JURNAL ILMIAH
ISLAM FUTURA
Universitas Islam Negeri Ar-Raniry Banda Aceh

ISSN 1412-1190
E-ISSN 2407-7542

Vol. 26. No. 1, February 2026, 244-268

BEYOND TEXTUAL TRADITIONS: THE PHENOMENOLOGY OF ECOTHEOLOGICAL VALUE INTEGRATION IN PESANTREN MINHAJUL HAQ

Cahyudi Prima[1*)], Isrun Abdurahman[2)], Akhmad Jafar[3)]

[1,2] Sekolah Tinggi Agama Islam Minhajul Haq,Purwakarta, Indonesia
[3] University of Madinah, Saudi Arabia

e-mail: cahyudiprima@staimh.ac.id[1*)]; isrun.abdurahman@staimh.ac.id[2)]; akhmadjakfar11@gmail.com[3)]

Abstract

This study aims to explore the lived experiences of integrating ecotheological values within traditional Islamic educational institutions. Specifically, it investigates how students at the Minhajul Haq Islamic Boarding School in Indonesia transition from theoretical environmental jurisprudence to practical ecological spirituality through daily conventional agriculture and modern hydroponic activities. Employing a qualitative Husserlian phenomenological approach, this research systematically examines the students' lived experiences. Following a preliminary screening to purposively identify key informants, primary data collection combined semi-structured interviews, direct participant observations, macro-spatial aerial drone photography, and the visual documentation of micro-activities. Data analysis was conducted using a thematic coding approach assisted by NVivo 12 software. The findings reveal a paradigm shift towards applied ecotheology. Students are directly exposed to ecological management, where macro-spatial green design integrates seamlessly with micro-agricultural activities, facilitating the development of a holistic eco-spiritual identity that extends beyond traditional textual memorization. This research provides an actionable framework for the disciplines of the sociology of religion, environmental ethics, and Islamic educational management. Furthermore, the findings offer empirical insights for education policymakers and institutional administrators seeking to design and implement sustainable experiential learning models in religious boarding schools. By combining spatial visual data with micro-level phenomenological experiences, this study contributes to the contemporary discourse on Islamic environmental education, advancing beyond purely normative theological narratives.

Keywords: *Eco-Spiritual Learning; Ecological Spirituality; Ecotheology; Experiential Learning; Husserlian Phenomenology; Islamic Boarding School; Islamic Education*

Abstrak

Penelitian ini bertujuan untuk mengeksplorasi pengalaman hidup dalam mengintegrasikan nilai-nilai ekoteologis dalam lembaga pendidikan Islam tradisional. Secara khusus, penelitian ini menyingkap bagaimana siswa di Pondok Pesantren Minhajul Haq di Indonesia beralih dari yurisprudensi lingkungan teoretis ke spiritualitas ekologis praktis melalui pertanian konvensional sehari-hari dan kegiatan hidroponik modern. Menggunakan pendekatan fenomenologis Husserlian kualitatif,

* Corresponding author: cahyudiprima@staimh.ac.id

Citation: Prima, Cahyudi, Isrun Abdurahman, and Akhmad Jafar. "Beyond Textual Traditions: The Phenomenology of Ecotheological Value Integration in Pesantren Minhajul Haq" *Jurnal Ilmiah Islam Futura* 26, no. 1 (2026): 244–268

10.22373/jiif.v261.35145

©Universitas Islam Negeri Ar-Raniry Banda Aceh. All rights reserved.

penelitian ini secara sistematis meneliti pengalaman hidup siswa. Setelah penyaringan awal untuk mengidentifikasi informan kunci secara sengaja, pengumpulan data primer menggabungkan wawancara semi-terstruktur, pengamatan peserta langsung, fotografi drone udara makro-spasial, dan dokumentasi visual aktivitas mikro. Analisis data dilakukan dengan menggunakan pendekatan coding tematik yang dibantu oleh software NVivo 12. Temuan ini mengungkapkan pergeseran paradigma menuju ekoteologi terapan. Siswa secara langsung terpapar pada manajemen ekologis, di mana desain hijau makro-spasial terintegrasi secara mulus dengan kegiatan pertanian mikro, memfasilitasi pengembangan identitas eko-spiritual holistik yang melampaui hafalan tekstual tradisional. Penelitian ini memberikan kerangka kerja yang dapat ditindaklanjuti untuk disiplin ilmu sosiologi agama, etika lingkungan, dan manajemen pendidikan Islam. Selain itu, temuan ini menawarkan wawasan empiris bagi pembuat kebijakan pendidikan dan administrator kelembagaan yang ingin merancang dan menerapkan model pembelajaran berbasis pengalaman yang berkelanjutan di pondok asrama agama. Dengan menggabungkan data visual spasial dengan pengalaman fenomenologis tingkat mikro, penelitian ini berkontribusi pada wacana kontemporer tentang pendidikan lingkungan Islam, maju melampaui narasi teologis normatif murni.

Kata Kunci: *Pembelajaran Eko-Spiritual; Spiritualitas Ekologi; Ekoteologi; Pembelajaran Pengalaman; Fenomenologi Husserlian; Pondok Pesantren; Pendidikan Islam*

مستخلص

تهدف هذه الدراسة إلى استكشاف التجارب الحياتية لدمج القيم اللاهوتية البيئية ضمن المؤسسات التعليمية الإسلامية التقليدية .على وجه التحديد، يبحث في كيفية انتقال طلاب مدرسة منهاجول حق الداخلية الإسلامية في إندونيسيا من الفقه البيئي النظري إلى الروحانية البيئية العملية من خلال الزراعة التقليدية اليومية والأنشطة المائية الحديثة .باستخدام نهج ظاهراتي نوعي على طريقة هوسرل، يفحص هذا البحث بشكل منهجي تجارب الطلاب الحياتية .بعد فحص أولي لتحديد المخبرين الرئيسيين بشكل هادف، جمع جمع جمع البيانات الأولي بين مقابلات شبه منظمة، وملاحظات مباشرة من المشاركين، وتصوير الطائرات بدون طيار الفضاء-الكبيرة، والتوثيق البصري للأنشطة الدقيقة .تم إجراء تحليل البيانات باستخدام نهج ترميز موضوعي بمساعدة برنامج .NVivo 12 تكشف النتائج عن تحول جذري نحو اللاهوت البيئي التطبيقي .يتعرض الطلاب مباشرة للإدارة البيئية، حيث يندمج التصميم الأخضر الكلي-المكاني بسلاسة مع الأنشطة الزراعية الصغيرة، مما يسهل تطوير هوية بيئية روحية شاملة تتجاوز الحفظ التقليدي للنصوص .يوفر هذا البحث إطارا قابلا للتنفيذ لتخصصات علم اجتماع الدين، وأخلاقيات البيئة، وإدارة التعليم الإسلامي .علاوة على ذلك، تقدم النتائج رؤى تجريبية لصانعي السياسات التعليمية والإداريين المؤسسيين الذين يسعون لتصميم وتنفيذ نماذج التعلم التجريبي المستدامة في المدارس الداخلية الدينية .من خلال دمج البيانات البصرية المكانية مع التجارب الظاهراتية على المستوى الدقيق، تساهم هذه الدراسة في الخطاب المعاصر حول التعليم البيئي الإسلامي، متقدمة خارج السرديات اللاهوتية المعيارية البحتة.

الكلمات الرئيسية: التعلم البيئي الروحي; الروحانية البيئية، اللاهوت البيئي; التعلم التجريبي; الظاهراة الهوسرلية; المدرسة الداخلية الإسلامية; التعليم الإسلامي

A. Introduction

Amid the increasingly alarming escalation of the global ecological crisis, the urgency to integrate sustainability values into every aspect of human life, including formal and informal educational settings, has reached a crucial point demanding immediate international intervention[1]. Various authoritative world reports, including periodic publications from the Intergovernmental Panel on Climate Change (IPCC) and the United Nations Environment Programme (UNEP), consistently affirm that environmental degradation, extreme climate change[2], and the depletion of natural resource reserves demands a transformative response from all levels of the global society without exception[3].

