Integration of Islamic Socio-Cultural Values in Nature-Based Education: A Systematic Literature Review Study of Nature Schools and Eco-Pesantren (Indonesia) With Forest Schools (Europe)

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Abstract

This study examines the integration of Islamic socio-cultural values within nature-based environmental education by comparing three educational models: *Sekolah Alam* and eco-pesantren in Indonesia, and Forest Schools in Europe. The growing global ecological crisis highlights the need for educational approaches that promote not only cognitive development but also value internalization, character formation, and ecological consciousness. Using a qualitative design with a Systematic Literature Review (SLR) guided by PRISMA 2020, this study reviewed literature from Scopus, Web of Science, DOAJ, Google Scholar, GARUDA, and ResearchGate published between 2019 and 2025. Of the 1,546 initial records, 30 studies met the inclusion criteria and were synthesized thematically. The findings show that: (1) *Sekolah Alam* cultivates ecological character through experiential learning grounded in Islamic values and local wisdom; (2) Eco-pesantren integrate Islamic ecological theology, *khalifah* (stewardship), *amanah* (trust), *ihsan* (excellence), and ecological monotheism, into conservation practices, organic farming, and waste management; (3) Forest Schools emphasize exploration, learner agency, and wellbeing without religious foundations; and (4) all three models foster emotional and ethical connections to nature while differing in value orientations. The proposed Islamic Socio-Cultural and Nature-Based Environmental Education Model offers a framework for developing faith-based and sustainability-oriented Islamic education curricula.

Keywords: *Nature School, Eco-Pesantren, Forest School, Environmental Education, Eco-Pedagogy, Nature-Based Learning.*

A.   INTRODUCTION

Environmental degradation, including climate change, deforestation, and biodiversity loss, has escalated into a global crisis. Scholars increasingly argue that these issues are not solely technical but also cultural and ethical, shaped by how humans perceive and value nature (Fuad & Soedarto, 2018). Consequently, contemporary environmental education highlights holistic approaches that integrate ecological literacy with socio-cultural, moral, and spiritual values to foster enduring pro-environmental behavior (Cheung, 2024; Karina et al., 2025).

In Indonesia, the Nature School *"Sekolah Alam"* movement positions nature as the core learning environment through experiential learning and local wisdom–based ecological character formation (Immaniar et al., 2019; Ruspandi, 2022). Although previous studies report positive outcomes for students' ecological intelligence and

resilience, the literature remains fragmented and largely descriptive; few studies link the model with value-based or religious paradigms.

Simultaneously, Islamic educational institutions have developed environment-based initiatives such as *eco-pesantren* and Green Madrasah (Herdiansyah et al., 2019; Karya Bakti & Rohman, 2024). Beyond practical environmental management, these institutions embed ecological stewardship within Islamic theology through values such as *khalifah* (stewardship), *amanah* (custodianship), *tawhid* (unity of creation), and *maslahah* (public good) (Chasanah, 2022). Yet, studies on eco-pesantren are often single-case reports and lack synthesis of how theological values shape ecological practices.

In Western contexts, the *Forest School* model, originating in Scandinavia, emphasizes nature immersion, structured free play (Cree & Robb, 2021), and socio-emotional development (Garden & Downes, 2023; Milchem et al., 2011). However, the model is predominantly secular and rarely examined through socio-religious or cross-cultural comparative lenses (Abiola & Abdulkareem, 2025). Although the three models similarly position nature as a learning space, no systematic review has compared them across socio-cultural and religious contexts. As a result, transferable value components, implementation strategies, and best practices remain unmapped. This study therefore conducts a Systematic Literature Review to synthesize evidence and construct a conceptual model for value-oriented environmental education aligned with sustainability.

This study aims to analyze how *Sekolah Alam* represent environmental education grounded in local wisdom and Islamic values, examine how *eco-pesantren* integrate Islamic theology with ecological practices, and explore how Forest Schools implement environmental education based on socio-cultural values. Furthermore, this study seeks to synthesize the universal values derived from these three educational models into a conceptual framework for sustainability-oriented Islamic environmental education. This synthesis contributes to curriculum development, teacher training, and policy initiatives supporting SDG 4 (Quality Education) and SDG 13 (Climate Action) (Cahyono et al., 2024; Hasyim et al., 2023)

B.   METHODS
1. Research Design

This study employed a Systematic Literature Review (SLR) to synthesize empirical findings on nature-based environmental education within three models: Nature Schools, eco-pesantren, and Forest Schools. The SLR approach was selected because it enables transparent, replicable, and bias-controlled identification, selection, and evaluation of scientific literature, distinguishing it from narrative or traditional reviews. The review followed the PRISMA 2020 protocol (Brereton et al., 2007; Kitchenham & Charters, 2007), which is widely used in social science SLRs, ensuring methodological rigor from search to synthesis. This SLR aims not only to collate evidence but also to conduct cross-cultural and cross-value comparative analysis,

examining how socio-cultural and theological values influence environmental education design.

2. Literature Search Strategy

Searches were conducted across international and national scholarly databases—Scopus, Google Scholar, GARUDA, and ResearchGate—to capture both indexed and contextually relevant local studies. Boolean operators and controlled keywords were applied to cover three key dimensions: nature-based learning, socio-cultural/Islamic values, and environmental education (e.g., *"Nature School" AND "environmental education"*, *"eco-pesantren" AND "Islamic ecology"*, *"Forest School" AND "outdoor learning"*). The publication window was 2019–2025 to reflect contemporary developments of eco-pesantren and Forest School research.

3. Eligibility Criteria

Articles were eligible if they: (a) were peer-reviewed journal articles or official research reports with DOI, (b) written in English or Indonesian, (c) focused on environmental education in Nature Schools, eco-pesantren, or Forest Schools. Exclusion criteria included: non-academic sources (blogs, news), studies lacking socio-cultural/values dimension, and publications prior to 2019.

