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The Anthropocene Paradigm in Islamic Education in Indonesia: The Transformation of Thought and Practice in Responding to the Ecological Crisis

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Abstract

Global ecological crises and climate change have evolved into multidimensional problems that not only threaten environmental sustainability but also generate social, economic, and humanitarian crises. In this context, the Anthropocene paradigm emerges as a conceptual framework that explains how human activities have become the dominant factor shaping changes in the Earth system. This study aims to analyze how the Anthropocene paradigm can reconstruct Islamic education through epistemic, curricular, pedagogical, and institutional

transformations in responding to the global ecological crisis. This study employed a qualitative approach based on library research using a conceptual paper model. Data were obtained through the examination of various relevant academic literatures and analyzed using content analysis and critical-hermeneutic interpretation techniques. The findings indicate that Islamic education possesses a strong theological foundation through the concepts of *tawḥīd* (monotheism), *khilāfah* (stewardship), *mīzān* (balance), and *Maqāṣid al-Sharī'ah* (objectives of Islamic law) in fostering ecological awareness and sustainability responsibility. However, the integration of environmental issues within Islamic education in Indonesia remains predominantly normative and moralistic and has not yet developed into "ecological systems thinking" and "sustainability literacy". This study emphasizes that the transformation of Islamic education in the Anthropocene era requires the reconstruction of an integrative, ecological, and transformative educational paradigm capable of developing a Muslim generation with planetary consciousness and socio-ecological responsibility toward the sustainability of the Earth.

Keywords: Anthropocene, Islamic Education, Ecological Awareness, Ecopedagogy, Environmental Sustainability

A. Introduction

The global ecological crisis has evolved into a multidimensional problem that extends beyond environmental degradation and involves epistemological, ethical, and civilizational crises of modern humanity. Climate change, biodiversity loss, natural resource exploitation, and ecological inequality indicate that the relationship between humans and nature in the modern era has been built on an anthropocentric paradigm that positions nature merely as an economic object.[1]

In this context, scholars introduced the concept of the Anthropocene to describe a new geological epoch in which human

[1] Julija Korostenskiene, "Toward The Humanistic Paradigm In Education: A Case Study," *Journal of Education, Society & Multiculturalism* 3, no. 2 (December 1, 2022): 215–35, https://doi.org/10.2478/jesm-2022-0028.

activities have become the dominant force, significantly transforming the Earth system.[2] The Anthropocene paradigm not only highlights ecological destruction but also demands a transformation in how humans understand the relationships among knowledge, technology, ethics, and the sustainability of life.

Within contemporary educational discourse, the Anthropocene paradigm encourages a fundamental shift in educational orientation, which has long been centered on economic growth, competition, and instrumental rationality. Education can no longer be understood merely as a process of knowledge transmission; rather, it must be directed toward fostering ecological awareness, ethical responsibility, and adaptive capacities in responding to planetary crises.[3]

UNESCO (2020) emphasizes that Education for Sustainable Development (ESD) constitutes a strategic instrument for building societies capable of responding to climate change and global ecological challenges in a transformative manner.[4] In this context, education functions not merely as a process of knowledge transmission but also as a medium for fostering ecological awareness, social responsibility, and collective behavioral change toward the environment.

In Islamic education, ecological issues have a strong theological foundation. The concepts of *tawḥīd* (monotheism), *khilāfah* (stewardship), *mīzān* (balance), and the prohibition of *isrāf* (wasteful) indicate that Islam views humans as an integral part of the cosmic order whose balance must be preserved.[5] The

[2] W Steffen, P. J Crutzen, and J. R McNeill, *The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?* (London: Routledge, 2019). 18.

[3] Peterson K. Ozili, "Financial Inclusion Research around the World: A Review," *Forum for Social Economics* 50, no. 4 (October 2, 2021): 457–79, https://doi.org/10.1080/07360932.2020.1715238.

[4] UNESCO, *Education for Sustainable Development Goals: Learning Objectives* (UNESCO, 2020), https://doi.org/10.54675/CGBA9153.

[5] Achmad Faisol Haq, "Pemikiran Teologi Teosentris Menuju Antroposentris Hasan Hanafi," *Jurnal Ilmiah Spiritualis: Jurnal Pemikiran Islam Dan Tasawuf* 6, no. 2 (December 29, 2020): 159–90, https://doi.org/10.53429/spiritualis.v6i2.132.

Qur'an explicitly prohibits destroying Earth, as stated in QS. al-Baqarah [2]: 11 and QS. al-A'rāf [7]: 56. This perspective demonstrates that the relationship between humans and nature in Islam is not exploitative, but rather ethical and spiritual in nature.[6]

Seyyed Hossein Nasr argues that the modern ecological crisis stems from a spiritual crisis in modern humanity, which has become detached from the sacred consciousness of nature.[7] Therefore, Islamic education possesses significant epistemological and normative potential to construct an ecological paradigm grounded in transcendental values. However, such potential has not yet been fully translated into educational practices that are contextualized to the challenges of the Anthropocene.

Nevertheless, studies concerning the integration of ecological paradigms within Islamic education remain relatively limited. Most studies on Islamic education still focus on moral, ritual, and individual character formation, while ecological sustainability has not yet become a central epistemological framework in curriculum and pedagogical development. Research on sustainability-based education generally evolves within the tradition of modern environmental education and has not been systematically connected to the Islamic theological paradigm.[8]

Several previous studies have demonstrated growing attention to the relationship between Islam and the environment, although they have not specifically employed the Anthropocene paradigm within Islamic education. Islamic education should

[6] Hesty Widiastuty and Khairil Anwar, "Ekoteologi Islam: Prinsip Konservasi Lingkungan Dalam Al-Qur'an Dan Hadits Serta Implikasi Kebijakannya," *Risâlah Jurnal Pendidikan Dan Studi Islam.* 11, no. 1 (2025): 465–80, https://doi.org/https://doi.org/10.31943/jurnal_risalah.v11i1.2149.

[7] Salamuddin Salamuddin, "God, Nature, and Human in The Thinking of Sayyed Husein Nasr," in *Ar-Raniry International Conference on Islamic Studies (ARICIS)*, 2016, https://doi.org/http://dx.doi.org/10.22373/aricis.v1i0.953.

