theology In The Curriculum of Islamic Religious And Character Education To Enhance Environmental Education In Indonesia," *Nadwa: Jurnal Pendidikan Islam* 18, no. 2 (December 2024): 201–26, <https://doi.org/10.21580/nw.2024.18.2.21094>.

¹⁹ Norshariani Abd Rahman, Fatin Nur Marhamah Zabidi, and Muhammad Hilmi Jalil, "How To Integrate Environmental Education: Analysis of Teachers' Perspectives in Integrated Islamic Science Schools," *International Journal of Education* 15, no. 2 (2023): 1–14, <https://doi.org/10.5296/ije.v15i2.20611>.

²⁰ Maslani et al., "Ecopedagogy in Action: An Ethnographic Exploration of Environmental Preservation Strategies in Pesantren," *Jurnal Pendidikan Islam* 9, no. 2 (2023): 211–22, <https://doi.org/10.15575/jpi.v9i2.29347>.

²¹ Muh Hasan Marwiji, Joko Setiono, and Uus Ruswandi, "Integration Of Environmental Education (Green Moral) Through The Learning Of Islamic Religion Education In School," *JHSS (Journal of Humanities and Social Studies)* 8, no. 1 (2024): 209–15, <https://doi.org/10.33751/jhss.v8i1.9566>.

However, the study's results also reveal limitations in the formulation of learning outcomes that explicitly reflect the integration of eco-theology.²² Several studies note that although ecological values have been incorporated into the objectives and content of the curriculum, the learning outcome indicators that measure the spiritual, social, and cognitive development of students are still general and lack standardization.²³ This condition indicates the need to formulate more specific, operational, and standardized learning outcome indicators so that the integration of eco-theology into the Islamic Education curriculum can be clearly measured and contribute effectively to students' character development.²⁴

2) Integration of Ecotheology in the Learning Process

The integration of eco-theology into the Islamic Religious Education learning process is generally carried out through a contextual, environment-based approach that links religious material to the ecological realities surrounding students. Sa'edi et al. reported that environment-based Islamic Religious Education is conducted through the use of the school environment, cleanliness activities, and waste management to foster learning of Islamic values. A similar approach was also found by Mkumbachi, who showed that contextual learning can strengthen students' understanding of the relationship between Islamic teachings and ecological responsibility. This indicates that the contextual approach is the dominant strategy for actualising ecotheological values in Islamic Religious Education.²⁵

In addition to the contextual approach, reflective and problem-based learning are effective pedagogical strategies for integrating eco-theology into Islamic Religious Education. Masykuroh et al. found that the application of discovery learning and problem-based learning encourages students to reflect on environmental issues from an Islamic perspective, while also developing critical thinking skills.²⁶ Meanwhile, Fauziah et al. emphasised that ecological issue-based reflective learning enables students to relate normative Islamic teachings to real

²² Ruslan et al., "Environmental Care: The Strengthening Character Education Through Islamic Religious Education (Ire) Development," *Penamas* 37, no. 1 (2024): 116–30, <https://doi.org/10.31330/penamas.v37i1.791>.

²³ Rohman et al., "Religious Education For The Environment: Integrating Eco-Theology In The Curriculum of Islamic Religious And Character Education To Enhance Environmental Education In Indonesia"; Wakhidah and Erman, "Examining Environmental Education Content on Indonesian Islamic Religious Curriculum and Its Implementation in Life."

²⁴ Sheik Mohamed et al., "Transformation of Environmental Education in Pesantren: Integration of Islamic Values and STEAM Approach," *FIKROTUNA: Jurnal Pendidikan Dan Manajemen Islam* 14, no. 2 (2024): 254–68, <https://doi.org/10.32806/jf.v14i2.684>.