Table 1. Inclusion and Exclusion Criteria

Category	Inclusion Criteria	Exclusion Criteria
Document Type	Indexed and/or reputable journal articles, research results	Non-scientific articles, blogs, news, reports without academic references
Language	English and Indonesian	Other languages without translation
Research Context	Environmental education, Nature School, eco-pesantren, *Forest School*	Non-educational or STEM-based environmental studies without a social dimension
Year of Publication	2019–2025	Before 2019
Academic Quality	*Peer-reviewed*, or published by an official and indexed research institution has a DOI	Lack of formal academic validation

The selection process followed PRISMA's four stages: identification, screening, eligibility, inclusion, and is visualized in a PRISMA flow diagram.
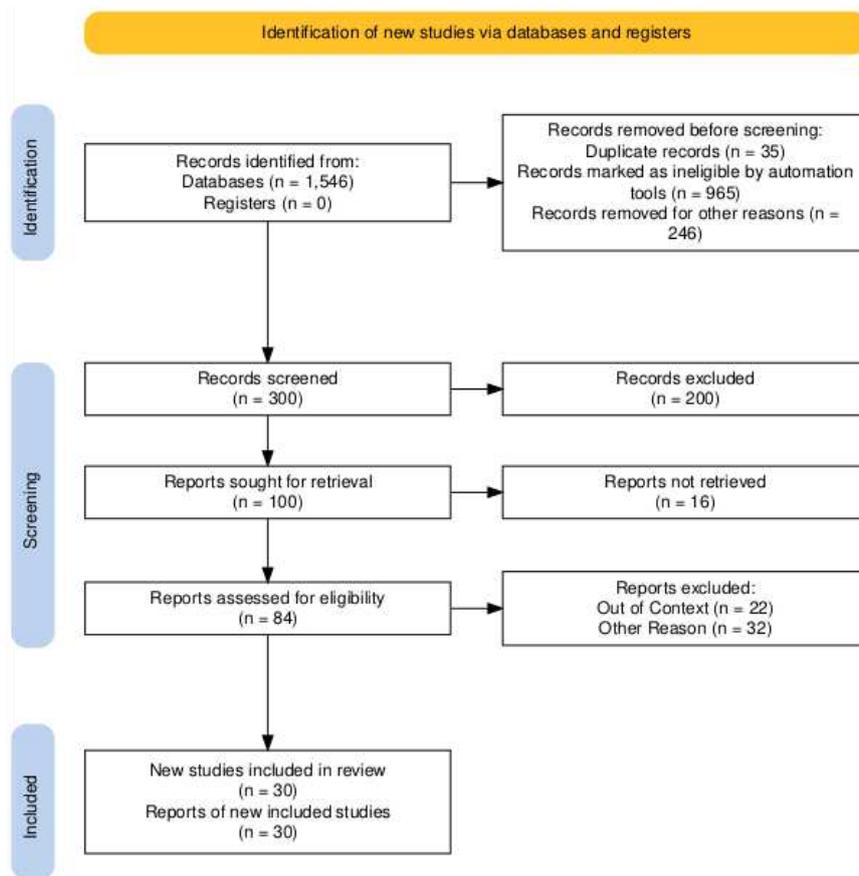
Figure 1. Processing Prism Flow Diagram
Source: Haddaway et al. (2022)

4. Data Extraction and Synthesis

Data were analyzed using Thematic Synthesis (Thomas & Harden, 2008) through three phases: (1) *Open coding* to identify recurring concepts (e.g., Islamic values, local wisdom, experiential learning, ecological character); (2) *Axial coding* to cluster themes into major categories: Islamic-based environmental education, local socio-cultural adaptation, and Forest School/outdoor pedagogy; (3) *Selective synthesis* to construct a cross-context conceptual model, illustrating the integration of spirituality, culture, and nature-based learning.

C.   RESULTS AND DISCUSSION

Well-prepared tables and or figures must be of significant feature of this section, because they convey the major observations to readers. Any information provided in tables and figures should no longer be repeated in the text, but the text should focus on the importance of the principal findings of the study. In general, journal papers will contain three-seven figures and tables. Same data can't be presented in the form of tables and figures. The results of the study are discussed to address the problem formulated, objectives and research hypotheses. It is highly suggested that discussion be focused on the why and how of the research findings can

happen and to extend to which the research finding can be applied to other relevant problems.

At the identification stage, articles were collected from four reputable databases: Scopus, Google Scholar, Garuda, and ResearchGate. Using a combination of relevant keywords, 892 publications were found in Scopus, 612 in Garuda, and 42 in Google Scholar and ResearchGate. All articles were exported in metadata format to avoid duplication and to ensure data traceability. The metadata was then analyzed using VOSviewer to map keyword relationships and identify research trends based on the main terms:
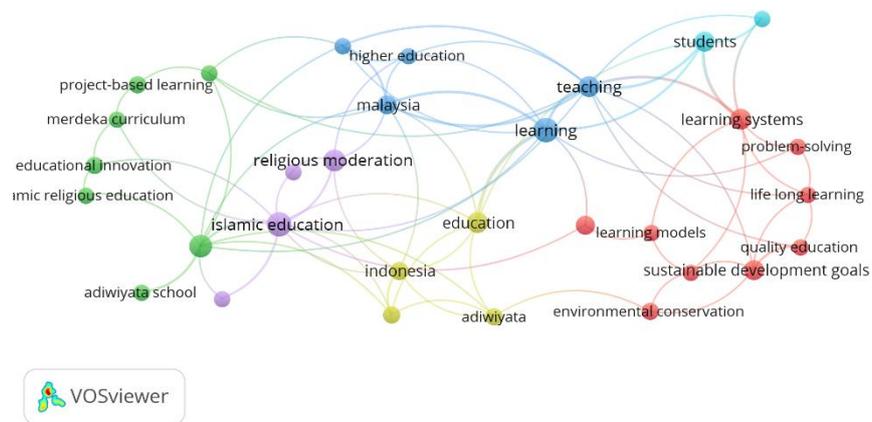