[8] Mukhsin Mukhsin and Ilzam Hubby Dzikrillah Alfani, "Integrating Islamic Eco-Theology into Religious Education: A New Paradigm for Curriculum Development," *Indonesian Journal of Islamic Religious Education* 3, no. 2 (December 29, 2025): 183–96, https://doi.org/10.63243/mpr1js26.

integrate environmental ethics grounded in the *Maqāṣid al-Sharīʻah* (objectives of Islamic law) to foster a more comprehensive ecological awareness among students. However, the implementation of environmental education within *madrasah* (Islamic schools) curricula in several Muslim countries remains relatively limited due to the dominance of normative approaches in religious instruction. Consequently, ecological issues are often understood merely as matters of individual morality rather than as an integrative and systemic framework for sustainability-oriented education.[9]

Meanwhile, Faizah Q and Hamdi Rudji found that the concept of *khilāfah* (stewardship) has significant potential as a foundation for developing Islamic ecological pedagogy. However, its implementation remains sporadic and insufficiently systematic in educational practice.[10] Baso Syafaruddin likewise emphasizes the importance of transforming the Islamic religious education curriculum through an eco-theological approach in responding to the global climate crisis. In addition, Syahrizal et al. explain that the perspective of *Maqāṣid al-Sharīʻah* can serve as an ethical foundation for constructing Islamic education oriented toward environmental sustainability.[11]

These research gaps indicate that the discourse on Islamic education still requires a conceptual formulation capable of bridging Islamic theological values with contemporary ecological

[9] Hamdan Hamdan, "Islamic Education with an Ecological Perspective: Quranic Foundations, Environmental Ethics, and Pathways toward Sustainable Development," *Jurnal Pendidikan Islam* 16, no. 1 (March 31, 2026): 91–106, https://doi.org/10.38073/jpi.4545.Juliani et al., "Green Islamic School: Integrating Environmental Education in the Islamic Education Curriculum," *Cendekiawan : Jurnal Pendidikan Dan Studi Keislaman* 3, no. 3 (December 31, 2024): 565–74, https://doi.org/10.61253/cendekiawan.v3i3.270.v

[10] SY.Faizah Q and Hamdi Rudji, "The Concept of Human Beings in Islamic Education: The Human Nature as Khalifah on Earth According to The Educational Concept of Lukman Hakim," *Irfana: Journal of Religious Studies* 1, no. 7 (2025): 244–51, https://doi.org/https://doi.org/10.4321/jrs.2022.1101.

[11] Hasan Syahrizal, Fajrina Dhia Salsabila, and Ainul Mardhiah, "The Values of Maqāṣid Al-Sharīʻah in the Implementation of Inclusive Education," *DZURRIYAT : Jurnal Pendidikan Islam* 4, no. 1 (2026): 1–7, https://doi.org/https://doi.org/10.61104/dz.v4i1.4702.

challenges. Furthermore, only a limited number of studies have explored how the Anthropocene paradigm can encourage the transformation of thought, curriculum, and pedagogical practices within Islamic education.

Based on these issues, this study proposes three main research questions. First, how are major theological concepts in Islam, such as *tawḥīd* (monotheism), *khilāfah* (stewardship), *mīzān* (balance), and *Maqāṣid al-Sharīʻah* (objectives of Islamic law), discussed in the literature on Islamic education in relation to ecological issues? Second, what conceptual and pedagogical transformations are required by the Anthropocene paradigm within Islamic education? Third, how can the Anthropocene paradigm serve as a foundation for reconstructing the thought and practices of Islamic education oriented toward ecological sustainability?

Based on these questions, this study aims to analyze the Anthropocene paradigm in Islamic education as a framework for transforming educational thought and pedagogical practices in responding to the global ecological crisis. This study is expected to provide a theoretical contribution to the development of contemporary Islamic education studies, particularly in constructing an educational paradigm that integratively connects Islamic spirituality with ecological ethics.

B. Method

This study employs a qualitative approach grounded in a conceptual paper model to reconstruct the paradigm of Islamic education in response to the ecological crisis in the Anthropocene era. According to Jaakkola, conceptual articles function to develop theoretical syntheses by critically reinterpreting concepts in the academic literature.[12] In this study, the conceptual approach is used to analyze the epistemic, curricular, pedagogical, and

[12] Elina Jaakkola, "Designing Conceptual Articles: Four Approaches," *AMS Review* 10, no. 1 (2020): 18–26.

institutional dimensions of Islamic education to make them more integrative toward issues of ecological sustainability. Such approach is important because the transformation of Islamic education in the Anthropocene requires a more contextually grounded and transformative reconstruction of educational paradigms.

The qualitative approach was employed because it enables researchers to understand the transformation of Islamic education and the ecological crisis in an interpretative and contextual manner. Creswell and Poth explain that qualitative research is oriented toward exploring meanings, interpretations, and social constructions of phenomena that involve complex philosophical, cultural, and normative dimensions.[13] In this study, the Anthropocene paradigm is understood not merely as an ecological concept but also as a critique of the modern paradigm that separates humanity from spirituality and environmental sustainability.

The research data were obtained through a review of relevant academic literature. The selection of literature was conducted purposively based on its substantive relevance to study's focus. The inclusion criteria comprised academic publications discussing Islamic education, Islamic environmental ethics, sustainability paradigms, Islamic eco-theology, and the transformation of ecological pedagogy.

Data collection was conducted through documentation and literature reviews of various academic sources on the Anthropocene paradigm and Islamic education. The collected data were analyzed using "content analysis" and critical-hermeneutic interpretation to identify meanings, patterns, and conceptual tendencies within the reviewed literature. According to Krippendorff, "content analysis" is used to systematically and

[13] J. W. Creswell and C. N Poth, *Qualitative Inquiry and Research Design: Choosing among Five Approaches* (London: Sage Publications, 2016). 46.

objectively identify themes and constructions of meaning within texts.[14]

Furthermore, a critical-hermeneutic approach was employed to interpret the relationship between Islamic theological concepts and contemporary ecological paradigms. According to Kincheloe and McLaren, a critical approach in educational research aims not only to understand social reality but also to uncover the structures of knowledge and power relations that shape educational practices.[15] In this study, the critical-hermeneutic approach was used to analyze how Islamic education has long been dominated by normative paradigms and how these paradigms can be transformed toward sustainability-based ecological education.

The argumentation of this study was constructed through logical coherence among concepts, critical dialogue with previous theories, and reflective interpretation of contemporary Islamic educational conditions. Through this approach, the study seeks to formulate a conceptual framework that can broaden the discourse on ecological Islamic education and contribute theoretically to the development of Islamic educational paradigms in the Anthropocene era.

C. FINDINGS

1. Current State of Ecological Content in Islamic Education

In recent years, issues related to the ecological crisis and environmental sustainability have increasingly drawn attention in the development of Islamic education in Indonesia, amid the growing impacts of climate change,

[14] K Krippendorff, *Content Analysis: An Introduction to Its Methodology* (London: Sage Publications, 2018). 87.

[15] Joe L. Kincheloe and Peter McLaren, "Rethinking Critical Theory and Qualitative Research," *BRILL*, 2021, 285–326.

natural resource exploitation, and global ecological inequality. According to Crutzen and Stoermer, the Anthropocene paradigm demonstrates that human activities have become the dominant factor affecting the Earth system and generating environmental crises on a massive scale.[16] This perspective emphasizes that ecological problems can no longer be understood merely as technical environmental issues, but rather as a civilizational crisis closely related to the way humans construct their relationship with nature

From the perspective of Islamic education, the Anthropocene paradigm is highly relevant because it is closely related to the concept of humans as *khalīfah* (stewardship) on Earth. According to Bisri et al., the relationship between humans and nature in Islam is spiritual and integrative, since nature is regarded as a manifestation of *āyāt Allāh* (divine signs). The concepts of *tawḥīd* (monotheism), *khilāfah* (stewardship), *mīzān* (balance) and the prohibition of *isrāf* (wastefulness) indicate that Islam possesses a strong ethical foundation for fostering ecological awareness and sustainability responsibility.[17] Therefore, Islamic education is not merely oriented toward the formation of spiritual piety, but also toward the development of collective ecological awareness in responding to the Anthropocene crisis.