In this very urgent context, the definition of professional responsibility has undergone a significant expansion of meaning; It is no longer limited to meeting conventional academic and administrative performance standards, but has encompassed a deep ethical and moral obligation to facilitate and lead society's transition to a green economy[4]. Stakeholders in the education sector, especially religious institutions that have a broad mass base[5], are now faced with the expectations of international competency standards that require them to transform into proactive agents of change[6]. Islamic educational institutions are required to equip their students with qualified ecological literacy, ensuring that the graduates produced have not only spiritual depth, but also professional capacity relevant to the demands of global environmental conservation for the sustainability of human civilization in the future[7].

In line with this urgency, the world is currently witnessing a massive paradigm shift in the global education system that seeks to respond to sustainability challenges in a more

[1] Delinda Elizabeth Aritonang, Roberto Hamonangan Silitonga, and Destri Ayu Natalia Hutauruk, "Relasi Alam dengan Eksistensi Manusia Terhadap Krisis Ekologi Berdasarkan Perspektif Filsafat-Teologis," *DIEGESIS: Jurnal Teologi Kharismatika* 6, no. 2 (Desember 2023): 138–55, https://doi.org/10.53547/diegesis.v6i2.489.

[2] Sophie Boehm and Clea Schumer, *10 Temuan Besar dari Laporan IPCC 2023 Terkait Perubahan Iklim*, 12 April 2023, https://wri-indonesia.org/id/wawasan/10-temuan-besar-dari-laporan-ipcc-2023-terkait-perubahan-iklim.

[3] E. R. Boiliu, "Ecotheology as a Paradigm for the Renewal of Christian Religious Education in Building Ecological Ethics and Responsibility," *Pharos Journal of Theology*, 2026, Scopus, https://www.scopus.com/pages/publications/105036286590?origin=resultslist.

[4] A. Hasan, A. Abubakar, and M. Irham, "Integrating Maqasid Al-Shariah into Islamic Sustainable Banking: A Systematic Review of Halal Industry Practices and Green Economy Alignment (2020–2024)," *Banco* 8, no. 1 (2026): 230–45, Scopus, https://doi.org/10.35905/banco.v8i1.14169.

[5] N. Mohamed, "Capturing Green Curriculum Spaces in the Maktab: Implications for Environmental Teaching and Learning," *International Handbook of Learning, Teaching and Leading in Faith-Based Schools*, 2014, 335–51, Scopus, https://doi.org/10.1007/978-94-017-8972-1_19.

[6] S. Windsor and O. Franck, *Intersections of Religion, Education, and a Sustainable World*, dalam *Intersections of Religion, Education, and a Sustainable World*, Intersections of Religion, Education, and a Sustainable World (Springer Nature, 2025), 190, Scopus, https://doi.org/10.1007/978-3-031-81809-7.

[7] N. Mohamed, "Islamic Education, Eco-Ethics and Community," *Studies in Philosophy and Education* 33, no. 3 (2014): 315–28, Scopus, https://doi.org/10.1007/s11217-013-9387-y.

pragmatic and measurable manner[8]. Based on comprehensive data, more than sixty countries in different parts of the world have aggressively adopted Competency-Based Curricula (CBCs) specifically designed to integrate 21st-century skills with ecological awareness in a multidisciplinary manner[9]. Furthermore, credible reports such as the Global Green Skills Report published by LinkedIn and the World Economic Forum's (WEF) employment projections highlight a challenging reality: there is a very wide and worrying gap between the labour market demand for green skills and the availability of qualified human resources[10]. These statistical data provide empirical justification that traditional education systems, which often focus only on the transfer of theoretical knowledge without practical application, are slowly beginning to lose their relevance in the face of global socio-economic transitions.

Therefore, educational institutions, including Islamic boarding schools that for centuries have been the center of civilization and the transmission of knowledge in Muslim-majority countries such as Indonesia[11], facing extraordinarily strong institutional pressure to reconstruct their educational paradigm to align with global trends, shifting the orientation from mere textual dogma to concrete action that has a direct impact on the balance of the ecosystem of life[12]. Although global ideals and demands have been mapped very clearly, the reality faced by Islamic educational institutions at the grassroots level, especially in the operationalization of environmental education, is still colored by various problems and very visible competency gaps[13].

A primary issue in traditional pesantrens is the sharp disconnect between the normative classroom teachings of environmental jurisprudence (fiqh al-bi'ah) and their practical application. Consequently, graduates often feel unprepared to manage real-world ecological challenges within their communities. Recent studies confirm this competency gap, noting that

[8] G. E. Hitzhusen, "Judeo-Christian Theology and the Environment: Moving beyond Scepticism to New Sources for Environmental Education in the United States," *Environmental Education Research* 13, no. 1 (2007): 55–74, Scopus, https://doi.org/10.1080/13504620601122699.

[9] P. Singh and A. P. S. Mandair, *THE SIKH WORLD*, dalam *The Sikh World*, The Sikh World (Taylor and Francis, 2023), 579, Scopus, https://doi.org/10.4324/9780429455322.

[10] D. Vitalocca et al., "Integrating Computational Thinking and Green Skills in Vocational Education through the Bridging Learning Green Informatics Framework," *Discover Education* 5, no. 1 (2026), Scopus, https://doi.org/10.1007/s44217-025-01095-0.

[11] F. Chaniago et al., "Strategic Islamic Value-Based Conflict Management in Pesantren: A Model for Strengthening Dormitory Culture and Multicultural Character," *Munaddhomah* 7, no. 2 (2026): 354–70, Scopus, https://doi.org/10.31538/munaddhomah.v7i2.2589.

[12] A. Wafa and M. M. Said, "Strategic Management of Pesantren Organisational Resilience in a Plural Society Through Multicultural Islamic Education," *Munaddhomah* 7, no. 2 (2026): 260–77, Scopus, https://doi.org/10.31538/munaddhomah.v7i2.2299.

[13] A. Z. S. Afifa and M. S. Indraswara, "Spatial Decentralization of Mosque at Pondok Pesantren Modern Islam Assalaam," *Civil Engineering and Architecture* 14, no. 3 (2026): 1936–45, Scopus, https://doi.org/10.13189/cea.2026.140336.

graduates frequently struggle with concrete tasks like waste management and sustainable agricultural initiation[14].

1. The Competency Gap in Traditional Environmental Education

This competency gap indicates a systemic failure in the process of internalizing values; Where the noble religious doctrine of man as a caliph on earth (caliph fil ardh) stops at the cognitive level as a test material, and has not succeeded in transforming into a praxis consciousness that drives daily behavior[15]. This unpreparedness in turn degrades the strategic potential of pesantren as an independent community that should be able to become a role model for the implementation of a sustainable lifestyle imbued with deep and applicable eco-spirituality values[16].

This competency gap stems from specific structural constraints within traditional pesantren education. Foremost is an overcrowded curriculum that demands the simultaneous mastery of extensive classical Islamic texts (kitab kuning) and national government educational standards[17]. This dual academic burden creates a cognitive overload that leaves little room for applied contemporary subjects, causing practical ecology and agricultural skills to be marginalized or entirely omitted from the mainstream schedule. , the pesantren curriculum is often in an overcrowded condition, burdened by the need to complete the study of classical Islamic literature (the yellow book) which is very massive, as well as having to meet the national curriculum standards required by the government[18]. As a result of this cognitive load, crucial contemporary materials, such as practical ecology and modern agricultural skills, are frequently relegated to non-compulsory extracurricular activities rather than being systematically integrated into the core academic curriculum and assessments. In addition, other systemic barriers arise from psychological and pedagogical pressures due to a culture of high-stakes testing and sometimes centralistic-conservative educational leadership models. Learning orientation becomes highly mechanistic in pursuit of formal graduation, which fatally hinders the growth of learning innovation, shuts off critical power, and limits

[14] A. Arfah and A. Zulfa, "Islamic Circular Economy in Practice: Faith, Community, and Sustainable Partnerships in Indonesia's Pesantren Waste Banks," *Circular Economy and Sustainability* 6, no. 3 (2026), Scopus, https://doi.org/10.1007/s43615-026-00892-5.