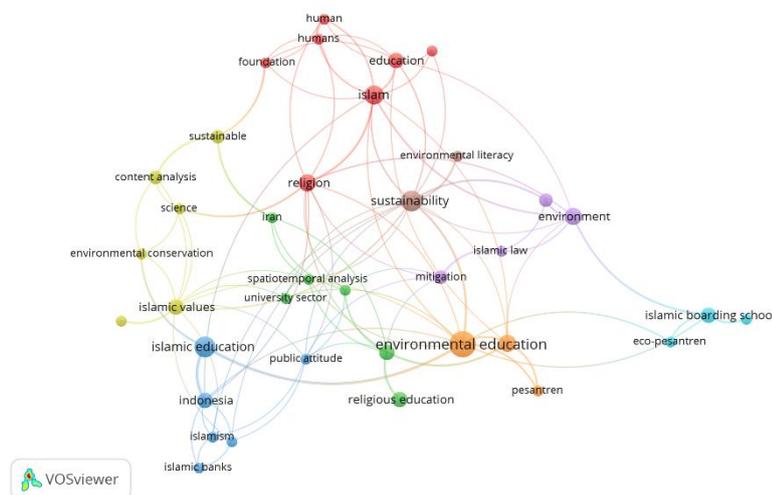**Figure 2. Keyword: "Nature School"**
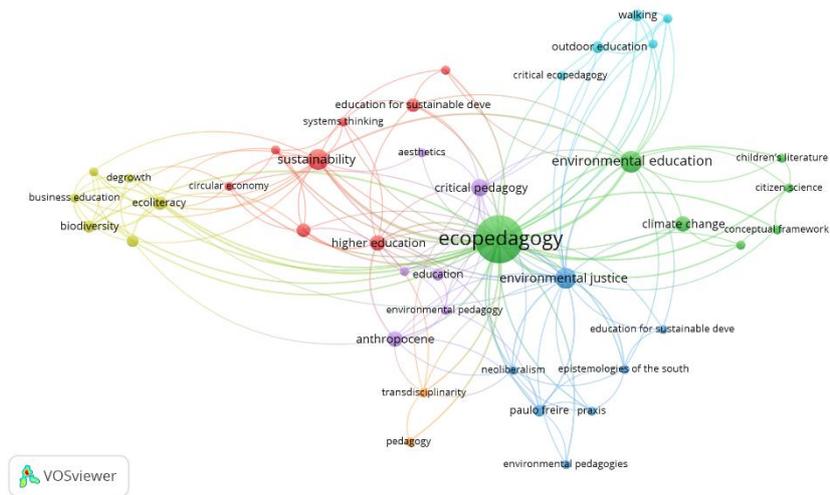

Figure 3. Keyword: "Islamic Environmental Education"
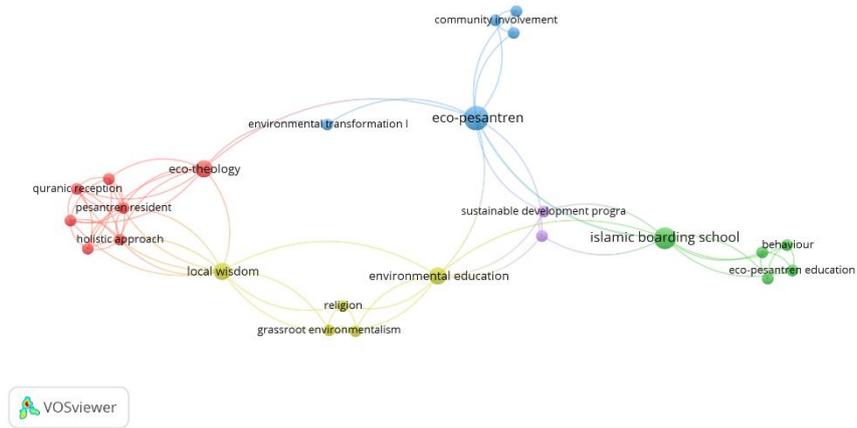
Figure 4. Keyword: "Ecopedagogy"

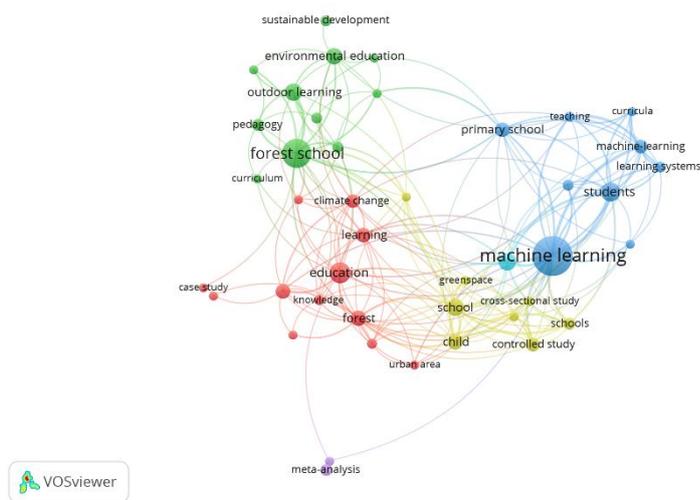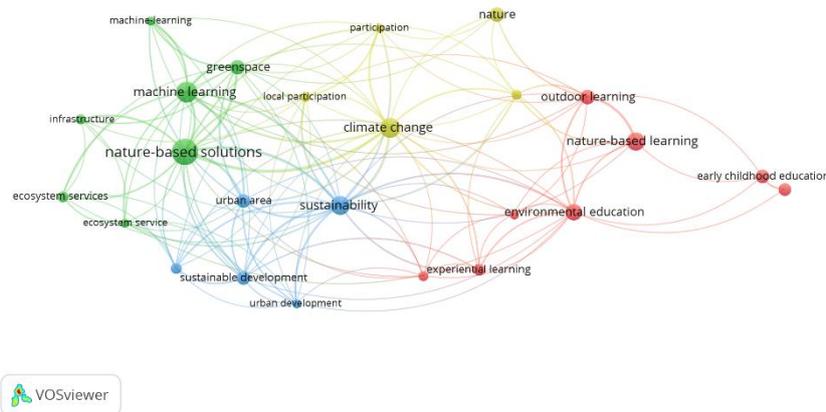**Figure 5. Keyword: "Eco Pesantren"**

