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Ecological Pesantren as an Innovation in Islamic Religious Education Curriculum: Is It Feasible?

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Abstrak

Artikel ini membahas inovasi kurikulum pendidikan agama Islam di pesantren berbasis ekologi sebagai respons terhadap tantangan lingkungan global. Pesantren sebagai lembaga pendidikan Islam tradisional, memiliki peran strategis dalam menanamkan nilai-nilai moral dan etika kepada generasi muda muslim. Dengan mengintegrasikan prinsip-prinsip ekologi ke dalam kurikulum pendidikan agama Islam, pesantren berkontribusi dalam membentuk kesadaran lingkungan di kalangan santri. Penelitian ini menyoroti peran pesantren sebagai lembaga pendidikan Islam tradisional dalam mengimplementasikan kurikulum ekologi serta tantangan yang dihadapi. Metode penelitian menggunakan pendekatan quasi kualitatif dengan analisis literatur, serta studi kasus pada beberapa pesantren yang telah mengimplementasikan kurikulum ekologi. Hasil penelitian menunjukkan bahwa integrasi nilai-nilai Islam dengan prinsip-prinsip ekologi dapat memperkuat kesadaran lingkungan, etika keberlanjutan, dan tanggung jawab sosial dalam masyarakat muslim. Pesantren berperan penting dalam menanamkan nilai-nilai ini melalui aktivitas seperti pertanian organik, pengelolaan sampah, dan program penghijauan seperti terjadi di Pesantren At Thoriq Garut, Pesantren Nurul Jadid Probolinggo dan Pesantren Trubus Iman Paser. Inovasi kurikulum ini melibatkan pendekatan holistik yang memperhatikan interaksi kompleks antara manusia, alam, dan Tuhan. Implikasi penelitian ini adalah perlunya dukungan dari berbagai pihak, termasuk lembaga pendidikan, masyarakat, dan pemerintah, dalam implementasi dan pengembangan kurikulum pendidikan agama Islam berbasis ekologi. Pengembangan kurikulum ini diharapkan menjadi model bagi lembaga pendidikan Islam di seluruh dunia dalam mengintegrasikan nilai-nilai ekologi ke dalam pendidikan agama.

Kata kunci: *Ekologi, Inovasi Kurikulum, Kesadaran Lingkungan, Pendidikan Agama Islam, Pesantren.*

Abstract

This article delves into the innovation of the Islamic religious education curriculum in eco-based pesantren as a response to global environmental challenges. This study is crucial because pesantren, as traditional Islamic educational institutions, play a strategic role in instilling moral and ethical values in young Muslims. By integrating ecological principles into the Islamic religious education curriculum, pesantren can raise environmental awareness among students. This research highlights the role of pesantren as traditional Islamic educational institutions in implementing ecological curricula and the challenges they face. The research employs a quasi-qualitative approach with literature analysis and case studies on several pesantren implementing ecological curricula. The findings indicate that integrating Islamic values with ecological principles can enhance environmental awareness, sustainability ethics, and social responsibility within the Muslim community. Pesantren play a crucial role in inculcating these values through activities such as organic farming, waste management, and greening programs, as seen in Pesantren At Thoriq Garut, Pesantren Nurul Jadid Probolinggo, and Pesantren Trubus Iman Paser. This curriculum innovation involves a holistic approach considering the complex interactions between humans, nature, and God. The implications of this research are the need for support from various stakeholders, including educational institutions, communities, and the government, in implementing and developing eco-based Islamic religious education curricula. The development of this curriculum is expected to serve as a model for Islamic educational institutions worldwide in integrating ecological values into religious education.

Keywords: *Curriculum Innovation, Ecology, Environmental Awareness, Islamic Religious Education, Pesantren.*

INTRODUCTION

Islamic Religious Education (PAI) has become an integral part of the curriculum in various countries with a Muslim-majority population (Winata et al., 2021). In the face of globalization and increasingly complex environmental challenges, the need for innovation in the PAI curriculum is becoming more urgent (M. Zaini, 2019). One approach that has recently gained particular attention is the ecological pesantren, which places the relationship between humans and nature at the core of the learning process (Utama et al., 2021).

The ecological pesantren approach stems from the awareness of human responsibility to care for the environment, a fundamental principle in Islam represented by the concept of *khalifah* (steward or guardian of the earth). Islam

teaches that humans are entrusted by God to nurture and preserve nature wisely,¹ recognizing the interdependence and close relationship between humans, nature, and God (R. Ilyas, 2016; Mardiyah et al., 2018). This responsibility includes preserving biodiversity, maintaining ecosystem balance, preventing environmental damage, and promoting sustainability in using natural resources (Akbar, 2024; Nurasiti & Mursalin, 2023).