Nevertheless, the findings of this study indicate that the integration of ecological awareness within Islamic education in Indonesia remains predominantly normative and symbolic. Environmental education in many Islamic educational institutions is generally manifested through moral appeals

[16] Paul J. Crutzen, *A Pioneer on Atmospheric Chemistry and Climate Change in the Anthropocene* (Cham, Swiss: Springer, 2020). 23

[17] Bisri et al., "Navigating Modern Challenges: The Practical Role of Triple-Relationship of Religious Moderation through an Islamic Perspective," *Journal of Islamic Thought and Civilization* 14, no. 2 (2024): 286–302, https://doi.org/https://doi.org/10.32350/jitc.142.17.

such as maintaining cleanliness, greening school environments, conserving energy, and prohibiting littering. However, such approaches have not yet developed into pedagogical frameworks capable of fostering "ecological systems thinking", namely the ability to understand the interconnections among climate change, environmental degradation, economic systems, social inequality, and religious responsibility in a comprehensive manner.[18] This condition indicates that Islamic education remains more focused on the formation of individual morality than on the development of structural and critical ecological awareness.

Hajar explains that the integration of environmental issues into Islamic education in Indonesia remains limited to strengthening ecological morality and has not yet led to the transformation of sustainability-based curricula and pedagogy.[19] Moreover, most Islamic educational institutions have not owned yet ecological curricular frameworks that integrate religious teachings with modern environmental science literacy. Consequently, environmental issues are still treated merely as supplementary elements in moral education rather than as epistemological paradigms that shape students' critical and systemic understanding of the relationships among humans, nature, and technology.[20]

This condition can be observed in the implementation of curricula within *madrasah* (Islamic schools), *pesantren* (Islamic boarding schools), and Islamic higher education

[18] Andreas Wieland et al., "Thinking Differently about Supply Chain Resilience: What We Can Learn from Social-Ecological Systems Thinking," *International Journal of Operations & Production Management* 43, no. 1 (January 31, 2023): 1–21, https://doi.org/10.1108/IJOPM-10-2022-0645.

[19] Andi Hajar, "Transforming Islamic Education for Environmental and Social Sustainability," *Sinergi International Journal of Islamic Studies* 2, no. 2 (May 31, 2024): 82–95, https://doi.org/10.61194/ijis.v2i2.601.

[20] Matthew T. Ballew et al., "Systems Thinking as a Pathway to Global Warming Beliefs and Attitudes through an Ecological Worldview," *Proceedings of the National Academy of Sciences* 116, no. 17 (April 23, 2019): 214–19, https://doi.org/10.1073/pnas.1819310116.

institutions, which remain largely oriented toward the transmission of normative religious knowledge. At the same time, environmental studies are generally limited to the *fiqh* (jurisprudence) of cleanliness, environmental ethics, or recommendations for simple living without being systematically integrated with global sustainability issues and the challenges of the Anthropocene. As a result, students have not yet developed the analytical capacity to understand the structural roots of the modern ecological crisis driven by consumerism, global capitalism, industrialization, and excessive exploitation of natural resources. Consequently, Islamic education still faces epistemological challenges in integrating Islamic spirituality with scientific approaches and ecological sustainability literacy.[21]

Conversely, positive developments have begun to emerge through various ecological transformation practices within Islamic educational institutions. Several *pesantren* (Islamic boarding schools) and Islamic higher education institutions have begun developing sustainability-based programs, such as "*eco-pesantren*", water conservation, organic farming, community-based waste management, and plastic reduction initiatives. For instance, the "*eco-pesantren*" program is not merely focused on environmental cleanliness, but also seeks to cultivate a sustainable way of life by integrating religious values, environmental management, and students' social participation.[22]

According to Herdiansyah et al., integrating Islamic values with environmental ethics in *pesantren* education can foster students' ecological awareness through practices such

[21] David R. Cole and Karen Malone, "Environmental Education and Philosophy in the Anthropocene," *Australian Journal of Environmental Education* 35, no. 3 (November 24, 2019): 157–62, https://doi.org/10.1017/aee.2020.5.

[22] Rihlah Nur Aulia et al., "Eco-Pesantren Modeling for Environmentally Friendly Behavior: New Lessons from Indonesia," *International Journal of Evaluation and Research in Education (IJERE)* 13, no. 1 (February 1, 2024): 223, https://doi.org/10.11591/ijere.v13i1.25930.

as greening programs, waste management, and the cultivation of simple living.[23] These findings are consistent with the growing development of the "green campus" concept in several *Perguruan Tinggi Keagamaan Islam Negeri* (State Islamic Higher Education Institutions/PTKIN), which are increasingly oriented toward establishing sustainability-based academic cultures.[24]

Nevertheless, these ecological initiatives still face structural and epistemological limitations. Many environmental programs in Islamic educational institutions remain sporadic, project-based, and have not yet become integral components of the broader vision of Islamic education. In addition, educators' limited ecological literacy, the dominance of textual-normative approaches, and the lack of integration between religious and environmental sciences continue to hinder the development of sustainability-oriented Islamic education.

In this context, Islamic education needs to move from a normative to a transformative approach, positioning the ecological crisis as an integral part of educational orientation. According to Ayu Setianingrum et al., Islamic-based education possesses significant potential to develop sustainability awareness through the integration of religious teachings, ecological ethics, and contextual life practices.[25] Therefore, Islamic education in Indonesia has a strategic opportunity to

[23] Herdis Herdiansyah, Trisasono Jokopitoyo, and Ahmad Munir, "Environmental Awareness to Realizing Green Islamic Boarding School (Eco-Pesantren) In Indonesia," *IOP Conference Series: Earth and Environmental Science* 30 (February 5, 2016): 012017, https://doi.org/10.1088/1755-1315/30/1/012017.

[24] Zakhi Restu and Reflis Reflis, "Implementation of the Green Campus Concept in Indonesian PTKIN: A Systematic Literature Review Based on UI GreenMetric and Integration of Islamic Values," *Journal of Ecology Conservation and Environment* 1, no. 1 (2026): 9–16, https://ejournal.auliantech.org/index.php/leuweung/article/view/35.

[25] Diah Ayu Setianingrum, Setiyo, and Agus Dwiyanto, "Environmental Education through Islamic Lens: Values and Practices," ed. A. Saregar, R. Umam, and A. Rahmat, *E3S Web of Conferences* 482 (January 29, 2024): 04014, https://doi.org/10.1051/e3sconf/202448204014.

contribute to the global transformation toward a more ecological, just, and sustainable society through more integrative epistemological, curricular, and pedagogical reconstruction.