Figure 6. Keyword: "Forest School"

Figure 7. Keyword: "Nature Based Education"

At the screening stage, titles and abstracts were reviewed. Articles that were unrelated to the focus—such as studies on pure ecology, STEM education, or environmental education without cultural, value, or religious dimensions—were excluded. Publications without full-text access or available only as summaries were also removed. After this process, 83 articles remained.

During the eligibility stage, full texts were examined to ensure alignment with the main focus: environmental education based on Islamic socio-cultural and spiritual values, or nature-based education models (Forest School / Nature School). Articles were evaluated based on: (a) clear publication identity (e.g., DOI); (b) peer-reviewed status, and (c) strong empirical or theoretical contribution. Articles lacking explicit relevance were excluded.

At the inclusion stage, only articles meeting all academic and thematic criteria were retained. Each article was classified based on country of context, educational model, value orientation (socio-cultural, religious, or hybrid), and main findings. From the initial 86 articles, 30 publications were selected for in-depth analysis, falling into two main categories:

1. Islamic-based environmental education (eco-pesantren, green Islamic schools).
2. Nature-based environmental education (Forest School, ecopedagogy, outdoor pedagogy, *Sekolah Alam*, Nature School).

   All selected articles were then compiled into an analytical matrix above.

The selected data represent the results of a systematic screening process using the PRISMA method, aligned with the requirements of this study and aimed at identifying the research gap. The filtered articles demonstrate a shared focus on the relationship between values, culture, spirituality, and nature-based educational practices. Articles with only moderate relevance—such as those discussing Islamic educational theory without an ecological context—were excluded from the synthesis.

This selection process ensures that the analyzed literature directly supports the study's objectives and contributes to the development of a conceptual model of environmental education grounded in Islamic values and local culture, while being

compared and integrated with the Forest School approach in European countries. Only articles with strong academic quality and explicit relevance to the topic are included in the data analysis and synthesis stage of the systematic literature review.

Table 2. Table Summary of Selected Studies Categorized by Educational Model Forest School/Nature-Based Learning in Western Countries

Author(s), Year	Country	Method/Data	Main Findings	Relevance to This Study
(Coates & Pimlott-Wilson, 2019)	UK	Qualitative, observation	Forest School strengthens autonomy, cooperation, confidence through free play.	Provides conceptual understanding of experiential nature-based learning.
(Dabaja, 2022)	Multiple Country	Systematic review	20-year synthesis: Forest School improves emotional well-being and social skills.	Shows long-term evidence of outcomes.
(Sella et al., 2023)	Multiple Country	Systematic review	Preschool participation improves executive function and mental health.	Strong evidence on psychological impacts.
(Dabaja, 2023)	Multiple Country	Literature review	Implementation barriers: policy restrictions, untrained teachers.	Identifies implementation challenges.
(Hofman-Bergholm, 2023)	Nordic	Conceptual	Nature-based education builds resilience and youth well-being.	Relevance to value-based environmental learning.
(Garden & Downes, 2023)	England	Systematic review	Lack of integration with curriculum, but strong in socio-emotional benefits.	Provides comparison with institutional context.
(Knight, Coates, Lathlean, & Perez-del-Aguila, 2024)	UK	Conceptual framework	Develops theoretical model for Forest School pedagogy.	Basis for cross-framework comparison.
(Ignell et al., 2024)	Sweden	Mapping review	Green spaces at school correlate with outdoor learning opportunity.	Supports nature-as-classroom model.
(A Armitt et al., 2025)	UK	RCT (Cluster trial)	Forest School shows better health outcomes than indoor classes.	Provides robust empirical evidence (controlled trial).
(Suharto et al., 2025)	UK & Indonesia	Comparative	"Flipped curriculum" allows students to design learning.	Bridge between Western Forest School & Indonesian context.

Table 3. Table Summary of Selected Studies Categorized by Educational Model Eco-Pesantren/Environment-Based Islamic Education