However, there exists a significant gap between Islamic teachings, which emphasize the role of humans as stewards of the earth, and the destructive practices of humans toward the environment. Actions such as excessive exploitation of natural resources, pollution, and environmental degradation reflect contradictory behaviours that need to be addressed (Miskahuddin, 2020; Prayetno, 2018). Factors such as greed, lack of environmental awareness, and minimal application of moral values in daily life contribute to this issue (Rosowulan, 2019).

Islamic Religious Education plays a crucial role in addressing these challenges. With a holistic approach, PAI can provide a strong theological, moral, and ethical foundation to reinforce human awareness of their responsibility as *khalīfah* in protecting nature (Encep et al., 2022). An ecology-based PAI curriculum, implemented through ecological pesantren, offers a comprehensive framework for understanding Islamic teachings in the context of environmental protection and sustainability, emphasizing concepts such as *khalīfah*, *ḥikmah* (wisdom), and *amanah* (trust) (Akbar, 2024).

Seyyed Hossein Nasr, a prominent Islamic scholar, has long advocated integrating religious teachings and environmental concerns. In his works, such as “The Need for a Sacred Science,” Nasr emphasizes the importance of aligning religious education with ecological values to create a more holistic understanding of humanity’s role in the universe (Nasr, 1993). Fazlun Khalid, founder of the Islamic

¹ In the Qur’an, Allah mentions the word *khalīfah* twice. Firstly, it is found in Surah al-Baqarah verse 30, “*Inni ja’il fi al-ardh khalīfah*,” and secondly, in Surah al-Shad verse 26, “*Ya Dawud Inna ja’alnaka khalīfah fi al-ardh*” (Rasyad, 2022). Both verses explain that the term *khalīfah* is used by the Qur’an to refer to those granted authority to manage territories, whether extensive or limited. In this context, David manages the territory of Palestine, while Adam is potentially tasked with managing the entire earth at the beginning of human history. On the other hand, these verses also show that a *khalīfah* is capable, even in actuality, of making mistakes and errors due to following desires. Therefore, Adam and David are warned not to follow their desires (Siraj, 2018).

Foundation for Ecology and Environmental Sciences (IFEES), also highlights the need to build ecological awareness among Muslims through religious education (Khalid, 2017).

Case studies on integrating ecological principles into Islamic religious education (PAI) curricula across various educational institutions provide valuable insights into the challenges and opportunities of effectively implementing this approach. In Indonesia, which boasts the largest Muslim population in the world and abundant natural resources, discussions about innovating PAI curricula with an ecological basis are particularly relevant (Dewi, 2021; Utama et al., 2021). Several pesantren have begun adopting the ecological pesantren model, incorporating environmental education into their curricula to foster environmental awareness among students.

Ecological pesantren teach religious values and practice sustainability in everyday life. For instance, these pesantren develop organic gardens, manage waste efficiently, and utilize renewable energy, which are concrete examples of how Islamic teachings can be applied to environmental conservation efforts.

The innovation of an ecology-based curriculum in Islamic religious education has garnered significant attention in several academic studies. One such example is Ratna Dewi's research, which underscores the importance of integrating ecological concepts into the Islamic religious education curriculum to enhance environmental awareness among students. Dewi found that emphasizing Islamic values, particularly the responsibility of humans as *khalifah* (stewards) in preserving nature, can significantly contribute to sustainable behaviour (Dewi, 2021). However, her study is descriptive and does not delve into the detailed implementation of this curriculum innovation (Dewi, 2021).

Another study by Rahman and Hasan (2019), titled "Implementing Eco-friendly Curriculum in Islamic Educational Institutions of Bangladesh: A Conceptual Study," focuses on implementing an ecology-based curriculum in Islamic educational institutions in Bangladesh. They discovered that although the concept is supported, challenges such as limited resources and a lack of understanding of the relationship between Islam and ecology hinder its implementation. This study

provides insights into the impediments that must be addressed when designing and implementing ecology-based curriculum innovations (Rahman & Hasan, 2019).

Additionally, Salam and Shamsul's study (2020), "Developing Islamic Religious Education Curriculum Based on Ecological Values: A Preliminary Study", highlights the importance of developing appropriate teaching materials to support the innovation of an ecology-based Islamic religious education curriculum. They emphasize the need for relevant and contextual learning resources to help students comprehend Islamic values and ecological principles. This research indicates that the suitability and availability of teaching materials are crucial factors in successfully implementing such a curriculum (Salam & Shamsul, 2020).