2. Gaps: Between Moral Exhortation and Systems Literacy

Normatively, Islamic education possesses a strong theological foundation for developing environmental ethics through the concepts of *tawḥīd* (monotheism), *khilāfah* (stewardship), *mīzān* (balance), and the prohibition of *fasād* (destruction) on Earth. These concepts demonstrate that Islam views humans as an integral part of the cosmic order who bear moral responsibility for maintaining ecological balance and preventing environmental destruction. According to Muthahhari, the relationship between humans and nature in Islam is spiritual and sacred because nature is understood as a manifestation of divine signs that must be preserved responsibly.[26]

Nevertheless, this study finds a fundamental gap between theological ethics and ecological systems literacy within contemporary Islamic educational practices. This gap is reflected in Islamic education's tendency to frame environmental issues solely as matters of individual morality rather than as structural and systemic concerns related to the interconnections among humans, technology, economics, politics, and the exploitation of global natural resources.

Environmental education within Islamic educational institutions is generally manifested through campaigns promoting cleanliness, school greening, waste reduction, and

[26] Hero Gefthi Firnando, "Murtadha Muthahhari Ecological Vision: Unveiling the Spiritual Foundation of Harmony Between Humans and Nature in Islamic Ecology," *HUMANIKA* 30, no. 2 (January 10, 2024): 198–207, https://doi.org/10.14710/humanika.v30i2.59354.

energy conservation. Although important, such approaches remain insufficient for developing "ecological systems thinking", namely the capacity to comprehensively understand the complex interconnections among climate change, social inequality, food crises, global capitalism, and ecological destruction. This condition indicates that Islamic education still operates within a moralistic paradigm that prioritizes individual behavior rather than fostering systemic and transformative ecological awareness.

This situation further demonstrates that Islamic education remains dominated by a normative-moralistic paradigm rather than a transformative-ecological one. Madrasa, pesantren, and Islamic school curricula generally remain focused on strengthening *aqīdah* (faith), *ibadah* (worship), *fiqh* (jurisprudence), and individual morality. At the same time, issues of ecological sustainability have not yet been positioned as integral components of contemporary Islamic knowledge construction. Environmental studies are likewise often limited to discussions of *fiqh* of cleanliness or environmental ethics, disconnected from the multidimensional challenges of the Anthropocene and the global ecological crisis.

Marwiji et al. explain that the integration of environmental issues within Islamic education in Indonesia remains limited to strengthening environmentally conscious character formation and has not yet led to the reconstruction of ecologically sustainable curricula.[27] Hasan likewise emphasizes that most Islamic educational institutions have not yet developed ecological curriculum models capable of systematically integrating Islamic values with modern

[27] Muh. Hasan Marwiji et al., "Integration Of Environmental Education (Green Moral) Through The Learning Of Islamic Religion Education In School," *Journal of Humanities and Social Studies* 8, no. 1 (2024): 209–15, https://doi.org/https://doi.org/10.33751/jhss.v8i1.9566.

environmental science literacy.[28] These findings indicate that ecological awareness in Islamic education is still predominantly understood as part of individual moral education rather than as an epistemological paradigm capable of shaping students' critical and systemic thinking toward contemporary environmental crises.

The gap between theological ethics and ecological literacy becomes increasingly evident in pedagogical practices within Islamic educational institutions, which remain dominated by textual approaches and normative memorization. Religious education is largely directed toward mastering doctrines and ritual practices rather than fostering reflective awareness of contemporary socio-ecological issues.[29] In the context of the Anthropocene, an educational paradigm that merely emphasizes the transmission of normative doctrines is no longer sufficient to address the complexity of the global ecological crisis.

In addition, this study's findings reveal the emergence of various efforts to integrate ecological values into Islamic educational practices through "*eco-pesantren*" and "green campus" initiatives, environmental conservation programs, and community-based waste management. These programs reflect a growing awareness within Islamic educational institutions of the need to connect religious values with concrete environmental sustainability practices. Nevertheless, most of these initiatives remain partial and have not yet evolved into institutional paradigms integrated within the broader educational system. Many ecological

[28] Hasan Asari et al., "Mapping the Modernization of Islamic Education: A Bibliometrics Analysis of Research Trends from 1965 to 2022," *International Journal of Changes in Education* 1, no. 1 (July 29, 2024): 45–63, https://doi.org/10.47852/bonviewIJCE42023100.

[29] Muhammad Akhir and Zainidah Siagian, "Sustainability Dan Manajemen Lingkungan Di Lembaga Pendidikan Islam," *EDU SOCIETY: JURNAL PENDIDIKAN, ILMU SOSIAL DAN PENGABDIAN KEPADA MASYARAKAT* 5, no. 1 (February 14, 2025): 267–77, https://doi.org/10.56832/edu.v5i1.781.

programs still depend on short-term projects, individual initiatives, or external support, resulting in limited sustainability and long-term effectiveness.

Furthermore, the limited integration of religious sciences with modern scientific knowledge has widened the gap between theological ethics and ecological literacy. The dualism of knowledge in Islamic education leads to environmental issues being understood primarily as matters of normative ethics rather than as components of scientific analyses of global socio-ecological systems. As a result, students may recognize the moral obligation to protect the environment, yet often lack the critical capacity to analyze the interconnections between ecological crises, industrialization, economic exploitation, consumerist culture, and global injustice.[30]

Therefore, the transformation of Islamic education in the Anthropocene era cannot be achieved merely by adding environmental topics to the curriculum, but requires a comprehensive shift in educational paradigms. Islamic education must move from a moralistic approach toward a transformative approach capable of fostering sustainability literacy, critical ecological awareness, and the ability to understand the complexity of global environmental crises. The findings of this study demonstrate that integrating Islamic theological values with interdisciplinary approaches and modern ecological literacy constitutes a strategic step toward developing an Islamic educational paradigm that is more responsive to the challenges of future sustainability.

[30] Nur Afif, "Inclusive Islamic Education in Indonesia: Challenges, Theological Foundations, and Institutional Reform," *AL-ISHLAH: Jurnal Pendidikan* 17, no. 3 (September 27, 2025): 478–89, https://doi.org/10.35445/alishlah.v17i3.7650.

3. Emerging Transformative Practices

The transformation of Islamic education in the Anthropocene era is underway through the emergence of various eco-pedagogical practices that integrate Islamic values with ecological awareness and environmental sustainability. According to Boca and Saraçlı, sustainability education is not only aimed at improving environmental knowledge but also at fostering critical awareness, social responsibility, and transformative capacities in responding to global crises.[31] In the context of Islamic education, eco-pedagogical practices represent a paradigm shift from normative, textual approaches toward more transformative, contextually grounded approaches to contemporary ecological challenges.