Author(s), Year	Country	Method/Data	Main Findings	Relevance to This Study
(Sulaiman & Al-Hadabi, 2021)	Multiple Country	Conceptual	Defines Islamic Environmental Education framework.	Core reference for theoretical development.
(Wakhidah & Erman, 2022)	Indonesia	Curriculum analysis	Environmental content exists but weak at implementation level.	Identifies curriculum–practice gap.
(Arifah et al., 2022)	Indonesia	Case study	Eco-pesantren drives environmental conservation activities.	Foundation for Islamic ecology practice.
(Kasanah et al., 2023)	Indonesia	Qualitative	Boarding school management supports environmental sustainability.	Highlights governance element.
(Moneim, 2023)	Multiple Country	Conceptual	Islamic green ethics rooted in Tawhid, Khalifah, Maslahah.	Theological foundation for Islamic ecopedagogy.
(Subaidi et al., 2023)	Indonesia	Case study	Eco-pesantren protects forest landscapes; combines local culture & Islamic values.	Connects ecology + local wisdom.
(Syukri et al., 2024)	Indonesia	Case study	Integration of Islamic values with environmental ethics.	Shows spiritual dimension in curriculum.
(Juliani et al., 2024)	Indonesia	Curriculum review	Environmental content embedded into Islamic learning.	Evidence of curriculum-level integration.
(Albar et al., 2024)	Indonesia	Feasibility study	Eco-pesantren as curriculum innovation.	Shows readiness for standardization.
(Zuhriyah, Hidayati, ., Ramli, &., 2024)	Indonesia	Descriptive study	Encouraging environmentally oriented madrasa	Sustainability education design in madrasa curricula
(Wati et al., 2025)	Indonesia	Quasi-experimental	Ecopedagogy improves ecological awareness.	Quantitative impact evidence.
(Bahtiar et al., 2025)	Indonesia	Case study	Incorporates eco-Sufi values into learning.	Adds spiritual–mystical dimension.
(Megasari et al., 2025)	Indonesia	Qualitative	Islamic education and SDGs alignment.	Connects with SDGs/UN policy.
(V. I. Ahmad et al., 2025)	Indonesia	Field study	Islamic values shape ecological character.	Supports conceptual model.
(Falaqi et al., 2025)	Multiple Country/ Global	Systematic Literature Review	Islamic curriculum transformation emphasizing *tauhid*, humanism, and sustainability.	Supports integration of sustainability in Islamic education.

Table 4. Table Summary of Selected Studies Categorized by Educational Model Nature School (*Sekolah Alam*) in Indonesia

Author(s), Year	Country	Method/Data	Main Findings	Relevance to This Study
(M. Ahmad, 2021)	Indonesia	Case study	Project-based learning improves independence.	Links pedagogical method with ecology.
(Widodo et al., 2024)	Indonesia	Case study	Environmental-based holistic learning strengthens character.	Advances Nature School model.
(Mia Komariah et al., 2024)	Indonesia	Qualitative	Strengthens moral and character formation.	Evidence on student character building.
(Dwi Ratnasari et al., 2025)	Indonesia	Case study	Eco-theology applied in Sekolah Alam via Qur'an literacy.	Nature School linked to Islamic values.
(Iswandayani et al., 2025)	Indonesia	Field research	Enhances learner character in Green School Jogja.	Empirical evaluation.

A systematic review of thirty articles that met the inclusion criteria produced three major findings, illustrating the relationship between Islamic socio-cultural values, nature-based environmental education models in Indonesia (Nature Schools and Eco-Pesantren), and the Forest School model in Europe. Overall, the findings indicate a shared global objective: shaping ecological character through direct interaction with nature. However, the foundation of these approaches differs—Islamic spirituality in Indonesia and ecocentric humanism in Western Forest School practices.

The first finding shows that environmental education in the Islamic context is not merely technical or instrumental, but grounded in spiritual, ethical, and theological principles. Studies by Wati et al. (2025), Juliani et al. (2024), and Moneim (2023) highlight the concept of *ecological monotheism*, emphasizing awareness that nature is God's creation. Caring for nature is therefore seen as both a spiritual practice and an act of worship. Activities such as maintaining cleanliness, gardening, and waste management are interpreted as fulfilling the human mandate as *khalifah* (stewards of the earth).

The second finding reveals that Islamic educational institutions in Indonesia have implemented concrete eco-spiritual or ecotheological practices. Research by Arifah et al. (2022), Albar et al. (2024), and Syukri et al. (2024) demonstrates how Eco-Pesantren integrate conservation, cultivation, and waste management as part of the learning process. Environmental care becomes an act of respect toward God's creation. Some pesantren also act as local conservation agents (Subaidi et al., 2023), contributing directly to ecological sustainability beyond formal education.

The third finding shows that nature-based Islamic schools apply a *learning-by-doing* approach by involving students in nature-centered projects that develop independence, collaboration, and responsibility. Ahmad (2021) and Widodo et al. (2024) note that hands-on environmental activities—such as gardening or raising animals—strengthen socio-emotional skills and ecological empathy. Dwi Ratnasari et

al. (2025) highlight that the *Living Qur'an* concept encourages ecological actions based on reflection on Qur'anic verses related to nature.

In contrast, Forest School models in Europe are rooted in a different paradigm: not religious, but centered on child agency, autonomy, and wellbeing. Coates & Pimlott-Wilson (2019) and Sella et al. (2023) report that children in Forest Schools are given freedom to explore and take risks according to their interests. Armitt et al. (2025), using a cluster randomized controlled trial, found significant improvements in children's emotional wellbeing and environmental literacy. Other studies confirm increases in creativity, resilience, and leadership (Garden & Downes, 2023; Knight, Coates, Lathlean, & Perez-del-Aguila, 2024). Although non-religious, Forest School nurtures ecological ethics through experience and self-reflection. Dabaja (2022, 2023) identifies global benefits as well as challenges such as cost, access, and dependency on facilitator competence.

In comparison, the Islamic model emphasizes transcendental values (tauhid, amanah, *maslahah*), while Forest School emphasizes humanistic-ecological values (agency, autonomy, stewardship). Yet both converge at a fundamental point: the development of emotional and cognitive connection with nature. Hofman-Bergholm (2023) and Ignell et al. (2024) emphasize that ecological awareness emerges through *embodied experiences*, not merely cognitive instruction.

Several studies also show that institutional culture and school policy play a decisive role. Bahtiar et al. (2025) found that eco-sufi values such as *zuhud* and *tawazun* reinforce sustainability in Madrasah Adiwiyata. Conversely, Wakhidah & Erman (2022) and Sulaiman & Al-Hadabi (2021) found that the national Islamic education curriculum does not yet explicitly encourage practical ecological action.