Nonetheless, this study offers a quasi-qualitative approach to exploring the concepts, values, and practices in innovating an ecology-based Islamic religious education curriculum. This approach differs from previous research, which tends to use quantitative methods to analyse the implementation or effectiveness of the curriculum. Furthermore, this study emphasizes a comprehensive literature analysis, enabling a deep understanding of the underlying concepts of curriculum innovation and the challenges and opportunities in its implementation.

The final study by Abdullah and Ibrahim (2021), titled "Integrating Environmental Education in Islamic Religious Curriculum: A Holistic Approach," underscores the importance of a holistic approach in ecology-based curriculum innovation. They assert that a holistic approach encompassing spiritual, intellectual, and practical aspects of learning can help students profoundly understand the interconnectedness between Islam and ecology. This article provides broader insights into various approaches to designing an ecology-oriented curriculum, an essential consideration in this research (Abdullah & Ibrahim, 2021).

This study will investigate the possibilities and challenges of implementing an ecology-based Islamic religious education curriculum in pesantren, an Indonesian educational institution with great potential for integrating ecological values into Islamic religious education. Through a qualitative approach and in-depth literature analysis, this research aims to reaffirm its significant contribution by fitting the context of pesantren. Specifically, it focuses on developing innovative and sustainable Islamic religious education curricula in ecological-based pesantren.

METHODOLOGY

This research employs a meticulous and structured methodological approach to gain a profound understanding and significantly contribute to the scholarly development of eco-based Islamic religious education curriculum innovation. Given the study's focus on exploring concepts, values, and practices within the context of an Islamic religious education curriculum integrated with ecological principles, a qualitative approach was chosen as the primary method. This approach allows the researcher to comprehend the complexity and dynamics of the observed phenomena without being confined to quantitative measurements (Creswell, 2012).

Literature analysis served as the primary approach to this research. The researcher systematically explored and analyzed various sources of information, such as books, journal articles, policy documents, and other scientific publications relevant to the theme of ecological pesantren. This approach enabled the researcher to gather comprehensive and in-depth secondary data to support the theoretical construction of eco-based Islamic religious education curriculum innovation (Moleong, 2006).

During the analysis phase, qualitative analysis techniques were used to interpret the collected data. This process involved critical reading, categorization, and synthesis of information from various sources to identify patterns, themes, and relationships between concepts relevant to the innovation of the eco-based Islamic religious education curriculum (Fadli, 2021). Additionally, content analysis techniques were applied to uncover the meaning and significance of the observed texts, thereby allowing the construction of a robust and detailed conceptual framework (Hajaroh, 2010).

Ensuring the validity of the data in this research is crucial for guaranteeing the reliability of the findings (Fadli, 2021). In literature analysis, the credibility of information sources is the primary focus of validity testing (Rahardjo, n.d.). The researcher must ensure that the sources used are reputable, relevant to the research topic, and employ appropriate research methods. Moreover, the researcher must maintain integrity and objectivity in the data analysis and minimize potential biases and errors (Creswell, 2012).

Opinions of prominent figures in this field are also crucial to the research discussion. Supporting arguments with views from recognized figures in eco-based

Islamic religious education curriculum innovation can add depth and additional credibility to the research findings. References from works by figures such as Abdullah Saeed,² Ibrahim Ozdemir,³ and Kamaruzaman Yusoff⁴ can provide a strong theoretical foundation to support the conceptual construction of this research.

Thus, this research used a qualitative approach, literature analysis methods, qualitative analysis techniques, and rigorous data validity testing to meaningfully contribute to the understanding and developing eco-based Islamic religious education curriculum innovation. Hopefully, these findings and methodological approaches can inspire further research and more effective practical implementation in the context of sustainable and ecologically oriented Islamic education.