One prominent form of ecological transformation in Islamic education is the development of "*eco-pesantren*" programs across various regions in Indonesia. These programs integrate Islamic values with environmental conservation practices through waste management, greening initiatives, water conservation, organic farming, and the habituation of simple living within *pesantren* (Islamic boarding schools) communities.[32] "*Eco-pesantren*" functions not merely as an environmental program, but also as a community-based ecological education model that positions environmental care as part of everyday religious practice. Research conducted by Safei and Himayaturohmah demonstrates that integrating environmental ethics into

[31] Gratiela Dana Boca and Sinan Saraçlı, "Environmental Education and Student's Perception, for Sustainability," *Sustainability* 11, no. 6 (March 14, 2019): 1553, https://doi.org/10.3390/su11061553.

[32] Aulia et al., "Eco-Pesantren Modeling for Environmentally Friendly Behavior: New Lessons from Indonesia."

pesantren culture can shape students' ecological character through collective practices oriented toward sustainability.[33]

In this context, the transformation of *pesantren* reflects a shift in educational orientation from individual piety toward the formation of ecological piety (eco-piety). According to Brady, Islamic environmental ethics has significant potential to foster sustainability awareness by positioning humans as guardians of ecological balance rather than agents of environmental exploitation.[34]

A similar transformation has also developed within *Perguruan Tinggi Keagamaan Islam Negeri* (State Islamic Higher Education Institutions/PTKIN) through the implementation of the "green campus" concept. Several PTKINs have begun integrating sustainability principles into institutional governance, curricula, research, and academic culture through policies on plastic waste reduction, energy conservation, green space development, and the strengthening of Islam-based environmental research. The growing development of interdisciplinary studies on Islam and the environment further indicates efforts to connect Islamic scholarship with modern environmental science in a more integrative manner. [35]

Eco-pedagogical transformation practices are also reflected in the integration of *fiqh al-bī'ah* (environmental jurisprudence), into Islamic religious education.[36] In practice,

[33] Agus Ahmad Safei and Emma Himayaturohmah, "Development of Environmentally Friendly Culture in the Islamic Boarding School through Social Intervention Strategy," *Al-Hayat: Journal of Islamic Education* 7, no. 1 (June 17, 2023): 226, https://doi.org/10.35723/ajie.v7i1.323.

[34] Emily Brady, "John Muir's Environmental Aesthetics: Interweaving the Aesthetic, Religious, and Scientific," *The Journal of Aesthetics and Art Criticism* 76, no. 4 (September 2018): 463–72, https://doi.org/10.1111/jaac.12596.

[35] Theguh Saumantri and Hajam Hajam, "Urgensi Metodologi Studi Islam Interdisipliner Untuk Moderasi Islam," *An-Nawa : Jurnal Studi Islam* 5, no. 1 (June 26, 2023): 1–18, https://doi.org/10.37758/annawa.v4i1.579.

[36] Ahmad Mulia Panigoran Siregar, Egy Reyva Firgusan Siregar, and M. Aditya Prayoga, "Analisis Literatur Mengenai Integrasi Ekopedagogi Dalam Manajemen

fiqh materials no longer focus solely on ritual worship, but also address issues such as environmental pollution, resource exploitation, water crises, and the ethics of sustainable consumption. According to Hidayatulloh et al., Islamic-based education has considerable potential to foster ecological awareness when it integrates religious teachings with contextual sustainability practices.[37]

In addition, environmental project-based learning (eco-project learning) has been implemented in several *madrasah* and Islamic schools. This learning model positions students as active subjects in addressing environmental problems through practical activities such as waste management, tree planting, school gardening, water conservation, and plastic reduction campaigns. From a critical pedagogical perspective, such approach enables students to reflectively understand the interconnections among human behavior, environmental degradation, and socio-religious responsibility.[38]

On the other hand, the development of Islamic education grounded in *maqāṣid* (purposes) ecology has emerged as an alternative approach to responding to the Anthropocene crisis. According to Ali Makfud, the perspective of ecological *maqāṣid* broadens the orientation of Islamic education from merely fostering individual morality toward developing a more systemic and transgenerational sustainability awareness.[39] The findings of this study indicate

Pendidikan: Menuju Sekolah Yang Berkeadilan Sosial Dan Ramah Lingkungan," *Sustainability: Educational Innovation and Local Identity* 1, no. 1 (2025): 01–14, https://doi.org/https://doi.org/10.47766/sustainability.v1i1.1022.

[37] Taufik Hidayatulloh et al., "Eco-Theology in Islamic Thought: Religious Moderation and Organizational Roles in Mining Management in Indonesia," *Progresiva: Journal of Islamic Thought and Education* 13, no. 03 (December 8, 2024): 379–92, https://doi.org/10.22219/progresiva.v13i03.37102.

[38] Carmen Marta-Lazo, Divina Frau-Meigs, and Sara Osuna-Acedo, "Collaborative Lifelong Learning and Professional Transfer. Case Study: ECO European Project," *Interactive Learning Environments* 27, no. 1 (January 2, 2019): 33–45, https://doi.org/10.1080/10494820.2018.1451346.

[39] Ali Makfud, "Green Economy Dalam Perspektif Ekonomi Islam: Integrasi Maqāṣid Al-Shari'Ah Dan Etika Lingkungan," *Syar Ie Jurnal Pemikiran Ekonomi Islam* 9, no. 1 (February 21, 2026): 1–11, https://doi.org/10.51476/syarie.v9i1.881.

that the ecological *maqāṣid* approach possesses considerable potential in constructing an Islamic educational paradigm that is more integrative, ecological, and oriented toward planetary responsibility.

Although these transformative practices demonstrate positive developments, their implementation still faces various limitations. Many ecological initiatives within Islamic educational institutions remain local, sporadic, and dependent upon individual commitments or specific projects. Furthermore, not all Islamic educational institutions possess adequate curricular capacity, resources, and ecological literacy to develop eco-pedagogy systematically.

To clarify the direction of this transformation, this study develops a visual model of the eco-pedagogical transformation of Islamic education in the Anthropocene era, illustrating the paradigmatic shift from a normative-traditional approach toward an ecological, integrative, and transformative paradigm of Islamic education, as presented in Figure 1.

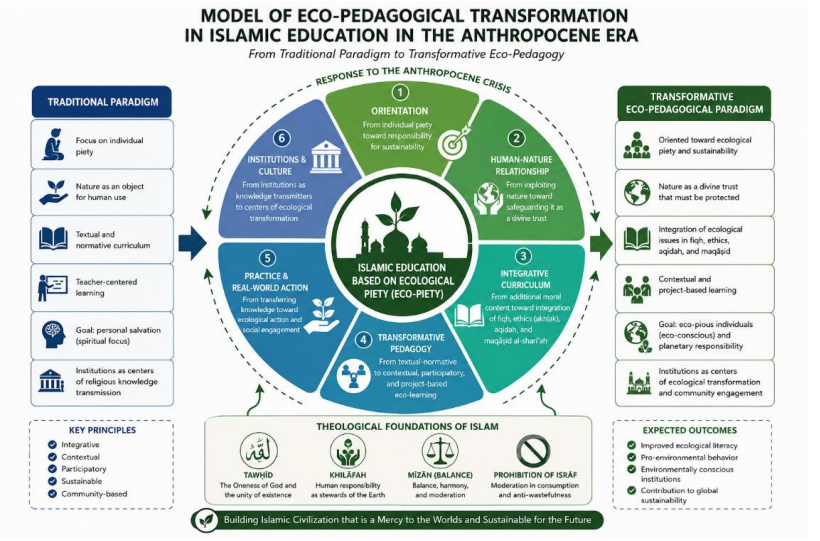


Figure 1. Model of Eco-Pedagogical Transformation in Islamic Education in the Anthropocene Era