²⁵ Ramadhani Lausi Mkumbachi, I Komang Astina, and Budi Handoyo, "Environmental Awareness and Pro-Environmental Behavior: A Case of University Students in Malang City," *Jurnal Pendidikan Geografi: Kajian, Teori, Dan Praktek Dalam Bidang Pendidikan Dan Ilmu Geografi* 25, no. 2 (2020): 161–69, <https://doi.org/10.17977/um017v25i22020p161>.

²⁶ Khusniyati Masyukroh et al., "Teaching Environmental Literacy in Early Childhood Education to Improve the Character of Environmental Care," *Educational Administration: Theory and Practice* 30, no. 1 (2023): 84–99, <https://doi.org/10.52152/kuvey.v30i1.706>.

environmental problems, so that Islamic Religious Education does not stop at the cognitive aspect alone. Thus, this learning strengthens the transformation of Islamic Religious Education from merely conveying normative teachings to a contextual, reflective, and responsive educational process for contemporary environmental challenges.²⁷

However, the study's results also reveal that the integration of eco-theology strategies into the learning process remains limited. Several studies note that integration often depends on teacher initiative and is not yet supported by systematic pedagogical guidelines. As a result, eco-theology-based Islamic Religious Education has not been consistently implemented in various educational contexts.²⁸ Thus, although the IRE learning process has demonstrated strategic innovation in integrating eco-theology, it is necessary to strengthen pedagogical design and institutional support to ensure this integration is sustainable and has an optimal impact on students' character development.²⁹

3) Integration of Ecotheology in Learning Assessment

The integration of eco-theology into Islamic Religious Education assessment is beginning to shift toward using ecological attitudes and character assessments alongside conventional cognitive assessments. Authentic assessment through observation of attitudes, reflective journals, and assessment of environmentally friendly behaviour is used to determine the extent to which eco-theological values are internalised by students. The study by Supriyandi et al. indicates that embedding ecological values through school culture and project-based learning contributes to tangible behavioural changes, including improved waste management and energy conservation. In practice, IRE teachers apply interconnected strategies to strengthen religious and disciplinary character, such as structured worship activities, educational rules and sanctions, additional practical assignments, intensive mentoring in dormitory settings, exemplary teacher modelling (*uswatun hasanah*), and the use of learning media and technology. Disciplinary character is further reinforced by consistent enforcement of rules, reward-and-sanction systems, supervision and guidance, and collaboration with parents through structured parenting programs. Thus, integrating ecotheology into Islamic Religious Education

²⁷ R. Siti Pupu Fauziah et al., "Promoting Islamic Value for Green Skill Development in Islamic Vocational High School," *Jurnal Pendidikan Islam* 10, no. 1 (June 2024): 53–62, <https://doi.org/10.15575/jpi.v10i1.35383>.

²⁸ Listiyani Siti Romlah et al., "Environmental-Based Learning Management in Islamic Education Institutions," ed. A. Saregar, R. Umam, and A. Rahmat, *E3S Web of Conferences* 482 (January 2024): 04019, <https://doi.org/10.1051/e3sconf/202448204019>.

²⁹ Maslani, "Eco-Theology: Islamic Ethics and Environmental Transformation in Islamic Boarding Schools," *Edukasi Islami: Jurnal Pendidikan Islam* 12, no. 4 (2023): 1001–18, <https://doi.org/10.30868/ei.v12i04.5132>.

assessment not only broadens the scope of learning evaluation but also strengthens the transformation of religious values into concrete ecological behaviour in students' daily lives.³⁰

In addition to attitude assessment, environmentally based projects and authentic practices are strategic evaluation instruments in eco-theological Islamic Education, as they can integrate knowledge, skills, and character building.³¹ Research by Sulaeman et al. shows that IRE learning based on a humanistic and contextual approach through real activities, such as tree planting, implementing the reduce, reuse, recycle (3R) program, managing the school environment, and the fiqh al-bi'ah project, not only improves students' cognitive understanding but also strengthens the internalization of spiritual and social values through direct involvement in ecological actions.³² These findings align with the study by Mardiah et al., which confirms that developing teaching materials and assessment instruments aligned with a humanistic-contextual approach can more effectively and sustainably enhance students' environmental awareness.³³ Meanwhile, Subakir emphasizes that environmental project-based assessment serves not only as an academic evaluation tool but also as a means of spiritual and social character building, as real experiences in nature conservation foster ethical awareness, responsibility, and empathy, thereby embodying religious values. Thus, project-based assessment has great potential to simultaneously integrate cognitive, affective, and psychomotor dimensions, thereby making Islamic Religious Education learning more contextual, meaningful, and oriented towards holistic character building.³⁴