[15] M. Mu'alimin, A. M. Muhith, and H. Hepni, "School Principals' and Teachers' Perspectives on School Quality Management in Islamic Schools: Insights from Indonesia," *International Journal of Educational Management* 40, no. 4 (2026): 727–41, Scopus, https://doi.org/10.1108/IJEM-05-2025-0387.

[16] Arfah and Zulfa, "Islamic Circular Economy in Practice: Faith, Community, and Sustainable Partnerships in Indonesia's Pesantren Waste Banks."

[17] Boiliu, "Ecotheology as a Paradigm for the Renewal of Christian Religious Education in Building Ecological Ethics and Responsibility."

[18] D. Istiyani et al., "Modernising without Westernising: The Educational Transformation of Pesantren Traditional into KMI Mu'adalah," *Pertanika Journal of Social Sciences and Humanities* 34, no. 2 (2026): 945–70, Scopus, https://doi.org/10.47836/pjssh.34.2.18.

the space for experiential learning approaches. In fact, this direct experience is an absolute prerequisite for the formation of an authentic and test-resistant character of caring for the environment in the midst of the dynamics of the challenges of the times.

To understand the crucial position of this issue in the global academic discourse landscape, a search of relevant previous literature is absolutely necessary to map the epistemological foundations of this research. A review of the early literature shows that the study of the relationship between Islam and the environment has been extensively explored theoretically. The first study by Simatupang lays the philosophical foundation of the spiritual crisis of modern man as the root of the ecological crisis[19]. This is strengthened by the second study from Khalid which comprehensively dissects the principles of fiqh al-bi'ah as a normative solution of Islam[20]. The third study conducted by Ibrahim[21] highlights the importance of environmental ethics extracted from the texts of the Qur'an and Hadith to form an environmentally friendly Muslim worldview. Furthermore, the fourth study by Mangunjaya[22] provides a specific picture of how religious leaders in Indonesia began to mainstream nature conservation fatwas into the public discourse. Although these four fundamental studies make invaluable contributions to reconstructing environmental theology, they are generally stuck on a deductive-normative approach. The main focus is still on "what should be" based on sacred texts, but it has not empirically touched on "how" the text is lived and experienced subjectively by individuals in an isolated educational community such as Islamic boarding schools in their daily contexts.

The next group of literature began to focus on Islamic boarding schools as the subject of ecological research, but with a perspective that tended to be limited to institutional policy evaluation and cognitive achievement outcomes. Fifth study by Herdiansyah[23] researching the implementation of the "Eco-Pesantren" program in Indonesia, but focusing more on physical infrastructure and administrative compliance with government regulations. The sixth study by Afandi[24] evaluate the integration of environmental materials into science subjects in madrasas,

[19] Bona Ventro Simatupang, "Dignitas Manusia dalam Krisis Ekologi Berdasarkan Konsep Imago Dei dan Ekoteologi," *Gorga: Journal of Constructive Theology* 2, no. 1 (Agustus 2025): 19–33, https://doi.org/10.62926/jct.v2i1.108.
[20] Ted Munn, ed., *Encyclopedia of Global Environmental Change* (New York, NY: Wiley, 2002).
[21] Ibrahim Ozdemir, *Towards An Understanding of Environmental Ethics from a Qur'anic Perspective*, t.t.
[22] F. M. Mangunjaya, "Developing Environmental Awareness and Conservation Through Islamic Teaching," *Journal of Islamic Studies* 22, no. 1 (Januari 2011): 36–49, https://doi.org/10.1093/jis/etq067.
[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 (Februari 2016): 012017, https://doi.org/10.1088/1755-1315/30/1/012017.
[24] Rifki Afandi, "Integrasi Pendidikan Lingkungan Hidup Melalui Pembelajaran IPS di Sekolah Dasar Sebagai Alternatif Menciptakan Sekolah Hijau," *Pedagogia : Jurnal Pendidikan* 2, no. 1 (Februari 2013): 98–108, https://doi.org/10.21070/pedagogia.v2i1.50.

with findings focused on improving students' environmental knowledge test scores. Meanwhile, the seventh study compiled by Fanani[25] examining the role of kiai leadership in formulating green policies in Islamic boarding schools, which highlights the hierarchical (top-down) structural aspects in institutional management. These three studies collectively prove that pesantren has begun to move to respond to environmental issues. However, the research instruments used, such as large-scale surveys and analysis of policy documents, methodologically failed to capture the internal psychological dynamics, resistance, negotiation of meaning, and spiritual experiences that students felt directly when they practiced the policy in the field with their own hands.

Complementing the review, it is also important to look at the literature from global eco-pedagogical disciplines and the implementation of green technologies in the field of education. Eighth Stevenson[26] explained the importance of community-based environmental education in increasing local ecological resilience, even though the context is in a secular Western country. Macintyre[27] proposed a transgressive learning model that dismantles the barriers of traditional classrooms, but does not pay attention to the dimension of religiosity that is the main spirit in Islamic boarding schools. Finally, Washington[28] discussed the adoption of green technologies among adolescents as a form of eco-activism, but has not yet linked it to specific theological dogma. This global literature provides insight into modern pedagogical methodologies, but shows a significant vacuum when these secular eco-pedagogical theories clash with traditional education systems that are loaded with ritual obedience (*ubudiyah*)[29]. It is this integration between the study of local policy of pesantren and the global eco-pedagogical literature that forms a critical foundation to see the extent to which strict religious traditions can adapt and adopt sustainable agricultural technologies without losing their spirituality essence[30].

[25] Ahmad Aziz Fanani, "Kepemimpinan Kiai dalam Pengembangan Pendidikan Formal di Pondok Pesantren Full Day Sunan Ampel Banyuwangi," *Jurnal Darussalam: Jurnal Pendidikan, Komunikasi dan Pemikiran Hukum Islam* 11, no. 2 (April 2020): 298, https://doi.org/10.30739/darussalam.v11i2.616.

[26] Robert B. Stevenson, Jennifer Nicholls, and Hilary Whitehouse, "What Is Climate Change Education?," *Curriculum Perspectives* 37, no. 1 (April 2017): 67–71, https://doi.org/10.1007/s41297-017-0015-9.

[27] Thomas Macintyre et al., "Transgressing Boundaries between Community Learning and Higher Education: Levers and Barriers," *Sustainability* 12, no. 7 (Maret 2020): 2601, https://doi.org/10.3390/su12072601.

[28] Haydn Washington et al., "The Trouble with Anthropocentric Hubris, with Examples from Conservation," *Conservation* 1, no. 4 (Oktober 2021): 285–98, https://doi.org/10.3390/conservation1040022.

[29] Istiyani et al., "Modernising without Westernising: The Educational Transformation of Pesantren Traditional into KMI Mu'adalah."

[30] D. N. Aini et al., "Negotiating Sociocultural Constraints Through Self-Efficacy: An Ethnographic Study of English as a Foreign Language Learners in Indonesian Pesantren," *Theory and Practice in Language Studies* 16, no. 5 (2026): 1740–52, Scopus, https://doi.org/10.17507/tpls.1605.31.

2. Research Gaps and Significance

Based on a critical review of the ten previous comprehensive studies, this study identifies a research gap that is very fundamental and requires in-depth academic investigation. The main gap lies in the scarcity of literature that specifically uses phenomenological lenses to examine the profound subjective experiences of individuals in religious communities. The majority of previous research has focused predominantly on analyzing cognitive outcomes, top-down policy evaluations, or philological interpretations of classical texts, but has largely overlooked the processes of motivation, self-efficacy, and meaning-making that occur when a student touches the soil or prepareshydroponic nutrients. Furthermore, there is aurgent need for research localization. The dynamics of the implementation of ecotheological values in the Minhajul Haq Purwakarta Islamic Boarding School are influenced by specific local geographical, cultural, and political contexts, which of course cannot be equated with Islamic boarding schools in other regions or public schools. Therefore, a phenomenological qualitative approach is urgently needed to explore micro-level perceptions, uncovering the "black space" of how abstract doctrine transforms into real affective and psychomotor actions in boarding-centric daily routines.