D. DISCUSSION

1. The Four-Strand Transformation Agenda (Epistemic, Curricular, Pedagogical, Institutional)

The increasingly complex global ecological crisis demonstrates that environmental problems cannot be understood merely as technical issues but rather as multidimensional crises rooted in knowledge paradigms, educational systems, development orientations, and human relationships with nature. According to C. Stubbs and Hullinger, global sustainability challenges require educational transformation capable of fostering critical awareness, systems thinking, and collective responsibility toward the future of the planet.[40]

In this context, the Anthropocene paradigm demands a fundamental transformation of Islamic education so that it functions not merely as a transmission of normative religious values but also as a medium for cultivating ecological awareness and planetary responsibility. Therefore, transforming Islamic education in the Anthropocene requires a comprehensive reconstruction of educational paradigms across epistemic, curricular, pedagogical, and institutional dimensions.

At the epistemic dimension, Islamic education needs to move from a dualistic paradigm that separates religious knowledge from modern science toward an integrative paradigm that views both as part of the effort to understand *āyāt Allāh* (the signs of God) in the universe.[41] According to Husna and Adrian, sustainability-based Islamic education

[40] Carolyn Stubbs and Hallet Hullinger, "Developing Critical Consciousness in Students for Cultural Transformation," *Journal of the Scholarship of Teaching and Learning for Christians in Higher Education* 12, no. 1 (June 14, 2022): 9–31, https://doi.org/10.31380/sotlched.12.1.9.

[41] Hasbi Habibi, "Revitalization of the Islamic Education Paradigm: An Islamic Epistemological Perspective," *Bestari* 21, no. 2 (December 23, 2024): 102, https://doi.org/10.36667/bestari.v21i2.1532.

must integrate Islamic spirituality, environmental ethics, and scientific literacy in an interdisciplinary manner to foster more comprehensive ecological awareness.[42] This indicates that Islamic education requires the development of an ecological epistemology capable of cultivating "ecological systems thinking" and planetary consciousness among students.[43]

Such epistemic transformation also demands a more contextual reinterpretation of Islamic theological concepts in relation to contemporary ecological challenges. The concept of *tawḥīd* (monotheism) should no longer be understood merely as a theological doctrine, but also as a cosmological paradigm affirming the unity of the relationship among God, humanity, and nature. Likewise, the concept of *khilāfah* (stewardship) should be understood as humanity's ecological and social responsibility to preserve the Earth's sustainability, rather than as a justification for the exploitation of natural resources. Shaleh and Saidul Islam explain that Islamic environmental ethics has significant potential to construct a sustainability paradigm because it positions humans as guardians of ecological balance, responsible for the continuity of life.[44]

At the curricular level, the transformation of Islamic education requires the systematic integration of ecological sustainability issues into curricula. Thus far, environmental issues within Islamic education have remained peripheral, appearing only as supplementary components within moral

[42] Elisa Nur Maharani Husna and Wahid Adrian, "The Role of Islamic Education in Sustainable Development and Ecology (SDGs)," *JISEI: Journal of Islamic Studies and Educational Innovation* 1, no. 3 (September 9, 2025): 311–21, https://doi.org/10.61094/jisei.v1i3.62.

[43] Wieland et al., "Thinking Differently about Supply Chain Resilience: What We Can Learn from Social-Ecological Systems Thinking."

[44] Adha Shaleh and Md. Saidul Islam, "Averting the Existential Threat of the Planet: Islamic Environmental Ethics to Address the Contemporary Environmental Crisis," *Intellectual Discourse* 32, no. 1 (June 28, 2024): 239–264, https://doi.org/10.31436/id.v32i1.1937.

education or the *fiqh* (jurisprudence) of cleanliness. In fact, the Anthropocene paradigm demands an educational framework capable of explaining the interconnections among climate change, food crises, excessive consumption, ecosystem degradation, and human responsibility for the sustainability of life.

In this context, students should not only be taught the moral obligation to protect the environment, but also encouraged to understand the socio-ecological impacts of consumerist behavior, resource exploitation, and global developmental inequality. According to Fošner, sustainability education should be directed toward developing *sustainability literacy*, which includes systems thinking, critical reflection, social collaboration, and decision-making grounded in environmental ethics.[45]

At the pedagogical dimension, Islamic education in the Anthropocene era requires a shift in learning approaches from textual and teacher-centered models toward contextual, participatory, and ecologically experiential learning. Thus far, Islamic religious education has largely been dominated by memorization-based approaches and the transmission of normative doctrines, thereby providing limited space for students to develop reflective awareness of the environmental problems surrounding them. According to Stubbs and Hullinger, critical education must be capable of fostering students' reflective consciousness regarding social realities and structures of injustice that affect human life[46]

Environmental project-based learning (eco-project learning) has emerged as a relevant model within this context. Through activities such as waste management,

[45] Ajda Fošner, "Sustainability Literacy as a Key to a Better Future: A Look at Higher Education," *Sustainability* 17, no. 3 (January 25, 2025): 987, https://doi.org/10.3390/su17030987.

[46] Stubbs and Hullinger, "Developing Critical Consciousness in Students for Cultural Transformation."

greening initiatives, water conservation, organic farming, and sustainable lifestyle campaigns, students can develop ecological understanding alongside social skills and collective responsibility. Community-based ecological practices within *pesantren* education can also foster sustainability awareness and students' social responsibility in a more practical and applicable manner.

Meanwhile, at the institutional dimension, the transformation of Islamic education requires changes in institutional culture that concretely support ecological sustainability. *Madrasah*, *pesantren*, mosques, and Islamic higher education institutions need to be developed as centers of community-based ecological transformation. In this context, Islamic educational institutions should not merely teach sustainability values in theory, but must also serve as models of ecological practice through environmental management, waste reduction, energy conservation, and the cultivation of sustainable lifestyles.

Thus, the transformation agenda of Islamic education in the Anthropocene era is not limited to the addition of environmental topics within learning processes but involves a comprehensive reconstruction of educational paradigms. Islamic education needs to move toward an integrative paradigm that connects Islamic spirituality, ecological literacy, and global sustainability within a transformative educational framework. Such transformation is essential to enabling Islamic education to contribute to the development of a Muslim generation that is not only spiritually pious but also possesses ecological awareness, systems-thinking capacities, and a sense of responsibility for the sustainability of global life.