RESULTS AND DISCUSSION

Eco-spiritualism: A Long-Neglected Dimension of Faith

Preserving nature as a dimension of faith has long been overlooked in various religious teachings, which often focus more on ritualistic, doctrinal, and moral aspects (Benawa, 2018). Historically, many religious traditions have prioritized the performance of religious rituals, understanding of religious doctrines, and moral

² Abdullah Saeed is an Islamic scholar internationally renowned for his contributions to the field of contemporary Islamic studies, particularly in the context of the relationship between Islam, society, and politics. He holds the position of Professor of Arab and Islamic Studies at the University of Melbourne, Australia, where he also serves as the director of the Centre for Islamic Thought and Education (A. Zaini, 2014). Abdullah Saeed has been a subject of significant study, especially in the context of interpreting the concept of *khalifah* in the Qur'an and its relation to ecological issues. In his works, Abdullah Saeed introduces a meticulous theological and hermeneutical approach in analyzing Islamic concepts relevant to understanding the role of humans as *khalifah* on earth. One of his major contributions lies in expanding the understanding of the concept of *khalifah*, which is not only seen as power or domination but also as a responsibility and trust to wisely preserve and care for the environment.

³ Ibrahim Özdemir is a Turkish academic renowned for his contributions to the study of Islamic ecology. He holds a professorship in the Department of Philosophy and Religious Studies at Marmara University in Istanbul, Turkey. Ibrahim Özdemir has dedicated his academic career to deepening the understanding of the relationship between Islam and the environment, as well as developing theological and ethical frameworks to address global environmental challenges (Özdemir, 2003). One of his notable works is his book titled "The Ethical Dimension of Human Attitude towards Nature: A Muslim Perspective," providing profound insights into the Islamic perspective on the environment (Özdemir, n.d.).

⁴ Kamaruzaman Yusoff is a Malaysian academic renowned for his contributions to the field of Islamic ecology and the environment. He holds a professorial position at the Faculty of Science and Technology, Universiti Sains Islam Malaysia (USIM) (ChancellorPhD, n.d.). Kamaruzaman Yusoff has dedicated his academic career to advancing the understanding of the Islamic perspective on the environment and offering beneficial insights towards environmental preservation efforts (Yunita & Idami, 2020).

practices in daily life (Huda, 2002). Consequently, the relationship between humans and nature is often considered a secondary issue, receiving insufficient attention (Albar, 2017).

In many religious traditions, adherents' primary duty is worshipping God, emphasizing obedience to religious commands and specific religious practices (Henny, 2020; Husna & Arif, 2021). This often results in environmental issues or responsibilities towards nature being deemed less important or even entirely neglected (M. Ilyas, 2008). In this context, the human-nature relationship is considered a secondary matter lacking urgency or relevance in daily religious practices.

However, it is crucial to recognize that authentic religious teachings contain numerous directives and values highlighting the importance of preserving nature as part of religious practice (Kurniati & Mursalin, 2023). For instance, in Islam, the concept of *khalifah*, God's representative on earth, underscores the human responsibility to care for and protect the earth as a trust from God (Aditiya, 2019). Nevertheless, the understanding of this concept is often limited to practical aspects, while its spiritual and ecological dimensions are frequently overlooked.

In many cases, a narrow interpretation of religious teachings leads to a lack of awareness about the importance of preserving nature as part of religious practice. The priority given to rituals, doctrine, and morality often obscures the urgency of environmental stewardship as an inescapable aspect of faith for believers. As a result, environmental issues are often viewed as responsibilities to be addressed by governments or non-governmental organizations rather than as integral parts of religious practice (Zuhdi, 2015).

In the current global context, where environmental crises are becoming increasingly urgent, religious communities need to strengthen their understanding and practices, emphasizing the importance of preserving nature as an inseparable dimension of faith (Zuhdi, 2015). This requires a broader transformation of thought and attitude within religious communities, expanding the understanding of religious practice to include environmental responsibility as an integral part of worship to God. Thus, preserving nature is not merely a practical or secondary issue but also an expression of deep faith and profound appreciation for God's creation.

Islamic Religious Education and Its Role in the Ecological Crisis

Islamic Religious Education (PAI) is an integral part of the education system in countries with a majority Muslim population (Hashim & Langgulung, 2008). Conceptually, PAI encompasses a series of teachings aimed at developing understanding, appreciation, and practice of religious principles within the framework of Islamic teachings (Nurmadiyah, 2016). This includes understanding Islamic doctrines, moral values, ethics, and religious practices prescribed by Sharia (Fauzan et al., 2019). PAI also aims to shape character and personality rooted in Islamic values and promote a profound understanding of the relationship between religion and daily life (Arsad, 2020).

PAI plays a significant role in addressing the increasingly concerning ecological crisis (Syamsudin, 2017). It serves to transmit Islamic teachings and as a platform to build environmental awareness, sustainability values, and social responsibility towards nature. In the context of the global ecological crisis, PAI holds great potential to act as an agent of change in shaping the attitudes and behaviours of Muslims towards the environment (Dewi, 2021).