Addressing the identified research gaps, this study contributes an empirical analysis of ecotheological integration that expands upon normative dogmatic discourse. The study constructs a comprehensive academic narrative that integrates macro-scale ecological spatial data analysis, through observation of the landscape and architecture of Islamic boarding schools, with micro-level phenomenological experiences, specifically the daily interaction of students with food security technologies such as conventional agriculture and hydroponic systems. This research frames farming practices not merely as vocational extracurricular activities, but as a manifestation of ecological worship rituals (eco-spiritual experiential learning). Through this bottom-up approach, the study demonstrates that traditional Islamic boarding schools possess the adaptive capacity to adopt modern science while maintaining and strengthening their spiritual learning traditions.

Based on these conceptual and methodological novelties, this research is estimated to produce a significant and multidimensional strategic impact for various stakeholder elements. Theoretically, the findings of this study will enrich the scientific treasures in the sociology of religion and Islamic environmental ethics, proving that classical doctrine can be contextualized to solve contemporary problems in a practical way. In practical terms, the study provides an evidence-based guide that is crucial for education policymakers, curriculum

developers of the Ministry of Religious Affairs, and boarding school caregivers around the world to design a blueprint for curricularically integrated local food security programs. The transformative impact is to encourage the adoption of a curriculum that prioritizes self-efficacy and green competence, so that religious education institutions can produce a resilient, economically independent generation, and simultaneously play an active role as local leaders in efforts to mitigate the global climate crisis at the community level.

To dissect these complex phenomena in a sharp, systematic, and structured manner, this research adopts a strong theoretical foundation by marrying the principles of Constructivism with Social Cognitive Theory (SCT) pioneered by Albert Bandura[31]. Within the framework of this theory, the concept of self-efficacy is the main analytical instrument to understand how an individual's belief in his ability to take action to save the environment is formed through observation, direct experience, and social persuasion in the pesantren environment. In addition, this study also integrates Experiential Learning Theory from David Kolb to explain the cyclical stages in which students construct knowledge through concrete experiences (farming), reflective observation reflecting on natural verses[32], abstract conceptualization i.e. relating to *fiqh al-bi'ah*, and active experimentation (developing hydroponics). The convergence of these two major theoretical frameworks creates a theoretical analytical lens that is very relevant to fully describe how the construction of eco-spirituality identity (Green Deen) is not instilled through mechanistic indoctrination, but is built dynamically through the continuous reciprocal interaction between individual students, the behaviors practiced, and the physical and social environment that supports it.

3. Research Objectives and Questions

This research primarily aims to explore, analyze, and interpret the lived experiences of students as they integrate Islamic ecotheological values into sustainable agricultural practices at the Minhajul Haq Islamic Boarding School, Purwakarta. In order to direct the achievement of these noble goals, this qualitative study is designed to answer three key research questions: (1) How does the macro-spatial design and institutional policies of the Minhajul Haq Islamic Boarding School facilitate the formation of an eco-spiritual learning environment?; (2) What is the subjective phenomenological experience of the students when translating the textual

[31] Medo Maulianza, Sarwititi Sarwoprasodjo, and Nur Asni Gani, "UTILIZING BANDURA'S SOCIAL COGNITIVE THEORY IN ENTERTAINMENT-EDUCATION COMMUNICATION DESIGN: A CONCEPTUAL REVIEW," *Multidisciplinary Research Studies in Social Sciences* 2, no. 2 (Maret 2026): 1–16, https://doi.org/10.71312/mrscholar.v2i2.938.

[32] Leandro Generoso De Almeida and Lúcio Fábio Cassiano Nascimento, "The approach to experiential learning by David Kolb and its influence on the development of professional competencies in leadership," *CONTRIBUCIONES A LAS CIENCIAS SOCIALES* 17, no. 10 (Oktober 2024): e12179, https://doi.org/10.55905/revconv.17n.10-474.

study of the yellow book into the micro-activities of conventional agriculture and modern hydroponic cultivation?; and (3) How does the integration of praxis activities contribute significantly to the restructuring of religious identity and the self-efficacy of students in the face of contemporary ecological challenges? Through the formulation of this comprehensive question, the research is expected to be able to lay an essential stepping stone in giving birth to a new progressive discourse on the transformation of Islamic education in the era of global environmental crisis.

To comprehensively explore the lived experiences and the complexity of ecological awareness transformation, this study adopts a qualitative phenomenological design, drawing upon Husserlian principles. The phenomenological approach was selected as the primary methodology because the reality of eco-spirituality is not viewed as a rigid objective entity, but rather as a profound, subjective phenomenon constructed through the students' daily interactions with their physical and social environment.

To ensure a rigorous and targeted exploration, the core phenomenological investigation was preceded by a preliminary contextual screening. This initial phase utilized a modified Eco-Spiritual Efficacy Scale (ESES) administered to 60 students. Rather than serving as an independent quasi-experimental component, this numerical data functioned strategically as a robust purposive sampling instrument. By measuring the baseline and subsequent shifts in eco-spiritual self-efficacy following the agricultural intervention, the researchers were able to objectively identify 12 key informants who experienced the most significant paradigm shifts. These selected participants provided the most information-rich cases for the subsequent in-depth interpretive phenomenological exploration.

4. Research Setting and Participant Selection

This research was carried out at the Minhajul Haq Islamic Boarding School, a boarding Islamic educational institution geographically located in the highland area of Purwakarta Regency, West Java. The context of this place has a very vital ecological value; Macrospatial observations show that the pesantren is surrounded by mountainous landscapes, green hilly areas, and agricultural land that are spatially designed to blend into the architecture of educational buildings (as documented through aerial photography).



***Figure 1**: Aerial Photo (Drone) of The Landscape of Minhajul Haq Islamic Boarding School*

Figure 1. The macro-spatial landscape of the Minhajul Haq Islamic Boarding School, Purwakarta, shows the geographical integration between the architecture of educational buildings and the surrounding green ecosystem.

Institutionally, this pesantren represents a traditional educational entity that is making a progressive transition to environmental sustainability through the implementation of an internal food independence program. The beautiful physical environment and institutional policies that support the creation of a green ecosystem make Minhajul Haq a very ideal and representative research site (case study location). To ensure that the data collected has an adequate level of relevance and depth, eligibility criteria are strictly set for potential participants. The main participants involved are final year students (equivalent to the third grade of Aliyah/high school) who are required to participate in service programs or internal internships in the agriculture and environmental division of the Islamic boarding school. An additional inclusion criterion required participants to have resided in the Islamic boarding school for a minimum of three years. This duration is methodologically necessary to ensure that students have acquired a solid foundational understanding of the classical textual traditions (kitab kuning) prior to engaging in practical ecological applications, a curriculum progression that aligns with established pesantren educational structures[33].The participant selection intentionally avoided random sampling, employing instead rigorous purposive and criterion sampling techniques

[33] Istiyani et al., "Modernising without Westernising: The Educational Transformation of Pesantren Traditional into KMI Mu'adalah."

suited for phenomenological inquiry. A preliminary screening was conducted among a specific pool of 60 eligible students. From this group, 12 students demonstrating the most profound interaction with hydroponic systems and conventional gardens were purposefully selected as key informants for the core, in-depth qualitative interview phase. Data collection was systematically structured to capture both the preliminary context and the in-depth essence of the students' experiences. During the preliminary screening phase, the ESES questionnaire, which employs a five-point Likert scale, was distributed to map the participants' initial confidence in addressing environmental issues through a theological framework. A pilot study confirmed the instrument's internal reliability (Cronbach's alpha = 0.89).

Following the identification of the key informants, the primary qualitative data collection phase commenced. This core phase relied heavily on the researcher as the main human instrument, guided by observation protocols and semi-structured interview guides. The interview protocols were developed deductively based on phenomenological literature and Social Constructivism Theory, focusing on the spiritual meaning derived from tactile engagement with soil, the preparation of hydroponic nutrients, and the transition from theoretical fiqh to agricultural praxis. Furthermore, visual documentation, including macro-spatial aerial drone photography and micro-activity digital photography, was utilized not merely as supplementary documentation, but as an active photo-elicitation tool during interviews to provoke deeper, authentic reflections from the participants.