However, the study's results also revealed several limitations in the implementation of eco-theological assessment. Several studies have noted that environment-based assessment has not been systematically integrated into the Islamic Religious Education evaluation system and remains incidental.³⁵ Time constraints, teachers' competence in developing character

³⁰ Reno Supriyandi, Pasma Chandra, and Nelly Marhayati, "Teachers' Strategies in Instilling Religious and Disciplinary Character Values," *Jurnal Pendidikan Islam* 15, no. 2 (2025): 196–209, <https://doi.org/10.38073/jpi.v15i2.3379>.

³¹ Daniel Olsson, N. Gericke, and J. Boeve-de Pauw, "The Effectiveness of Education for Sustainable Development Revisited – a Longitudinal Study on Secondary Students' Action Competence for Sustainability," *Environmental Education Research* 28, no. 3 (March 2022): 405–29, <https://doi.org/10.1080/13504622.2022.2033170>.

³² Sulaeman, Ahmad, and Irmayanti Ridwan, "Integrating Fiqh Al-Bi'ah into Project-Based Learning to Enhance Environmental Character in Islamic Higher Education," *Tafkir: Interdisciplinary Journal of Islamic Education* 6, no. 4 (2025): 1009–25, <https://doi.org/10.31538/tijie.v6i4.2238>.

³³ I Mardiah et al., "Developing Environmental Care Attitudes among College Students through Islamic Education (IRE) Learning with a Humanist-Contextual Approach," *IOP Conference Series: Earth and Environmental Science* 743, no. 1 (2021): 012004, <https://doi.org/10.1088/1755-1315/743/1/012004>.

³⁴ Ahmad Subakir, "Integrating Islamic Education Based Value: Response to Global Challenges and Socio-Environment," *IOP Conference Series: Earth and Environmental Science* 469, no. 1 (April 2020): 012106, <https://doi.org/10.1088/1755-1315/469/1/012106>.

³⁵ Asmawati Muhamad et al., "Instilling Islamic Values of Environmental Sustainability Through Experiential Learning: A Case Study of Revealed Knowledge and Natural Phenomena's Students," *Asia Pacific*

assessment instruments, and the lack of standardised eco-theology evaluation guidelines are the main challenges. Therefore, it is necessary to strengthen policies, improve teacher capacity, and develop structured, standardised eco-theology assessment guidelines to ensure consistent, sustainable implementation of environment-based Islamic Education assessments.³⁶

4) Pedagogical Approaches in the Internalisation of Ecological Values

The pedagogical approach to internalising Islamic theology-based ecological values in Islamic Religious Education (IRE) generally emphasises the connection between Islamic theological teachings and students' ecological reality. Several studies show that IRE teachers adopt a contextual-theological approach by linking the concepts of tauhid, khalifah fil ardh, and amanah to real-world environmental issues. Wakhidah, Erman, and Rohman et al. emphasise that this approach enables students to understand Islamic teachings not only as normative doctrines but also as an ethical framework that responsibly regulates human relations with nature.