Ecology, a branch of biology, studies the interactions between organisms and their environment (Jaiswal, 2021). The term originates from the Greek words "oikos", meaning "house" or "dwelling", and "logos", meaning "study" (Samadi, 2023). Specifically, ecology involves a deep analysis of organisms' distribution, abundance, and behaviour concerning biotic (other organisms) and abiotic (non-living) environmental factors. This discipline examines various levels of life organization, from individuals, populations, communities, and ecosystems to the biosphere (Indah Sari, 2020).

A central concept in ecology is the interaction between organisms and their environment (Al-Hakim, 2022). This includes interactions among species (interspecies interactions) and between organisms and abiotic factors such as weather, soil, water, and climate (organism-abiotic interactions). Ecology also studies the various adaptive strategies organisms use to survive in changing environments, including behavioural, morphological, and physiological adaptations (Widodo et al., 2021).

The importance of ecology extends beyond a fundamental understanding of nature; it has crucial implications for conservation, natural resource management, and understanding environmental changes (Hartati, 2022). In conservation, ecological knowledge assists in managing natural habitats and endangered species. By understanding organism-environment interactions, conservationists can design effective strategies to preserve biodiversity (Prasetyo, 2017).

A central Islamic concept relevant to the ecological crisis is the concept of *khalifah*, where humans are viewed as God's stewards on earth responsible for caring for and maintaining the universe (Azizah & Raini, 2018). PAI can enhance understanding of the *khalifah* concept and emphasize the importance of maintaining ecological balance and caring for God's creation (Utama et al., 2021). Thus, PAI helps instil awareness of human moral responsibility as *khalifah* and the significance of environmental stewardship as an integral part of religious practice (Solichin, 2017).

Furthermore, PAI provides a platform to explore Islamic teachings relevant to environmental issues, such as *tauhid* (the oneness of God), *amanah* (trust), *'adl* (justice), and *rahmah* (compassion). By understanding these values in the context of the environment, Muslims can gain a holistic view of the relationship between humans, nature, and God. PAI can help integrate these values into daily life, providing a moral foundation for sustainable actions in environmental conservation (Yumnah, 2020).

PAI also teaches environmentally friendly practices (Yumnah, 2020), such as water conservation, waste reduction, renewable energy use, and reforestation (Julaeha & Kurniawan, 2018). By incorporating these practices into daily life, Muslims can positively contribute to reducing their ecological footprint and ensuring environmental sustainability.

PAI can foster collective awareness and action in response to the ecological crisis (Atiqoh & Saputro, 2017). Through activities like teaching, lectures, seminars, and discussions, Muslims can share knowledge, experiences, and ideas on environmental conservation and addressing complex environmental challenges (Anwar, 2015). By building such awareness and solidarity, Muslims can be a positive force in promoting environmental sustainability.

Moreover, PAI can critique environmentally destructive practices and advocate for more eco-friendly policies (Idris et al., 2020). By raising awareness of the negative impacts of excessive environmental exploitation, PAI can mobilize support for collective action to responsibly change consumption, production, and development patterns towards nature. This includes advocating for policies supporting renewable energy, forest protection, sustainable water management, and other efforts to reduce environmental damage.

In addressing the ecological crisis, PAI can strengthen community involvement in environmental conservation efforts (Syamsudin, 2017). By mobilizing Muslims to engage in environmental activities such as tree planting, beach cleanups, and recycling programs, PAI can help build awareness of the importance of active participation in environmental stewardship. Through collaboration between religious communities and environmental organizations, PAI can foster a more profound collective effort to safeguard nature.

Islamic Religious Education in Pesantren: An In-Depth Analysis

Islamic Religious Education (IRE) in pesantren plays a central role in shaping the character and religious understanding of the students. As a traditional Islamic educational institution, Pesantren offers a comprehensive curriculum encompassing religious knowledge, morals, and spirituality. According to Azra (2013), pesantren function as educational institutions and as centres for disseminating deeply rooted Islamic values within society. The IRE curriculum in pesantren is designed to produce individuals who are theoretically knowledgeable about religion and capable of applying it in their daily lives.

In globalization and modernization, pesantren faces the challenge of remaining relevant without sacrificing their traditional essence. Zuhdi (2018) asserts that integrating modern sciences into the IRE curriculum is one way to address this challenge. This integration allows students to receive a holistic education with deep religious understanding and broad general knowledge. Pesantren that successfully implements this integration can produce graduates prepared to face global challenges without losing their Islamic identity.