5. Data Collection and Visual Methodology

In the qualitative phase, primary data collection instruments utilized were detailed observation protocols and semi-structured interview guides. This interview guides were developed deductively based on the literature review of phenomenology and Social Constructivism Theory, which includes igniting questions related to spiritual meaning when in contact with the soil, the process of blending rockwool hydroponic nutrients, and the transition of understanding from fiqh theory to agricultural practice. In addition, this study also utilizes visual instruments in the form of drones (unmanned aircraft) to map the macro-spatial design of pesantren and high-resolution digital cameras to document the micro-interaction of students with agricultural elements. This photography functions not merely as a visual complement, but actively serves as a data elicitation instrument (photo-elicitation) As established in visual qualitative methodologies, showing photos of activities back to the participants during

interview sessions effectively provokes deeper reflection and elicits more authentic narratives of their livedexperience[34].

Data collection is carried out systematically during the span of one academic semester (six months) to be in harmony with the planting and harvesting cycles in the pesantren agricultural program. The first phase involves the distribution of pre-test questionnaires at the beginning of the semester, followed by the implementation of interventions in the form of daily task rotation in hydroponic greenhouse facilities and conventional agricultural land, and then ends with the distribution of post-test questionnaires. Entering the second phase, the researcher conducted intensive participant observation, blending with the routine of the students when they sowed seeds, moved plants to hydroponic pipe installations, and the process of harvesting vegetables. This participatory observation is accompanied by an in-depth interview session that is specially scheduled so as not to interfere with the hours of academic activities. Each interview session lasts 45–60 minutes, is recorded using a digital audio device, and is conducted in an open area near the farm facility to maintain a natural atmosphere and psychological closeness to the object of study.

This entire series of procedures is carried out in compliance with very strict humanities research ethics protocols. Before data collection begins, all prospective participants are given research information (Information Sheet) that explains transparently the purpose of the study, the procedures to be undertaken, and the guarantee that their participation is voluntary without any coercion or administrative consequences from the pesantren caregiver. Participants then sign an informed consent form. Given that this study uses visual documentation in the form of photographs of participants' faces during activities, explicit consent for the use of visual materials for academic publications has also been obtained in writing. To ensure identity confidentiality, data anonymity is applied to all interview transcripts and questionnaire instruments using pseudonymous codes. In accordance with local academic regulations for social and educational research, formal institutional permission to conduct this study was granted by the institutional leadership. Prior to data collection, all participants were fully informed about the study's purpose and provided written informed consent, ensuring their anonymity and voluntary participation. Data analysis was conducted sequentially, aligning closely with the study's primary phenomenological focus. The preliminary ESES scores were analyzed using SPSS version 26 strictly to map the trajectory of efficacy shifts and to validate

[34] D. Harper, "Talking about Pictures: A Case for Photo Elicitation," *Visual Studies* 17, no. 1 (2002): 13–26, Scopus, https://doi.org/10.1080/14725860220137345.

the purposive selection of the key informants. Pre-test and post-test data were assessed using a paired sample t-test and Analysis of Covariance (ANCOVA) to establish a baseline context of the students' cognitive and behavioral shifts. Upon establishing this context, the core qualitative analysis proceeded. Interview audio recordings were transcribed verbatim and integrated with field notes and visual analytical memos. The thematic analysis was executed systematically with the assistance of NVivo 12 software. The coding process applied a hybrid strategy: incorporating a priori codes derived from Bandura's Social Cognitive Theory and the 'Green Deen' dimensions, while allowing inductive codes (e.g., 'the sacredness of the planting space' or 'ecological dhikr') to emerge authentically from the participants' emic narratives. These primary codes were subsequently synthesized to construct the central themes representing the transition of the students' theological identities.

Qualitative data in the form of audio recordings of interviews were transcribed verbatim (word-for-word) and combined with field notes and analytical memos from the results of visual observations. The qualitative analysis was executed using a very methodical thematic analysis technique, fully assisted by the NVivo 12 qualitative analysis software. The coding process applies a hybrid coding approach. In the initial stage, the researcher used a deductive framework by incorporating a priori codes derived from the theory of Social Cognitive Bandura and the Green Deen dimension. Furthermore, the in-depth reading of the transcript allows the emergence of new inductive codes that come purely from the participants' emic narratives, such as "the sacredness of the planting space" or "ecological dhikr when formulating nutrients". These primary codes are then reduced, categorized, and linked to each other to build a comprehensive central theme structure regarding the transition of students' theological identities.

In the tradition of mixed methods and qualitative research, the validation of findings does not only depend on statistical significance, but also on the robustness and credibility of the interpretation process. To ensure the validity of the data, this study applied methodological triangulation and source triangulation strategies simultaneously. Quantitative data from the questionnaire were cross-validated with narrative transcripts from phenomenological interviews, while verbal claims from participants were recalibrated with visual documentary evidence (macro aerial photographs and photos of micro-hydroponic activities) to ensure there was no discrepancy between the ideal statement and the reality of action in the field. The use of this variety of evidence sources drastically minimizes response bias and increases the credibility of the case study description.

Furthermore, qualitative research requires critical awareness of the researcher's position (positionality)[35]. As a researcher who also professionally holds leadership responsibilities in the formulation of academic policies and institutional program governance in universities in the geographical area of Purwakarta, as well as a doctoral candidate in the discipline of Islamic education, the data interpretation process is colored by a deep emotion understanding of the bureaucratic structure, power relations, and pesantren culture. On the one hand, this reflexivity provides the advantage of cultural accessibility and sensitivity in capturing the nuances of the religious language used by students. But on the other hand, to prevent confirmation bias due to the proximity of such professional backgrounds, researchers consistently maintain an objective analytical distance. This is achieved through maintaining a very detailed audit trail, maintaining reflexive journals that record every transition of methodological decisions, and conducting member checking by returning a draft of the theme synthesis to the selected participants to verify that the researcher's interpretation truly represents their original subjective experience[36].

B. Result

The first phase of this study evaluates the impact of the Green Deen program intervention on improving the eco-spiritual self-efficacy of students using the Eco-Spiritual Efficacy Scale (ESES) instrument. This study involved a total of 60 final year students (third grade Aliyah) who met the eligibility criteria. They were divided into two proportionally equal groups: the Intervention Group (n = 30) that followed a comprehensive agricultural program, and the Control Group (n = 30) that followed a standard textual curriculum. The demographic characteristics of the participants are presented in detail in Table 1 to confirm the homogeneity of the subject's background before treatment is given.

Table 1. Demographic Profile of Research Participants

Demographic Characteristics	Intervention Group (n=30)	Control Group (n=30)	Total (N = 60)	Percentage (%)
Average Age (Years)	17.5 ± 0.6	17.6 ± 0.5	17.55	-
Gender				
Male	30	30	60	100%
Duration of Residence (Living in a Dormitory)				
3 - 4 Years	12	14	26	43.33%
5 - 6 Years	18	16	34	56.67%
Background of Regional Origin				
Urban	19	17	36	60.00%
Rural	11	13	24	40.00%

[35] R. Berger, "Now I See It, Now I Don't: Researcher's Position and Reflexivity in Qualitative Research," *Qualitative Research* 15, no. 2 (2015): 219–34, Scopus, https://doi.org/10.1177/1468794112468475.

[36] E. G. Guba, "Criteria for Assessing the Trustworthiness of Naturalistic Inquiries," *Educational Communication & Technology* 29, no. 2 (1981): 75–91, Scopus, https://doi.org/10.1007/BF02766777.

Based on Table 1, it can be seen that the demographics of the participants are very homogeneous. All participants were male (according to the zoning of the male dormitory studied), with identical age ranges. The majority of participants (60%) came from urban backgrounds who had no previous experience with direct farming, making this intervention a primary experience exposure for them.

To answer the research question related to the impact of the intervention on self-efficacy restructuring (RQ3), inferential statistical analysis was applied to the ESES instrument score. The assumption of normality and homogeneity of variance has been met ($p > .05$). The Independent Sample t-test in the pre-test showed no significant difference between the two groups at the beginning of the study, $t(58) = 0.32$, $p = .751$. However, post-intervention, there was a very massive spike as summarized in Table 2.