A comparative study of Forest School and Nature School in Indonesia by Suharto et al. (2025) shows that both encourage student agency through a *flipped curriculum*, where students help plan the learning process. However, Nature Schools also integrate religious values and mutual cooperation, while Forest Schools emphasize individual autonomy.

In synthesis, environmental education proves effective when nature becomes the learning environment, rather than merely the topic of instruction. Both the Islamic model and Forest School reject classroom-centered, lecture-based pedagogy. Nature becomes a learning resource, an open laboratory, and a place for ecological character formation—children *learn with nature, not just about nature*.

The reviewed literature indicates that value- and culture-based environmental education models play a strategic role in shaping environmentally responsible generations. Nature-based education integrated with Islamic spirituality offers a comprehensive alternative to global environmental education because it integrates ecology, ethics, and spirituality—dimensions not fully present in the Forest School model.

Thus, environmental education based on Islamic socio-cultural values and the Forest School approach are not contradictory, but complementary. Islamic education provides a theological foundation for ecological responsibility, while Forest School

enriches learning through autonomy, exploration, and established pedagogical frameworks.

Sekolah Alam (Nature Schools) in Indonesia position nature not merely as a learning medium, but as a living environment that nurtures students' spiritual, social, and ecological character. These schools integrate the principle of *learning by doing* through project-based activities, exploration, and direct engagement with the natural environment (M. Ahmad, 2021). Project-Based Learning fosters independence, collaboration, and responsibility—values that resonate with Islamic teachings on *amanah* (trust) and cooperation. Rather than being delivered through theoretical instruction, these values are cultivated through authentic ecological experiences.

Widodo et al. (2024) reveal that *Sekolah Alam* promotes ecological empathy by involving students directly in conservation activities, farming, waste management, and community-based initiatives. Such practices align with the concept of Islamic eco-theology, which interprets religiosity as grounded in tangible actions, including the protection of nature (Dwi Ratnasari et al., 2025). Consequently, *Sekolah Alam* in Indonesia exemplifies an environmental education model that harmonizes Islamic spirituality and local wisdom while maintaining the principles of modern pedagogy.

1. Integration of Islamic values with ecological practices in eco-pesantren

Eco-pesantren (eco-Islamic boarding schools) develop a robust model of environmental education rooted in Islamic theology. In this framework, nature is regarded as a divine trust (*amanah*), and humans as *khalifah* (stewards) are mandated to ensure its sustainability (Sulaiman & Al-Hadabi, 2021; Syukri et al., 2024). Core values such as *ihsan* (excellence), *tawazun* (balance), and *maslahah* (public good) constitute the ethical foundation of Islamic ecological principles (Arifah et al., 2022). The integration of these values transcends theoretical discourse and is manifested through practical initiatives such as forest conservation, organic agriculture, and sustainable waste management (Kasanah et al., 2023; Subaidi et al., 2023).

Furthermore, the *eco-pesantren*'s habituation programs embed ecological consciousness within acts of worship. Bahtiar et al. (2025) demonstrate that the integration of *Eco-Sufi* principles fosters ecological awareness derived from spiritual depth rather than mere compliance with religious norms. Within this paradigm, ecological behavior is conceived not simply as a moral act but as an act of worship. Hence, *eco-pesantren* education integrates spirituality, pesantren culture, and ecological practice into a cohesive ecotheological framework.

2. Implementation of socio-cultural value-based environmental education in *Forest Schools* in Europe

Forest Schools in Europe are not grounded in religious doctrines but rather in Western cultural values emphasizing freedom of exploration, autonomy, and respect for children's personal experiences (Milchem et al., 2011). Outdoor learning nurtures *agency*—the capacity of children to make decisions and take responsibility for their own learning (Knight, Coates, Lathlean, & Perez-del-Aguila, 2024). Coates and Pimlott-Wilson (2019) highlight that Forest Schools foster a sense of belonging to both

the community and the environment through structured exploration, free play, and activities involving managed risk-taking.

Empirical studies have shown that participation in Forest Schools enhances children's well-being, mental health, and self-confidence (Garden & Downes, 2023; Sella et al., 2023). This approach conceptualizes the human–nature relationship not as a spiritual obligation but as a means of fulfilling psychological and social needs. Consequently, Forest Schools position nature as a therapeutic space, a site of liberation, and a context for shaping children's social identity.

3. Synthesis of Universal Values of Nature-Based Education Model for Islamic Education in Indonesia

The conceptual model proposed in this study emerges from the central finding that effective environmental education is not solely dependent on knowledge transmission but on the integration of values, cultural contexts, and spiritual experiences that shape ecological behavior. Across the three educational models—*Sekolah Alam*, *Eco-Pesantren*, and Forest Schools—a consistent pattern emerges: ecological character develops through direct engagement with nature, supported by internalized values rather than theoretical instruction. This supports the proposition that transformative environmental education must be value-based, experience-oriented, and culture-grounded (Fauzi, 2018).

Within this model, Islamic spirituality serves as the normative foundation. Values such as *tawhid* (the awareness of divine unity and creation), *amanah* (responsibility toward the earth), *khalifah* (human stewardship), and *ihsan* (excellence in moral and ecological conduct) construct an ethical framework guiding environmental actions. These principles function not as abstract doctrines but as intrinsic motivations that transform environmental protection into a form of worship.

Building upon this spiritual foundation, the model incorporates pedagogical approaches from the Forest School tradition—particularly experiential learning, freedom of exploration, and learner agency. The Forest School demonstrates how direct interaction with nature cultivates courage, independence, and accountability. Within Islamic education, these pedagogical strategies are particularly relevant, as they encourage students to experience and embody values rather than merely memorize them. Through this approach, ecological character formation becomes an engaging, transformative, and practical process.