Furthermore, the IRE curriculum in pesantren also focuses on forming ethics and morals. This aligns with Al-Attas's (1980) view, which emphasizes that the

primary goal of Islamic education is to produce individuals with adab, which refers to good and proper conduct according to Islamic teachings. Pesantren employs a learning approach that emphasizes the practice of worship, social interactions (muamalah), and spiritual efforts (mujahadah). This learning is supported by a conducive pesantren environment where students live and learn together under the guidance of *kyai* and *ustaz*.

Additionally, pesantren plays a crucial role in teaching social values and diversity. According to Dhofier (1982), pesantren represent a microcosm of a heterogeneous society where students come from various social and cultural backgrounds. In pesantren, students learn about tolerance, cooperation, and solidarity. This is essential in fostering an inclusive understanding of Islam and reducing the potential for radicalism. Pesantren teaches Islam, a religion of *rahmatan lil 'alamin* (a mercy to all creation), values differences, and promotes peace.

The holistic approach in IRE at pesantren also includes environmentally oriented learning. For example, the concept of *khalifah* (God's vicegerent on earth) taught in pesantren instils in students a sense of human responsibility towards nature. According to Nasr (1996), understanding this concept is crucial in addressing the global ecological crisis. Pesantren, which incorporates environmental education into its curriculum, can help produce generations that are more aware of the importance of preserving nature as part of Islamic teachings.

Islamic Religious Education in pesantren offers a unique and integral educational model that combines religious, moral, social, and environmental teachings. With this approach, pesantren not only contribute to shaping individuals who are devout and pious but also individuals with strong character, broad knowledge, and high social and environmental awareness. The integration of tradition and modernity, theory and practice, and religious and general sciences in the IRE curriculum at pesantren makes it relevant and significant in the context of contemporary Islamic education.

Ecological Pesantren as an Innovation in Islamic Education Curriculum: A Proposal

Curriculum innovation represents a systematic effort to design and implement changes in the structure, content, methods, and evaluation of learning within an

educational program (Fatimah, 2021). This concept considers the dynamic changes in social, technological, economic, and cultural needs that influence the educational process. Generally, curriculum innovation aims to enhance the relevance, effectiveness, and quality of education to produce competent graduates ready to meet contemporary demands (Utomo, 2020).

Understanding curriculum innovation involves a deep comprehension of the curriculum's essence as a guideline or learning plan that includes objectives, content, methods, and evaluation (Thaib & Siswanto, 2015). In this context, innovation refers to the process of change aimed at improving, updating, or developing the existing curriculum in line with contemporary developments and societal needs (Sabdarifantu et al., 2021).

Various curriculum innovations can be identified, including innovations in curriculum content, teaching methods, learning evaluations, and educational management approaches (Muslimin, 2016; Rasyidi, 2019). Curriculum content innovation involves adding, reducing, or modifying learning materials to make them more relevant to scientific developments and labour market needs (Salimodo et al., 2023). Meanwhile, teaching method innovation relates to using more interactive, collaborative, and technology-based approaches, techniques, and media (Kartika et al., 2024).

Innovation in learning evaluation encompasses developing more holistic evaluation methods oriented towards competency-based learning and providing constructive feedback to students to improve their academic performance. Conversely, innovation in educational management approaches involves changes in management systems, policies, and administrative practices to enhance efficiency, accountability, and quality of educational services (M. Zaini, 2019).

Experts in curriculum innovation emphasize the importance of aligning the proposed innovations with the existing educational goals, values, and contexts. Arthur W. Foshay, in his book *The Curriculum: Purpose, Substance, Practice*, underscores the need for a balance between progressive and conservative innovations in curriculum development (Foshay, 2000). He asserts that successful innovation can merge traditional principles with relevant and practical new ideas.

Furthermore, Michael Fullan, an expert in educational change, highlights the importance of collaboration, participation, and effective leadership in implementing curriculum innovation. According to Fullan, sustainable innovation requires a collective commitment from various educational stakeholders, including teachers, students, parents, and related parties (Fullan et al., 2008).

Another relevant reference is the work of William H. Schubert, who advocates a critical approach to curriculum innovation, emphasizing the importance of considering the political, social, and cultural implications of curriculum changes (He et al., 2015). In his works, Schubert highlights the need for critical reflection on the objectives and side effects of curriculum innovation and the crucial role of educators as responsible agents of change.