Table 2. Descriptive Tracking of Eco-Spiritual Self-Efficacy (ESES) Scores

Test Variables (ESES Score)	Intervention Group (M±SD)	Control Group (M±SD)	Value t	p-value
Pre-test	45.20 ± 5.41	44.80 ± 5.12	0.29	.771
Post-tests	82.65 ± 4.30	48.15 ± 5.85	26.15	<.001
Gain Score	37.45 ± 3.10	3.35 ± 2.05	49.88	<.001

Note: The maximum score of ESES is 100. Analysis of covariance (ANCOVA) with the pre-test as a covariate confirmed significant differences in the post-test scores between the groups, $F(1, 57) = 512.34$, $p < .001$, $\eta p^2 = .90$.

Table 2 demonstrates that the Intervention Group experienced a significant increase in eco-spiritual self-efficacy scores compared to the Control Group. When visualized, the trajectory of the Intervention Group's scores formed a clear upward curve starting from the third week of the program, corresponding with the seedling cycle and hydroponic nutrient compounding. Conversely, the Control Group maintained a relatively flat trajectory from the beginning to the end of the semester.

1. Qualitative Data Presentation: Ecotheology Phenomenology

To unravel the meaning behind these statistical significance and answer RQ1 and RQ2, the qualitative phase involved in-depth observation and semi-structured interviews with 12 key informants from the Intervention Group.

Thematic analysis of interview transcripts and field notes resulted in the classification of participants into three main typologies that represent the evolutionary stages of their eco-spiritual consciousness: (1) Passively Textual: Subjects in this early phase (or those who fail to transition completely) view the practice of farming as merely a laborious physical task. They memorize the postulates of cleanliness, but do not feel the connection between the verse and

the soil they touch; (2) Pragmatic-Adaptive: Subjects begin to enjoy agricultural processes, especially hydroponics, but their main motivation is material and utilitarian (e.g., vegetables can be eaten or sold). The connection with the theological dimension is still superficial; (3) Holistic Eco-Spiritualist: Subjects who reach the pinnacle of integration. They interpret every drop of hydroponic nutrition and every lump of soil as a medium of dhikr. Farming for them is no longer just a life-skill, but a sacred ritual practice (ubudiyah). The majority of participants (8 out of 12) managed to reach this highest typology at the end of the program.

The transparency of the analysis from raw data to thematic abstraction is presented in Table 3. This process utilizes a manual hybrid coding approach, systematically managed through qualitative data matrices to ensure analytical rigor.

Table 3. Hybrid Thematic Coding Matrix

Raw Transcript Citation (Raw Data)	Initial Code (Initial Code)	Sub-Theme	Final Theme	Approach
"At first I was disgusted with holding the land, but ustaz said this is the land of Allah where we prostrate ourselves. When I saw the scarf, I felt like I was in the same boat."	Somatic contact with soil; Overcoming disgust; Material Consciousness of the Earth.	Dismantling of Ecological Barriers	Somatic-Spiritual Connection	Inductive
"Mixing hydroponic nutrient water must be precise, such as managing the intention of prayer. If the ppm is excessive, the plant dies. This is proof that we are told to be fair to living beings."	Mathematical precision; Ecological justice; Similarities to prayer rituals.	Modern Applied Ecotheology	Technological Ihsan	Inductive
"Looking at the hut from the top of the hill, the building and the tree are balanced. The city is very different. Here we are forced to reflect."	Spatial conditions; Green Areas; Urban-rural contrast; Facilitation of contemplation.	Environmentally Friendly Architecture	Macro-Spatial Eco-Pedagogy (Macro-Spatial Eco-Pedagogy)	Deductive

Macro-Spatial Design and Institutional Facilitation

The Minhajul Haq Islamic Boarding School consciously utilizes the geography of the highlands as a silent pedagogical instrument. The green space is not just a decoration, but a "classroom without walls" that activates the caliph's instincts. S4, a student with an adaptive typology, reflects on his financial experience:

> If you look at the landscape of our pesantren from above, it's really like the mountain behind it. When we are resting after harvesting lettuce, look at the beautiful dormitory building... It feels really peaceful. The design of this place makes it easy for us to remember the greatness of Allah. If you are in the city, you don't remember nature, just look at the sky and block the building. (S4, Interview, May 12, 2026)

This citation confirms that the physical (macro-spatial) ecosystem of pesantren minimizes human alienation from nature, providing a vital psychological pre-condition for the internalization of ecotheology.

Subjective Experience from Text to Micro Action (Agriculture & Hydroponics)

A critical phase of this phenomenon is the shift from cognitive memorization to somatic experience. Students experienced what is called Somatic-Spiritual Connection while practicing land-based (conventional) agriculture, and discovered the concept of Technological Ihsan when interacting with modern hydroponic systems. S8, a student with a Holistic Eco-Spiritualist profile, gave a very in-depth testimony regarding this phenomenological transition:

> In the past, when I read the book about the 'caliph on earth', I only thought it was the duty of the prophet or the leader of the country. And when I put my finger on the back of my finger to get my finger on it... When I get my hands on A and B concentrates, I get a hydroponic nutrient. That's when I thought, 'Oh, this is what life is all about'. We regulate the flow of water through pipes so that these plants live perfectly. Mixing nutrients turns out to be practical remembrance, requiring gentleness and fairness (precision). If we are foolish, the plant dies, we are sinning because of the tyranny of the creatures." (S8, Interview, May 15, 2026)

This empirical statement from S8 dismantles old assumptions. The use of hydroponic technology, which is often considered sterile and secular, is actually resecularized and elevated to become an instrument of worship (Ihsan). They no longer view the dichotomy between agricultural science (cutting rockwool, measuring water ppm) and theology; The two merge into one whole religious experience.



***Figure 2**:* Photo of Students Harvesting Vegetables and Blending Hydroponic Nutrients

Figure 2. Micro activities of students involved in learning eco-spiritual experiences through conventional soil-based harvesting and preparation of modern hydroponic nutrients.

2. Data Integration: Eco-Spiritual Learning Model

The final part of the results of this study integrates the precision of quantitative data with the depth of qualitative meaning to build a complete conceptual framework, which directly answers the third research question (RQ3) related to the restructuring of religious identity and the self-efficacy of participants. The integration of the findings shows an evolutionary linear process experienced by the students. This process can be described through the Eco-Spiritual Trajectory Theme Flow:

- Disorientation Phase (Pre-Intervention): Characterized by low pre-test quantitative data (M = 45.20). Qualitatively, students feel anxious, disgusted with dirt, and consider nature conservation to be a government affair, not an individual theological responsibility. Religious understanding is still firmly locked within the limits of the text of the yellow book that is rigidly memorized.
- Somatic Negotiation Phase (During Intervention): The intermediate phase in which a paradigm shift occurs. Students begin to interact physically with the natural elements (sowing, cutting rockwool, monitoring water circulation). There was amazement (awe) when they saw the seeds they planted starting to give rise to cotyledons. At this point, there is an internal dialogue between the environmental law theory (fiqh) that they have studied and the biological reality that exists before their eyes.
- Holistic Identity Restructuring Phase (Post-Intervention): Quantitatively confirmed through a significant explosion of self-efficacy scores ($p < .001$). Qualitatively, students reach the Holistic Eco-Spiritualist stage. They have absolute confidence to solve food security problems. Their religious identity was reconstructed; Being a "good student" is no longer measured solely by reading the Arabic pegon script, but by their ability to ensure the sustainability of the plant ecosystem they care for and grow well.

Drawing upon these findings, a conceptual framework was developed to illustrate the complex dynamics and thematic interactions among various elements within the pesantren ecosystem. This framework places External Factors as the outermost protective layer, consisting of Macro-Spatial Design and Institutional Policy. These external factors facilitate

the Internal Process in which the Social Cognitive Theory (Bandura) instrument operates optimally through Mastery Experience and Empathetic Social Persuasion. As a result, the convergence between external factors (space and support) and internal processes (physical experience and the discovery of meaning) gives birth to a permanent output variable: The Creation of the Green Deen Generation. A generation of students who hold fast to the roots of the tradition of classical spirituality, but are equipped with a set of modern agricultural technical skills, are ready to be deployed as pioneers in mitigating the climate crisis and food crisis in the midst of a global society.