The final dimension of the model is grounded in local wisdom, ensuring that education remains culturally contextualized. Both *Sekolah Alam* and *Eco-Pesantren* illustrate that indigenous traditions—such as communal cooperation (*gotong royong*), sustainable agriculture, shared land management, and conservation customs—serve as effective mediators between religious teachings and ecological practices. Consequently, local wisdom acts as a transformative bridge, translating values into actionable, contextually relevant behaviors with tangible social and environmental impact. A visualization of this integrated model is presented in the figure below.
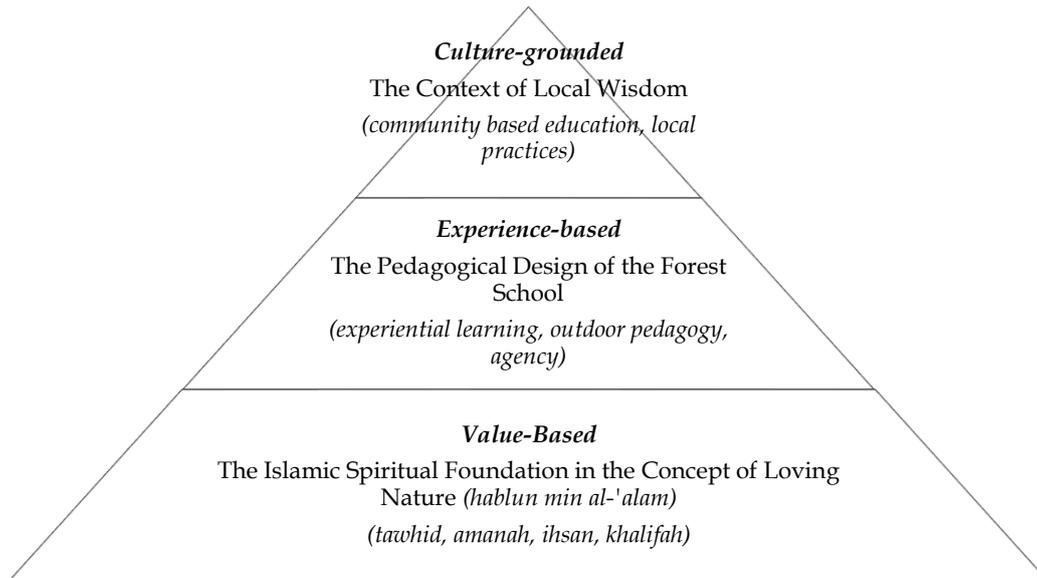
Figure 8. There are Three Layers in Value-Based, Experience-Based, and Culture-Grounded

The three components are interrelated and form an integrated system:

1. Islamic spirituality provides the *ethical rationale* for why the environment must be protected.
2. The Forest School–style experiential methodology offers a *pedagogical mechanism* for how these values are actualized in practice.
3. Local wisdom defines *the contextual domain*—where and in what cultural setting ecological actions are implemented.

Within this framework, the conceptual model redefines environmental education by shifting its paradigm from a predominantly cognitive orientation to a holistic and transformative approach. Nature is no longer perceived merely as an object of study but as a subject that educates, nurtures, and builds reciprocal relationships with learners. The ultimate goal of education, therefore, extends beyond the acquisition of environmental knowledge toward the cultivation of ecological morality—a moral character that emerges from spiritual consciousness and direct experiential engagement with the natural world.

This model further positions environmental education as an integral component of Islamic educational identity. When spirituality, experiential learning, and local culture function as a unified system, sustainability ceases to be an auxiliary program and instead becomes a way of life and a guiding principle in decision-making. Consequently, Islamic education can actively contribute to the global sustainability agenda while maintaining its distinctive theological foundation and cultural authenticity.

A synthesis of the findings reveals that, despite their diverse value contexts—Islamic spirituality, local cultural traditions, and Western educational philosophy—Nature Schools, Eco-Islamic Boarding Schools, and Forest Schools converge upon three universal principles:

**Table 5. A Universal Value Synthesis Matrix of Three Models**

Universal Value	Nature School	Eco-Pesantren	Forest School
Human–Nature Connection	Direct interaction & ecological empathy	*Amanah* & *Khalifah*	*Wellbeing* & Attachment to Nature
Agency & Learning Experience	Self-Projects and Exploration	Habitus *And* Collective Practice	Freedom-based exploration
Environmental Character & Ethics	Responsibility, Collaboration	*Ihsan, Tawazun, Eco-Spirituality*	*Stewardship, Community Belonging*

The *Nature School* emphasizes independence and active engagement; the *Eco-Pesantren* provides a spiritual foundation and ecological ethics; and the *Forest School* offers an experiential pedagogical structure that has been empirically proven to enhance well-being. When synthesized and integrated, these three models form a unified framework for environmental education that positions ecological values, lived experiences, and concrete actions as an inseparable whole.

Collectively, they constitute the Islamic Socio-Cultural and Nature-Based Environmental Education Model—a framework that integrates Islamic spirituality, local wisdom, and Forest School–inspired pedagogical practices to cultivate a holistic ecological consciousness grounded in faith, social ethics, and experiential learning. This conceptual model directly addresses the central research question, demonstrating that the most effective form of environmental education does not merely transmit *knowledge about nature* but nurtures an *emotional, spiritual, and social attachment to nature*, which ultimately fosters sustained behavioral transformation.

The findings of this research are expected to contribute significantly to the theoretical development of both environmental education and Islamic education. The synthesis indicates that transformations in students' ecological behavior cannot be adequately explained by knowledge-based approaches alone, which primarily emphasize the transfer of environmental information. In contrast, ecological behavior emerges through the internalization of values that occurs when spirituality, direct experience in nature, and cultural context are meaningfully integrated within the learning process.