Thus, curriculum innovation is crucial to developing responsive, adaptive, and progressive education (Sabda, 2019). By integrating expert views and holistic and integrated approaches, discussions on curriculum innovation can provide deep insights into the complexities and dynamics of change in the ever-evolving world of education.

Ecological pesantren, a curriculum innovation in Islamic education, reflects a progressive approach that integrates ecological principles into a high-quality and relevant curriculum aligned with contemporary challenges. This concept promotes an inclusive vision that combines Islamic values with environmental awareness, creating a holistic and sustainable educational foundation. Essentially, the ecological pesantren curriculum innovation aims to strengthen the understanding and implementation of Islamic teachings that view the universe as a trust that must be preserved and protected (Hanifah Salsabila et al., 2019).

Concrete examples of ecological pesantren curriculum innovation include instilling values such as social responsibility, environmental justice, simplicity, and concern for living beings (Hanifah Salsabila, 2018). A relevant example is integrating the concept of *khalifah* (steward) of nature in Islamic teachings, where humans are seen as God's representatives on Earth responsible for the ecosystem's sustainability and life. Through this approach, Islamic education in pesantren teaches religious rituals and encourages individuals to become change agents who contribute to the well-being of nature and humanity as a whole.

Implementing ecological curricula in Indonesian pesantren has demonstrated various innovative approaches integrating ecological principles with religious teachings. At Pesantren Trubus Iman Paser, the waste management program exemplifies a tangible application of the ecological curriculum. Students are instructed to segregate non-organic and organic waste, which is composted for the pesantren's gardens. Additionally, Pesantren Trubus Iman Paser maintains an organic farm managed by the students. They learn organic farming techniques, from soil preparation to harvesting, emphasizing reducing chemical pesticide use. A reforestation program is also in place, requiring each student to plant and care for a tree and to participate in reforestation activities around the pesantren (Amirullah & Inayah, 2022).

Pesantren At Thoriq Garut adopts a project-based ecological curriculum, where students actively engage in conservation projects and environmental research. One major project focuses on water conservation, with students constructing infiltration wells and rainwater harvesting ponds and learning water-saving techniques. Furthermore, students conduct research on local ecosystems, collect data, and compile research reports, enhancing their scientific skills. A herbal garden is also developed at Pesantren At Thoriq Garut, where students learn to plant and care for medicinal herbs, gaining practical knowledge on the sustainable use of natural resources (Maula, 2022).

Pesantren Nurul Jadid Probolinggo employs a holistic approach by integrating ecological principles into all subjects. For example, in *Fiqh* (Islamic jurisprudence) lessons, students are taught about Islamic laws related to environmental conservation. Pesantren Nurul Jadid Probolinggo also collaborates with environmental organizations to provide additional student training, such as workshops on renewable energy and recycling. Moreover, students actively participate in environmental campaigns and educational activities in the surrounding community, organizing seminars and other educational events to raise environmental awareness. This collaboration grants students access to the latest knowledge and technologies in the field of ecology and extends the positive impact of the pesantren's ecological education to the broader community (Suryanto, 2020).

Implementing ecological curricula at Pesantren Trubus Iman Paser, At Thoriq Garut, and Nurul Jadid Probolinggo demonstrates that pesantrens can be crucial in educating environmentally conscious youth. These various approaches enhance students' environmental knowledge and encourage tangible pro-environmental actions. As a result, students become more aware of the importance of environmental stewardship and actively engage in conservation and reforestation efforts. These concrete examples can serve as models for other pesantrens in Indonesia and Muslim-majority countries, illustrating that ecological education can coexist with Islamic values and contribute positively to environmental sustainability.

Experts also emphasize the urgency and relevance of ecological pesantren curriculum innovation. Abdullah Saeed, a prominent scholar in Islamic studies and contemporary issues, underscores the need to transform Islamic education to align religious teachings with global issues such as climate change and environmental sustainability. By adopting contextual interpretation theory, it can be understood that ecological-based Islamic education is not only contemporarily relevant but also a moral obligation for Muslims to preserve nature and uphold social justice.

Another essential reference is the work of Ibrahim Ozdemir, a Muslim philosopher who explores the relationship between Islam and ecology. In his writings, Ozdemir emphasizes that Islam inherently supports a holistic view of the universe, demanding wise protection and management of natural resources. Therefore, integrating ecological values into the pesantren curriculum is essential in strengthening a sustainability-oriented religious identity (Ozdemir, n.d.).