In addition, a reflective pedagogical approach grounded in religious values is an important strategy for internalising eco-theology, such as contemplating nature, discussing values, and writing religious reflections, which together foster students' spiritual awareness of the environment.³⁷ Romlah et al. found that a reflective approach in Islamic Religious Education encourages students to interpret environmental protection activities as part of worship and an expression of faith. This approach positions learning experiences as a means of transforming values, rather than merely mastering material.³⁸

Another dominant pedagogical approach is problem-based learning and experiential learning based on environmental issues. Studies in the literature show that students are invited to examine environmental issues around them—such as waste management, pollution, and ecosystem damage—through the perspective of Islamic teachings. Husin et al. emphasise that the problem-based learning approach not only improves students' conceptual understanding of ecological issues but also develops critical thinking skills and social responsibility grounded in Islamic values. This is reinforced by research by Nagiya and Zebua, which shows that eco-pedagogy grounded in eco-theology effectively shapes students' spiritual, social, and cognitive

Journal of Educators and Education 39, no. 2 (December 2024): 219–48, <https://doi.org/10.21315/apjee2024.39.2.12>.

³⁶ Koleayo Omoyajowo et al., “Exploring the Interplay of Environmental Conservation within Spirituality and Multicultural Perspective: Insights from a Cross-Sectional Study,” *Environment, Development and Sustainability* 26, no. 7 (May 2023): 16957–85, <https://doi.org/10.1007/s10668-023-03319-5>.

³⁷ Stefan Altmeyer, “Religious Education for Ecological Sustainability: An Initial Reality Check Using the Example of Everyday Decision-Making,” *Journal of Religious Education* 69, no. 1 (March 2021): 57–74, <https://doi.org/10.1007/s40839-020-00131-5>.

³⁸ Romlah et al., “Environmental-Based Learning Management in Islamic Education Institutions.”

development through integrated programs such as outdoor learning (field trips), environmental awareness practices, waste management initiatives, and green school policies. These practices demonstrate that the internalisation of ecotheology becomes more effective when pedagogical approaches combine theological reflection with experiential ecological engagement, allowing students to directly experience the connection between Islamic teachings and socio-ecological responsibility.³⁹

2. The Impact of Ecotheology Integration on Student Character

The integration of eco-theology into Islamic Religious Education not only enriches teaching materials but also serves as a pedagogical approach oriented towards the holistic character building of students. Based on the synthesis of research findings in this systematic study, integrating theological values with environmental issues significantly impacts students' spiritual, social, and cognitive development.

1) Impact on Spiritual Character

The integration of eco-theology has been shown to strengthen students' awareness of God by presenting a relational understanding of God, humans, and nature. This awareness arises when the doctrine of tawhid is understood not only as a doctrine of faith but also as an ethical foundation for treating the environment. Students come to view nature as a manifestation of God's power and as sacred, so that preserving it is understood as a logical consequence of faith. Kalaycı Alas and Korutürk show that values-based education integrated with ecological issues increases students' moral and spiritual awareness, with concern for nature understood as a manifestation of faith. This ecological awareness of God indicates a shift from symbolic to reflective and contextual religiosity.⁴⁰

This awareness of God deepened as it became clear that protecting the environment is an integral part of religious obedience. A study by Aryanto et al. confirms that the internalization of eco-theological values through habituation in madrasas builds a theological awareness that caring for nature is a form of practicing Islamic teachings. This understanding strengthens students' affective-spiritual dimension, as ecological actions are grounded in theological

³⁹ Nagiya and Ali Marzuki Zebua, "Eco-Pedagogic Based on Eco-Theology: Strategies for Building Students' Spiritual, Social, and Cognitive Character," *Jurnal Cendekia Media Komunikasi Penelitian Dan Pengembangan Pendidikan Islam* 17, no. 2 (2025): 419–33, <https://doi.org/10.37850/cendekia.v17i02.1091>.