2. Comparison with Prior Frameworks

The Anthropocene paradigm in Islamic education develops through a critical dialogue with various theoretical

frameworks that examine the relationship among religion, humanity, education, and the environment. According to Crutzen, the Anthropocene era demonstrates that human activities have become the dominant force significantly affecting the Earth's system.[47] In this context, the Anthropocene paradigm not only expands the discourse of Islamic environmental ethics but also encourages the epistemological reconstruction of Islamic education to become more responsive to the global ecological crisis. Accordingly, Islamic education is positioned not merely as a medium for transmitting normative religious values in theory. Still, the must also serve as a space for ecological transformation that integrates spirituality, environmental literacy, systemic awareness, and planetary responsibility.[48]

Within the perspective of Islamic eco-theology, nature is understood as a manifestation of *āyāt Allāh* that possess spiritual and sacred dimensions. Seyyed Hossein Nasr argues that the modern ecological crisis originates in humanity's spiritual crisis, which has led it to become disconnected from transcendental awareness of nature. However, eco-theological approaches generally remain focused on philosophical and spiritual dimensions. The Anthropocene paradigm expands this approach by framing the ecological crisis as a structural problem rooted in the global economic system, industrialization, mass consumption, and human power relations over nature.

The Anthropocene paradigm is also closely related to Islamic character education. Nevertheless, Islamic character education has generally focused on individual moral transformation and has not explicitly developed systemic

[47] Crutzen, *A Pioneer on Atmospheric Chemistry and Climate Change in the Anthropocene*.

[48] Asep Sandi Ruswanda, "Mengkaji Konsep Ekoteologi Menurut Nasaruddin Umar," *Jurnal Keislaman* 8, no. 2 (October 2, 2025): 532–45, https://doi.org/10.54298/jk.v8i2.667.

ecological awareness. According to Shefer-Mossensohn, Islamic environmental ethics should foster broader sustainability awareness by integrating spirituality, social responsibility, and ecological justice. In this regard, the Anthropocene paradigm broadens the orientation of Islamic character education by positioning ecological piety (eco-piety) as part of collective social responsibility and planetary sustainability.

From the perspective of Education for Sustainable Development (ESD), the Anthropocene paradigm shares a common emphasis on the importance of education in building a sustainable society. However, the Anthropocene paradigm places stronger emphasis on the historical impacts of human activities on the Earth system. In the context of Islamic education, integrating ESD enables the development of curricula that connect Islamic spirituality with global ecological awareness.

Furthermore, the Anthropocene paradigm also bears close affinity to the concept of critical pedagogy developed by Paulo Freire. Critical pedagogy positions education as a space of liberation that encourages students to understand structures of social injustice and power relations within society.[49] In the ecological context, the Anthropocene paradigm demonstrates that environmental crises cannot be separated from global capitalism, resource exploitation, and modern consumerist culture. Consequently, Islamic education in the Anthropocene era must move from memorization-based pedagogical models toward reflective and

[49] Asep Eka Nugraha, Deki Wibowo, and Budi Hendrawan, "Paulo Freire's Critical Pedagogy Analysis Of Educational Transformation," *MSJ : Majority Science Journal* 2, no. 2 (May 27, 2024): 220–28, https://doi.org/10.61942/msj.v2i2.157.

transformative pedagogies that actively foster students' socio-ecological engagement.[50]

The Anthropocene paradigm can also be compared with the perspective of "deep ecology" developed by Arne Naess. Deep ecology rejects anthropocentric views and emphasizes that all living beings possess intrinsic value that must be respected.[51] This perspective shares similarities with Islamic teachings, which regard nature as God's creation whose balance must be preserved. However, the Anthropocene paradigm possesses a more historical and structural character, as it not only addresses ecological harmony but also examines the impacts of modern human activities on global transformations of the Earth system.

Meanwhile, from the perspective of Islamic environmental ethics, the Anthropocene paradigm reinforces the need to transform Islamic environmental ethics from a normative approach into a practical and institutional one. Islamic environmental ethics has long emphasized maintaining ecological balance, prohibiting *fasād* (destruction), and upholding the principle of *i'tidāl* (moderation).[52] Nevertheless, the Anthropocene paradigm demands that these values be concretely translated into educational curricula, institutional cultures, environmental policies, and sustainability-based social practices.

3. Barriers and Enablers

The transformation of ecological-based Islamic education in the Anthropocene era faces challenges that are not merely technical but also structural, epistemological, and

[50] Wisam Kh. Abdul-Jabbar, "Al-Kindi on the Anthropocene Curriculum: Intercultural Anthropo-Ethics and Citizenship Education," *Globalisation, Societies and Education*, July 14, 2025, 1–13, https://doi.org/10.1080/14767724.2025.2529955.

[51] Arne Naess, *The Deep Ecology Movement* (London: Routledge, 2018). 15.

[52] Mukhsin Mukhsin and Ilzam Hubby Dzikrillah Alfani, "Integrating Islamic Eco-Theology into Religious Education: A New Paradigm for Curriculum Development."

cultural in nature. The findings of this study indicate that the integration of ecological issues within Islamic education remains partial because an educational paradigm capable of connecting Islamic spirituality, ecological literacy, and sustainability approaches in an interdisciplinary manner has not yet been fully established.

One of the primary challenges is the dominance of normative curricula that remain oriented toward the transmission of ritual knowledge, memorization, and individual morality, thereby positioning environmental issues as merely supplementary material within moral education or the *fiqh* of cleanliness. Research conducted by Marwiji et al. demonstrates that the integration of environmental education into Islamic educational curricula in Indonesia remains symbolic and has not yet developed into a systemic sustainability-based learning model.[53]

The next challenge relates to the low level of ecological literacy among educators. Many Islamic religious education teachers still view environmental issues through a simplistic moral framework, focusing on cleanliness and avoiding littering, without a deeper understanding of the complexity of the global ecological crisis. These limitations prevent the learning process from fostering *ecological systems thinking* and students' critical awareness of environmental problems.

In addition, the dualism of knowledge within the Islamic educational system also constitutes a serious obstacle to the development of an ecological paradigm. The separation between religious sciences and modern scientific knowledge leads environmental issues to be perceived solely as the domain of science, while religious education serves only as moral-spiritual reinforcement. In fact, the ecological crisis in the Anthropocene requires an interdisciplinary approach that

[53] Marwiji et al., "Integration Of Environmental Education (Green Moral) Through The Learning Of Islamic Religion Education In School."

integrates spirituality, environmental ethics, and scientific literacy. This condition indicates that the dualism of knowledge not only limits the development of integrative curricula but also narrows students' perspectives in understanding the relationship among religion, technology, and environmental sustainability.

Another obstacle is the limited institutional policies and structural support for the development of ecologically based Islamic education. To date, Islamic educational policies in Indonesia have not systematically prioritized ecological sustainability in curriculum development and educational culture. Environmental programs in *madrasah* (Islamic schools) and *pesantren* (Islamic boarding schools) still largely depend on local initiatives, short-term projects, or collaborations with external institutions. Consequently, many emerging ecological practices often lack strong institutional sustainability.