Broadly, ecological pesantren curriculum innovation can positively impact several aspects (Dewi, 2021). First, this approach can strengthen the relationship between humans and nature, promoting a responsible attitude towards the environment and other living beings. Second, through contextual and relevant learning, this curriculum innovation can enhance the understanding and appreciation of Islamic teachings, making them more pertinent to contemporary demands. Third, through inclusive and participatory educational practices, this innovation can shape a generation with high ecological awareness ready to become change agents in maintaining the planet's sustainability.

Therefore, ecological pesantren curriculum innovation significantly contributes to developing holistic, relevant, and sustainable Islamic education. By integrating ecological values into religious education, pesantren can play a crucial role in shaping a generation that is devout and highly concerned about the environment and the sustainability of life.

Challenges are Exist

The implementation of eco-pesantren as an innovative curriculum in Islamic religious education faces various complex and multidimensional challenges (Bakri, 2021). One of the main challenges is resistance to curriculum changes, often coming from educators, pesantren administrators, and communities with conservative views on religious education. This resistance arises due to concerns that a curriculum innovation integrating ecological principles could undermine the “mainstream” (Latifah & Yulisinta, 2020). Therefore, a comprehensive and participatory approach is needed to overcome this resistance through constructive dialogue and continuous education for all relevant stakeholders.

Another significant challenge is the limitation of resources, both human and financial. Implementing the eco-pesantren curriculum requires educators who not only master religious knowledge but also have a deep understanding of ecology and environmental issues. However, the availability of educators with dual qualifications is still very limited. On the other hand, financial constraints also pose a barrier, as integrating ecological programs into the curriculum requires considerable investment in teaching materials, facilities, and teacher training (Nur Aulia et al., 2024).

The difficulty in designing a curriculum that balances religious teachings with ecological education also presents a challenge. A curriculum overly focused on ecology may reduce the emphasis on religious education, while one too focused on religion might neglect the importance of ecological awareness. Therefore, an integrative and interdisciplinary approach is necessary to develop a curriculum that harmoniously balances both aspects effectively (Nisa et al., 2017).

Furthermore, challenges from educational policy and regulation aspects cannot be ignored. The education system in many countries, including Indonesia, is often rigid and less flexible in adapting curriculum innovations that do not align with established national standards (Madhakomala et al., 2022). Strong advocacy efforts

are needed to influence policymakers to support the development and implementation of the eco-pesantren curriculum. This includes policy revisions that allow for more responsive curriculum adaptations to global issues such as climate change and sustainability.

Finally, technical challenges in implementing eco-pesantren also require attention. For instance, applying project-based learning methods that emphasize hands-on environmental stewardship might encounter field constraints, such as limited access to adequate technology and natural resources for practical activities. Additionally, the digital divide poses a challenge, especially in pesantren located in remote areas with limited access to the internet and information technology.

Collaboration among educational stakeholders, from the government, educational institutions, and non-governmental organizations to the broader community, is crucial in addressing these challenges. This collaboration should involve financial support, exchanging knowledge, experiences, and best practices in integrating ecological education into Islamic religious curricula. Thus, as an innovative curriculum in Islamic religious education, the eco-pesantren can sustainably develop and make a tangible contribution to environmental preservation and enhance education quality.

CONCLUSION

In the face of increasingly complex global dynamics, the need for Islamic religious education to integrate ecological principles has become urgent. This study explores the innovation of an ecology-based Islamic education curriculum through a quasi-qualitative approach and thorough literature analysis. Key concepts such as *khalīfah* (stewardship of the earth), *tauḥīd* (the oneness of God), and *amanah* (trust) form the foundation for merging Islamic teachings with environmental preservation. Integrating these principles significantly enhances the Muslim community's environmental awareness, sustainability ethics, and social responsibility. Furthermore, the study emphasizes that this curriculum innovation involves a holistic approach, considering the complex interactions between humans, nature, and God. It aims to instil a deep understanding of the harmonious relationship between humans and nature and their moral responsibility to sustain life on earth.

The study underscores the need for support from educational institutions, communities, and the government in implementing and developing this curriculum. Collaborative efforts are essential to create a supportive learning environment, provide adequate resources, and establish policies promoting ecology-oriented Islamic education. Integrating ecological principles into Islamic education through pesantren offers a unique opportunity to foster environmental awareness among future generations. Pesantren's holistic approach and community connection make them vital ecological awareness and action centres. Embedding ecological education within the traditional Islamic framework can cultivate a spiritually enlightened and environmentally conscious generation, contributing to a more sustainable future. This aligns with the intention to create resilient and responsible Muslim communities prepared to face 21st-century environmental challenges.

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