Furthermore, this study extends Kolb's (1984) Experiential Learning Theory by incorporating the dimension of Islamic eco-spirituality as an intrinsic motivational force driving ecological action. In this revised perspective, experiential learning functions not only to develop skills and reflective capacity but also to foster a faith-based transcendental consciousness—a deep sense of *tawhid* (divine unity), *amanah* (responsibility), and *khalifah* (stewardship)—that directly influences ecological decision-making and ethical conduct.
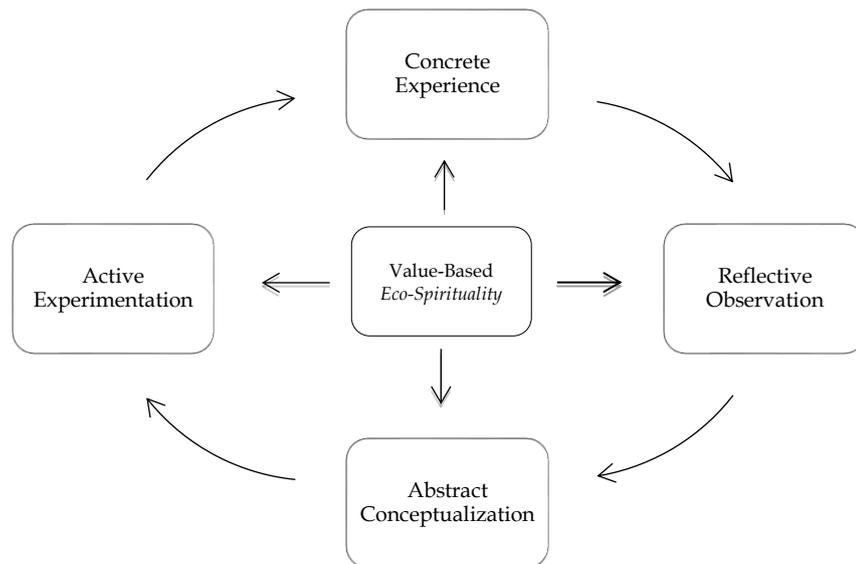
Figure 9. Kolb's Cycle of Experiential Learning plus Value-Based (Eco-Spirituality) Model

In addition, the resulting model contributes significantly to the literature on value internalization theory, demonstrating that the process of internalizing values does not occur through lectures or moral instruction alone, but through experience, habituation, and modeling within a specific social and cultural context. This model thus advances the understanding that *values are not taught—they are experienced*, and that experience itself serves as a mediating bridge between values and actions.

By synthesizing the perspectives of Islamic eco-spirituality, nature-based experiential pedagogy (as exemplified by the Forest School), and local wisdom, this study offers an alternative epistemological model that challenges the dominance of Western paradigms in environmental education, which tend to be secular, individualistic, and cognitively oriented. The primary theoretical contribution of this research, therefore, lies in presenting a value, culture, and spirituality-based conceptual framework for environmental education—one that explains both *why* and *how* sustainable ecological behavior is formed and maintained over time.

Meanwhile, the practical contribution of this study lies in the formulation of an environmental education model that can be directly adopted by Islamic educational institutions, educators, and policymakers. The proposed conceptual model provides a tangible direction for intervention at the levels of curriculum design, pedagogical practice, and institutional management.

1. For teachers and education practitioners: This model offers pedagogical guidance indicating that environmental learning must shift from a lecture-based approach toward nature-based experiential learning. Activities such as nature exploration, community-driven projects, waste management initiatives, and school gardening serve as effective media for the internalization of ecological and moral values. In this paradigm, teachers are repositioned not as transmitters of knowledge but as facilitators of meaningful learning experiences.

2. For schools and Islamic boarding schools (*pesantren*): The model provides scientific and theological justification that sustainability should not be regarded as an auxiliary or decorative program (e.g., a "green school" initiative), but rather as an essential identity and institutional culture. Sustainability becomes embedded through consistent habituation and institutional practice, rather than through isolated modules or extracurricular activities.

3. For governments and policymakers: The findings of this study support the development of an environmental education curriculum in Indonesia that is both religiously grounded and culturally rooted, while remaining consistent with the global principles of sustainability and *Education for Sustainable Development (ESD)*. The integration of spirituality, local culture, and experiential learning provides a strategic policy pathway for strengthening the implementation and localization of ESD within national education systems.

D.   CONCLUSION

This study concludes that nature-based education in Indonesia and Europe shares a common emphasis on direct engagement with nature to foster ecological awareness, while differing substantially in its underlying value orientations. *Sekolah Alam* and *eco-pesantren* integrate experiential learning with Islamic ethical principles, such as *amanah*, *ihsan*, and *khalifah*, through practices including farming, conservation, and community participation, with *eco-pesantren* further institutionalizing environmental stewardship as an extension of worship that unites spirituality and sustainability. In contrast, European Forest Schools emphasize learner agency, exploration, and wellbeing, reflecting humanistic educational traditions that position nature as an active partner in learning. Across all models, nature functions not merely as instructional content but as a formative environment shaping moral, emotional, and behavioral dispositions. Synthesizing these insights, the study proposes the Islamic Socio-Cultural and Nature-Based Environmental Education Model as a holistic framework that integrates Islamic spirituality, experiential pedagogy, and local wisdom to support sustainability-oriented learning. While offering a conceptual contribution to contemporary Islamic environmental education, the study remains limited by the absence of empirical validation, indicating the need for future qualitative and field-based research to examine implementation dynamics, behavioral outcomes, and cross-cultural applicability of the proposed model.

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