A school culture that is not yet fully ecological also constitutes a challenge in the transformation of Islamic education. Many Islamic educational institutions continue to implement educational cultures that inadequately support sustainability practices, such as the use of single-use plastics, the lack of green spaces, poor waste management, and low participation of school communities in environmental conservation activities. In this context, ecological education frequently remains at the discursive level without being followed by concrete transformations in institutional culture.

Despite these challenges, Islamic education also offers several potential supports for developing an ecological paradigm in the Anthropocene era. The first factor is Islam's strong theological foundation regarding the relationship between humans and nature. The concepts of *tawḥīd* (monotheism), *khilāfah* (stewardship), *mīzān* (balance), and the prohibition of *fasād* (destruction) provide a strong normative basis for the development of environmental ethics

within Islamic education. Islamic environmental ethics therefore, holds significant potential to support sustainability-based education by integrating religious values and ecological awareness.

Another supporting factor is the growing "*eco-pesantren*" movement across various regions of Indonesia. This movement demonstrates that *pesantren* possess strong social and cultural capacities to develop community-based sustainability practices. Through greening programs, waste management, organic farming, and environmental conservation initiatives, "*eco-pesantren*" not only fosters students' ecological awareness but also demonstrates that Islamic education can serve as a context for socio-ecological transformation.

The increasing ecological awareness among Muslim youth also constitutes an important supporting factor in the transformation of Islamic education. Today's younger generation is becoming increasingly active in environmental movements, sustainability campaigns, and climate change advocacy through digital media and socio-religious communities. According to Bertuzzi, youth participation in environmental movements reflects the emergence of a new awareness regarding the importance of sustainability as part of socio-religious responsibility. This condition creates opportunities for Islamic education to develop learning models that are more participatory, contextual, and relevant to contemporary ecological challenges.

4. Limitations

This study has several limitations that should be considered in understanding the contribution and scope of the findings produced. First, this research is conceptual in nature and based on a library research approach; therefore, the arguments developed are primarily oriented toward theoretical and interpretative analyses of the Anthropocene

paradigm within Islamic education. Although this approach enables an in-depth exploration of the relationship among Islamic education, ecological ethics, and sustainability, it has not yet empirically illustrated how ecological-based Islamic education transforms in everyday educational practices.

Second, this study does not use empirical data from field observations, interviews, case studies, or participatory approaches within Islamic educational institutions. Consequently, the analysis of the implementation of ecological-based Islamic education remains dependent on the interpretation of existing literature and academic documentation. In fact, the transformation of ecological education within the contexts of *madrasah*, *pesantren*, and Islamic higher education institutions involves complex social, cultural, and institutional dynamics that cannot be fully explained through a purely conceptual approach.

Third, this study has not conducted a cross-national comparative analysis regarding the development of sustainability-based Islamic education. The scope of the study remains limited to the context of Islamic education in Indonesia. It therefore does not yet provide a broader understanding of how other Muslim-majority countries respond to ecological crises through the transformation of Islamic education. In fact, comparative cross-country studies are important for understanding variations in approaches, policies, and models of integrating ecological education within global Islamic educational systems.

Given these limitations, future research should focus on developing more in-depth empirical studies of the transformation of Islamic education in the Anthropocene era. One important agenda is the development of ethnographic studies on "*eco-pesantren*" and community-based ecological educational practices within *pesantren* environments. An ethnographic approach enables researchers to gain a deeper understanding of how Islamic values, *pesantren* culture, and

sustainability practices are internalized in student's daily lives and in the surrounding communities. According to Ryan King, ethnographic approaches are essential for understanding cultural practices and social interactions in the context of educational settings.[54]

In addition, research on the development of sustainability-based madrasa curricula also constitutes a highly important agenda. Such studies may focus on analyzing the integration of climate change issues, environmental sustainability, and ecological literacy into subjects such as Islamic religious education, *fiqh*, *akhlāq* (ethics), and civic education. In the context of Islamic education, curriculum studies may also explore how theological concepts such as *tawḥīd*, *khilāfah*, *mīzān*, and *Maqāṣid al-Sharī'ah* (objectives of Islamic law) are translated into sustainability competencies within Islamic educational systems.

Another important direction for future research is the development of analyses on Islamic ecological pedagogy, which examines contextual, participatory, and environmentally experiential learning approaches within Islamic education. Such research is essential for exploring pedagogical models that connect Islamic spirituality with ecological awareness and students' socio-ecological engagement in responding to environmental crises. Bainbridge and Gaia Del Negro explain that transformative education must foster students' reflective awareness of the social and ecological realities they encounter.[55]

In addition, future studies should explore the relationships among Islamic education, digital technology,

[54] Ryan King-White, *Ethnographic Approaches*, ed. Michael L. Silk, David L. Andrews, and Holly Thorpe (Abingdon, Oxon; New York, NY: Routledge, 2017. | Series: Routledge, 2017), https://doi.org/10.4324/9781315745664.

[55] Alan Bainbridge and Gaia Del Negro, "An Ecology of Transformative Learning: A Shift From the Ego to the Eco," *Journal of Transformative Education* 18, no. 1 (January 6, 2020): 41–58, https://doi.org/10.1177/1541344619864670.

and environmental movements among Muslim youth. The development of digital media and community-based Muslim environmental activism indicates that ecological awareness is now shaped not only through formal education, but also through participatory and transnational digital social spaces. According to Mannell and T. Smith, digital participatory culture significantly shapes social awareness and collective movements among contemporary youth.

Therefore, this study is expected to serve as an initial foundation for the development of more empirical, interdisciplinary, and transformative studies on ecological-based Islamic education. In the context of the Anthropocene crisis, Islamic education possesses a strategic opportunity to contribute to the construction of a sustainability paradigm that more comprehensively integrates spirituality, environmental ethics, and planetary responsibility.

E. Conclusion

This study demonstrates that the Anthropocene paradigm provides a relevant conceptual framework for reconstructing Islamic education amid the global ecological crisis. Islamic education possesses a strong theological foundation through the concepts of *tawḥīd* (monotheism), *khilāfah* (stewardship), *mīzān* (balance), and *Maqāṣid al-Sharīʿah* (objectives of Islamic law), which affirm humanity's responsibility to preserve ecological balance. Nevertheless, the integration of ecological awareness within Islamic education in Indonesia remains dominated by normative and moralistic approaches. It has not yet developed into ecological systems thinking, sustainability literacy, or structural responses to the challenges of the Anthropocene. On the other hand, the transformation of ecological-based Islamic education has begun to develop through eco-pedagogical practices such as "*eco-pesantren*" and "green campus" initiatives in PTKIN, the integration of *fiqh al-bīʾah*, (environmental jurisprudence) environmental project-based learning, and community-based conservation movements. Although these practices remain partial,

they indicate ongoing efforts to connect Islamic values with sustainability awareness and more contextual ecological actions. Therefore, Islamic education in the Anthropocene era requires reconstruction across epistemic, curricular, pedagogical, and institutional dimensions through an integrative paradigm that connects Islamic spirituality, environmental ethics, and sustainability literacy.

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