⁴⁰ Kalaycı Alas and Korutürk, "Exploring the Impact of Values Education on Sustainable Environmental Awareness and Behavior Among Eighth-Grade Students."

awareness rather than merely in compliance with school rules. Thus, the integration of eco-theology helps shape a spirituality oriented towards concrete action.⁴¹

In addition, integrating eco-theology also encourages students to recognize that ecological responsibility is a form of worship. Begum et al. found that Islamic religiosity acts as a moderator, strengthening the influence of environmental moral education on pro-environmental behavior. The awareness that protecting the environment is a religious mandate fosters intrinsic motivation that is relatively stable compared to external motivation. The spiritual character that is formed is reflected not only in increased religious attitudes but also in the consistency of students' behaviour in their daily lives. This shows that integrating eco-theology has strategic potential for building a spirituality applicable and relevant to contemporary ecological challenges.⁴²

2) Impact on Social Character

From a social perspective, integrating eco-theology into Islamic Religious Education significantly increases students' social awareness and ecological solidarity. A study by Taufikin shows that the internalisation of eco-theological values through school culture encourages collective behavioural changes among students, such as cooperation in waste management programs, energy conservation, and other environmentally friendly activities.⁴³ Collaborative learning and ecological activities foster an understanding that environmental damage has a broad impact on social life. Students are encouraged to care not only for nature but also for their fellow human beings affected by the ecological crisis. This awareness shapes ecological solidarity, an attitude of mutual care and responsibility for maintaining environmental sustainability together.⁴⁴

The integration of Islamic values into environmental education also helps shape environmental ethics, which influence students' social behavior. These ethics are reflected in attitudes of discipline, responsibility, and moderation in the use of natural resources. Syukri et al. found that integrating Islamic values and environmental ethics in Islamic boarding schools

⁴¹ Teguh Aryanto et al., "Integrating Ecotheology and Participatory Learning to Foster Students' Ecological Awareness," *J-PAI: Jurnal Pendidikan Agama Islam* 12, no. 1 (2025): 115–24, <https://doi.org/10.18860/jpai.v12i1.38129>.

⁴² Imran Hayat et al., "The Role of Islamic Environmental Ethics in the Alleviation of Climate Challenges and the Preservation of Ecosystem," *Russian Law Journal* 11, no. 11 (2023): 395–404, <https://doi.org/10.52783/rj.v11i11s.1967>.

⁴³ Taufikin, "Integrating Eco-Theology In Islamic Education: A Case Study On Fostering Ecological Awareness Through Religious Pedagogy," *El-Tarbawi* 18, no. 1 (2025): 1–37, <https://doi.org/10.20885/tarbawi.vol18.iss1.art1>.

⁴⁴ Masturin, Mhd. Rasid Ritonga, and Siti Amaroh, "Tawhid-Based Green Learning in Islamic Higher Education: An Insan Kamil Character Building," *QIJIS (Qudus International Journal of Islamic Studies)* 10, no. 1 (2022): 215–52, <https://doi.org/10.21043/qijis.v10i1.14124>.

shapes students' collective awareness of their social and moral responsibility to protect the environment. Values such as justice, moderation (*wasatiyyah*), and trustworthiness taught in Islamic Religious Education are put into practice through ecological practices at school. Thus, students' social character develops not only through interpersonal care but also through ethical relationships with the environment.⁴⁵

Furthermore, integrating eco-theology encourages the development of students' social collaboration skills through environment-based activities. Ecological programs that involve group work strengthen social skills such as communication, cooperation, and leadership. Sa'edi et al. show that ecology-based programs in Islamic boarding schools—such as waste management and reforestation—not only increase environmental awareness but also strengthen cooperation between students, teachers, and educational institution administrators. This confirms that ecotheology in Islamic Religious Education helps shape students' social character to be caring, collaborative, and oriented toward the common good. The social character that emerges is participatory and transformative, as students are not only objects of education but also active subjects in environmental conservation efforts.⁴⁶

3) Impact on Cognitive Characteristics

The integration of eco-theology positively impacts students' cognitive development, particularly their conceptual understanding of environmental issues. Husin et al. emphasize that education grounded in ecological values not only expands students' knowledge of the environment but also enriches their framework for thinking about the interrelationships among religion, humans, and nature. This integration provides students with the opportunity to relate Islamic concepts to ecological phenomena in a more systematic manner. Ecological learning helps students understand that environmental issues are not merely scientific problems, but also ethical and theological ones. This conceptual understanding enriches students' perspectives in viewing the multidimensional complexity of environmental issues.⁴⁷