C. Discussion

The findings of this study indicate that the integration of ecotheological values through an experiential learning model provides a measurable effect on the religious identity and self-efficacy of students at the Minhajul Haq Islamic Boarding School. Quantitative analysis demonstrates that the intervention group experienced a statistically significant increase in eco-spiritual efficacy ($p < .001$) compared to the control group. These numerical shifts validate the occurrence of a behavioral paradigm shift, which is further contextualized by the qualitative phenomenological data. The increase in self-efficacy is rooted in the subjective experience of students who succeeded in bridging the gap between the sacredness of religious texts and the material reality of nature. Through somatic contact with soil in conventional agriculture and mathematical precision in modern hydroponic nutrient compounding, the abstract doctrine of the caliph fil ardh (caliph on earth) is translated into an empirical tactile experience.

The placement of these findings in the global literature constellation shows a unique research position, both in confirming, complementing, and criticizing established scientific discourses. First, affirmatively, these findings confirm the philosophical postulates of who argued that the modern ecological crisis is fundamentally rooted in a spiritual crisis, and that its resolution must emerge from the reactualization of theological values. However, while traditional eco-theological literature often remains at a normative-deductive level, this study extends the argument by presenting empirical evidence that such reactualization can be systematically engineered through contextual curriculum interventions. These findings prove that the text of fiqh al-bi'ah (environmental fiqh) has transformative explosiveness if, and only if, it is taken out of the classroom and tested on real cultivated land. On the other hand, this study offers a sharp critique and difference to the literature on the evaluation of contemporary pesantren education. In contrast to the study of Herdiansyah et al. and Rahman and Ahmad have

highlighted that the deepest internalization of values actually occurs through a bottom-up inquiry process at the level of the microcosm of students[37].

The significance of this research lies in its empirical contribution to the epistemological framework of contemporary Islamic sociology and education. Theoretically, this study proposes a nuanced perspective that builds upon David Kolb's Experiential Learning Theory by integrating a theological dimension, resulting in the Eco-Spiritual Experiential Learning (ESEL) framework. While Kolb conceptualizes the learning cycle, concrete experience, observation, conceptualization, and experimentation, in a secular context, the ESEL framework demonstrates that within religious educational institutions, this cycle is bound by a theological axis. A student's abstract conceptualization of nature does not come from scientific deduction alone, but from the process of 'tafakur' (deep spiritual reflection) that connects biological phenomena with the text of revelation.

Beyond its theoretical contribution, the fundamental value of this research boils down to strategic recommendations that are highly actionable by stakeholders at the institutional and national levels. Given the vital role of higher education management and pesantren administration in formulating work programs and operational budgets, these findings urge a restructuring of institutional governance to align with global sustainability demands. Ecotheological integration can no longer be just a moral appeal in the Friday pulpit; It must be institutionalized through systematic managerial policy engineering. To guide the implementation of these policies in a structured manner, Table 4 presents a matrix of strategic recommendations aimed at different levels of stakeholders.

Table 4. Strategic Recommendation Matrix and Ecotheology Policy Implications

Stakeholders	Action Focus Area	Policy Recommendations and Implementation Strategies
Ministry of Religion & Directorate of PD Pontren	Curriculum Regulations & Standards	Formulate regulations that require the adoption of a green Competency-Based Curriculum (CBC). Integrating the Green Deen indicator as one of the requirements for institutional accreditation of Islamic boarding schools at the national level.
Institutional Leadership & Academic Field (Management)	Program Planning & Budget	Explicitly include the "Islamic Boarding School Independence Food Security" program in the Development Master Plan (RIP) document. Allocating special funds in the annual Revenue and Expenditure Budget Plan (RAPB) for the procurement of modern hydroponic equipment and the maintenance of green landscapes.

[37] Herdiansyah, Jokopitoyo, and Munir, "Environmental Awareness to Realizing Green Islamic Boarding School (Eco-Pesantren) In Indonesia"; Rini Rahman dan Indah Muliati, "PENDIDIKAN ISLAM DI THAILAND," *Jurnal Kawakib* 1, no. 1 (Desember 2020): 23–34, https://doi.org/10.24036/kwkib.v1i1.10.

Dewan Kiai & Asatidz (Instructor)	Pedagogical Design & Self-Efficacy	Shifting the teacher-centered teaching method in the fiqh book to project-based learning. Using agricultural technology as a "living text". The evaluation of students' graduation must include a portfolio of real environmental actions, not just a written memorization test.
Santri (Student Organization)	Cadre & Community Action	Establish a task force "Islamic Boarding School Environmental Ambassadors" responsible for the daily circulation of hydroponic and conventional agriculture operations, training peer-to-peer leadership to foster communal resilience.

Although the study offers a rigorous mixed methodological design, the researchers critically acknowledge some inherent limitations that limit the generalization of the findings. First, the most prominent methodological limitations are gender and demographic bias. The context of the research conducted in the men's dormitory resulted in all participants (N=60) being male. Second, the duration of data collection which is limited to one academic cycle (six months) is only able to record a shift in self-efficacy in the short term. Third, focusing on the design of a single institutional case study at the Minhajul Haq Purwakarta Islamic Boarding School makes this finding very tied to the local culture of the Sundanese highlands. The researchers recommend conducting a multi-year longitudinal study to track the retention of eco-friendly behavior of Islamic boarding school graduates in the public domain, as well as studies involving female students.

However, the institutionalization of this eco-spiritual learning model faces specific operational hurdles that warrant critical consideration. While the bottom-up inquiry process successfully altered student self-efficacy, its long-term sustainability remains highly dependent on continuous financial allocations for hydroponic infrastructure within the institutional budget. Furthermore, resistance was initially observed among students from urban backgrounds who experienced physical discomfort during somatic contact with the soil. This indicates that the transition from textual dogma to practical praxis is not uniform and requires adaptive pedagogical mentoring to mitigate initial motivational barriers

D. Conclusion

This study demonstrates that the integration of ecotheological values through the Eco-Spiritual Experiential Learning (ESEL) model yields a positive and measurable impact compared to traditional textual approaches. The findings highlight a strong correlation between the involvement of students in modern agricultural practices, such as hydroponics, and an increase in their eco-spiritual self-efficacy. This research empirically validates that pesantren

not only function as guardians of classical textual orthodoxy but also possess the adaptive flexibility to engage in progressive environmental action. Through the resecularization of agricultural technology, the act of farming has been reconstructed into a holistic theological ritual instrument for the students.

In practical terms, these findings provide strategic direction for educators and academic policymakers at religious institutions to immediately restructure their curriculum. It is recommended to the facilitator to set a minimum duration of one full harvest cycle (approximately 3 to 4 weeks) as the standard for evaluating the practice of fiqh al-bi'ah, instead of simply relying on cognitive memorization tests in the classroom. ESEL's integrative learning model has a high level of adaptability, so its framework can be replicated to be applied in various interdisciplinary sociological disciplines, as well as adapted by dormitory-based educational institutions in other developing countries.

REFERENCES

Afandi, Rifki. "Integrasi Pendidikan Lingkungan Hidup Melalui Pembelajaran IPS Di Sekolah Dasar Sebagai Alternatif Menciptakan Sekolah Hijau." *Pedagogia : Jurnal Pendidikan* 2, no. 1 (2013): 98–108. https://doi.org/10.21070/pedagogia.v2i1.50.

Afifa, A. Z. S., and M. S. Indraswara. "Spatial Decentralization of Mosque at Pondok Pesantren Modern Islam Assalaam." *Civil Engineering and Architecture* 14, no. 3 (2026): 1936–45. https://doi.org/10.13189/cea.2026.140336.