In addition to enhancing conceptual understanding, integrating eco-theology into Islamic Religious Education fosters students' critical and reflective engagement with ecological issues. Environmental problem-based learning grounded in Islamic theological values has been shown

⁴⁵ Syukri et al., "Integration of Islamic Values with Environmental Ethics in Pesantren Education: A Case Study at Darularafah Raya Pesantren," *Jurnal Pendidikan Islam* 13, no. 1 (2024): 1–12, <https://doi.org/10.14421/jpi.2024.131.1-12>.

⁴⁶ Moh Sa'edi, Moh Dannur, and Ach Sayyi, "Integrating Ecological Awareness Through Islamic Religious Education: A Case Study At An-Nidhamiyah Islamic Boarding School, Pamekasan," *Fikroh: Jurnal Pemikiran Dan Pendidikan Islam* 18, no. 2 (2025): 172–87, <https://doi.org/https://doi.org/10.37812/fikroh.v18i2.1804>.

⁴⁷ Labeeb Bsoul et al., "Islam's Perspective on Environmental Sustainability: A Conceptual Analysis," *Social Sciences* 11, no. 6 (2022): 228, <https://doi.org/10.3390/socsci11060228>.

to strengthen students' analytical skills in identifying the causes and consequences of environmental degradation and in formulating ethically grounded solutions. Through this approach, learners are encouraged not only to examine ecological problems analytically but also to interpret them within the moral framework of Islamic teachings. Religious education, more broadly, also holds significant potential for cultivating ethical reasoning and critical reflection on global challenges, including the environmental crisis. Such reflective processes extend beyond cognitive acquisition toward the development of responsible attitudes and informed decision-making. Consequently, the cognitive character shaped through eco-theological integration is reflective, ethically grounded, and oriented toward sustainability.⁴⁸

D. Conclusion

This study shows that integrating eco-theology into Islamic Religious Education plays a strategic role as a pedagogical framework that bridges Islamic theological teachings with the realities of the contemporary ecological crisis. Various studies show that eco-theology is not only present as an enrichment of conceptual discourse but is also implemented through value-oriented curricula, learning processes, and evaluations. This integration contributes to students' holistic character development, particularly by strengthening spiritual awareness rooted in ecological monotheism, developing socio-ecological awareness and solidarity, and improving critical and reflective thinking skills regarding environmental issues. Thus, Islamic Religious Education has the potential to shift from normative, doctrinal learning toward contextual, reflective, and relevant educational practices that address sustainability challenges.

However, this study also confirms the existence of structural challenges to strengthening eco-theological integration, particularly the lack of standardization of learning outcome indicators and ecological character assessment instruments in Islamic Religious Education. Dependence on individual educators' initiatives and the limitations of systematic pedagogical guidelines lead to inconsistent implementation across educational contexts. Therefore, there is a need to develop a more structured, context-specific, and sustainable pedagogical and evaluative framework to ensure the effective and measurable integration of ecotheology. This effort is expected not only to strengthen the role of Islamic Religious Education in shaping students' character but also to affirm its contribution to responding to the ecological crisis as part of Muslims' theological and social responsibility.

⁴⁸ Heather Marshall, "Integrating Sustainability into Religious Education," *Journal of Beliefs & Values* 15, no. 3 (2025): 267–80, <https://doi.org/10.1080/13617672.2025.2504983>.

Practically, this study implies the need for clearer eco-theological competencies in curriculum design, measurable performance indicators, and authentic assessment tools such as ecological project portfolios, reflective journals, and behavioural observation rubrics, supported by teacher professional development. For future research, more robust quantitative and mixed-methods studies are necessary to empirically measure the impact of eco-theology integration and to develop reliable, generalisable instruments to assess its long-term effects on students' spiritual, social, and cognitive character development.

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