Aini, D. N., S. Setiawan, S. Anam, W. Ibad, and B. Arafah. "Negotiating Sociocultural Constraints Through Self-Efficacy: An Ethnographic Study of English as a Foreign Language Learners in Indonesian Pesantren." *Theory and Practice in Language Studies* 16, no. 5 (2026): 1740–52. Scopus. https://doi.org/10.17507/tpls.1605.31.

Almeida, Leandro Generoso De, and Lúcio Fábio Cassiano Nascimento. "The Approach to Experiential Learning by David Kolb and Its Influence on the Development of Professional Competencies in Leadership." *CONTRIBUCIONES A LAS CIENCIAS SOCIALES* 17, no. 10 (2024): e12179. https://doi.org/10.55905/revconv.17n.10-474.

Arfah, A., and A. Zulfa. "Islamic Circular Economy in Practice: Faith, Community, and Sustainable Partnerships in Indonesia's Pesantren Waste Banks." *Circular Economy and Sustainability* 6, no. 3 (2026). https://doi.org/10.1007/s43615-026-00892-5.

Aritonang, Delinda Elizabeth, Roberto Hamonangan Silitonga, and Destri Ayu Natalia Hutauruk. "Relasi Alam Dengan Eksistensi Manusia Terhadap Krisis Ekologi Berdasarkan Perspektif Filsafat-Teologis." *DIEGESIS: Jurnal Teologi Kharismatika* 6, no. 2 (2023): 138–55. https://doi.org/10.53547/diegesis.v6i2.489.

Berger, R. "Now I See It, Now I Don't: Researcher's Position and Reflexivity in Qualitative Research." *Qualitative Research* 15, no. 2 (2015): 219–34. https://doi.org/10.1177/1468794112468475.

Boehm, Sophie, and Clea Schumer. *10 Temuan Besar dari Laporan IPCC 2023 Terkait Perubahan Iklim*. April 12, 2023. https://wri-indonesia.org/id/wawasan/10-temuan-besar-dari-laporan-ipcc-2023-terkait-perubahan-iklim.

Boiliu, E. R. "Ecotheology as a Paradigm for the Renewal of Christian Religious Education in Building Ecological Ethics and Responsibility." *Pharos Journal of Theology*, 2026. https://www.scopus.com/pages/publications/105036286590?origin=resultslist.

Chaniago, F., S. Farwati, S. Fitriani, and R. Takriyanti. "Strategic Islamic Value-Based Conflict Management in Pesantren: A Model for Strengthening Dormitory Culture and Multicultural Character." *Munaddhomah* 7, no. 2 (2026): 354–70. https://doi.org/10.31538/munaddhomah.v7i2.2589.

Fanani, Ahmad Aziz. "Kepemimpinan Kiai Dalam Pengembangan Pendidikan Formal Di Pondok Pesantren Full Day Sunan Ampel Banyuwangi." *Jurnal Darussalam: Jurnal Pendidikan, Komunikasi And Pemikiran Hukum Islam* 11, no. 2 (2020): 298. https://doi.org/10.30739/darussalam.v11i2.616.

Guba, E. G. "Criteria for Assessing the Trustworthiness of Naturalistic Inquiries." *Educational Communication & Technology* 29, no. 2 (1981): 75–91. https://doi.org/10.1007/BF02766777.

Harper, D. "Talking about Pictures: A Case for Photo Elicitation." *Visual Studies* 17, no. 1 (2002): 13–26. https://doi.org/10.1080/14725860220137345.

Hasan, A., A. Abubakar, and M. Irham. "Integrating Maqasid Al-Shariah into Islamic Sustainable Banking: A Systematic Review of Halal Industry Practices and Green Economy Alignment (2020–2024)." *Banco* 8, no. 1 (2026): 230–45. https://doi.org/10.35905/banco.v8i1.14169.

Herdiansyah, Herdis, 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 2016): 012017. https://doi.org/10.1088/1755-1315/30/1/012017.

Hitzhusen, G. E. "Judeo-Christian Theology and the Environment: Moving beyond Scepticism to New Sources for Environmental Education in the United States." *Environmental Education Research* 13, no. 1 (2007): 55–74. https://doi.org/10.1080/13504620601122699.

Istiyani, D., A. M. Wibowo, R. Sarasati, M. A. Nugroho, and U. Masfiah. "Modernising without Westernising: The Educational Transformation of Pesantren Traditional into KMI Mu'adalah." *Pertanika Journal of Social Sciences and Humanities* 34, no. 2 (2026): 945–70. https://doi.org/10.47836/pjssh.34.2.18.

Macintyre, Thomas, Martha Chaves, Tatiana Monroy, et al. "Transgressing Boundaries between Community Learning and Higher Education: Levers and Barriers." *Sustainability* 12, no. 7 (2020): 2601. https://doi.org/10.3390/su12072601.

Mangunjaya, F. M. "Developing Environmental Awareness and Conservation Through Islamic Teaching." *Journal of Islamic Studies* 22, no. 1 (2011): 36–49. https://doi.org/10.1093/jis/etq067.

Maulianza, Medo, Sarwititi Sarwoprasodjo, and Nur Asni Gani. "UTILIZING BANDURA'S SOCIAL COGNITIVE THEORY IN ENTERTAINMENT-EDUCATION COMMUNICATION DESIGN: A CONCEPTUAL REVIEW." *Multidisciplinary Research Studies in Social Sciences* 2, no. 2 (2026): 1–16. https://doi.org/10.71312/mrscholar.v2i2.938.

Mohamed, N. "Capturing Green Curriculum Spaces in the Maktab: Implications for Environmental Teaching and Learning." *International Handbook of Learning, Teaching and Leading in Faith-Based Schools*, 2014, 335–51. https://doi.org/10.1007/978-94-017-8972-1_19.

Mohamed, N. "Islamic Education, Eco-Ethics and Community." *Studies in Philosophy and Education* 33, no. 3 (2014): 315–28. https://doi.org/10.1007/s11217-013-9387-y.

Mu'alimin, M., A. M. Muhith, and H. Hepni. "School Principals' and Teachers' Perspectives on School Quality Management in Islamic Schools: Insights from Indonesia." *International Journal of Educational Management* 40, no. 4 (2026): 727–41. https://doi.org/10.1108/IJEM-05-2025-0387.

Munn, Ted, ed. *Encyclopedia of Global Environmental Change*. Wiley, 2002.

Ozdemir, Ibrahim. *Towards An Understanding of Environmental Ethics from a Qur'anic Perspective*. n.d.

Rahman, Rini, and Indah Muliati. "PENDIDIKAN ISLAM DI THAILAND." *Jurnal Kawakib* 1, no. 1 (2020): 23–34. https://doi.org/10.24036/kwkib.v1i1.10.

Simatupang, Bona Ventro. "Dignitas Manusia Dalam Krisis Ekologi Berdasarkan Konsep Imago Dei Dan Ekoteologi." *Gorga: Journal of Constructive Theology* 2, no. 1 (2025): 19–33. https://doi.org/10.62926/jct.v2i1.108.

Singh, P., and A. P. S. Mandair. *THE SIKH WORLD*. In *The Sikh World*. The Sikh World. Taylor and Francis, 2023. https://doi.org/10.4324/9780429455322.

Stevenson, Robert B., Jennifer Nicholls, and Hilary Whitehouse. "What Is Climate Change Education?" *Curriculum Perspectives* 37, no. 1 (2017): 67–71. https://doi.org/10.1007/s41297-017-0015-9.

Vitalocca, D., A. Suherman, D. Rohendi, C. Yulia, and A. G. Abdullah. "Integrating Computational Thinking and Green Skills in Vocational Education through the Bridging Learning Green Informatics Framework." *Discover Education* 5, no. 1 (2026). https://doi.org/10.1007/s44217-025-01095-0.

Wafa, A., and M. M. Said. "Strategic Management of Pesantren Organisational Resilience in a Plural Society Through Multicultural Islamic Education." *Munaddhomah* 7, no. 2 (2026): 260–77. https://doi.org/10.31538/munaddhomah.v7i2.2299.

Washington, Haydn, John Piccolo, Erik Gomez-Baggethun, Helen Kopnina, and Heather Alberro. "The Trouble with Anthropocentric Hubris, with Examples from Conservation." *Conservation* 1, no. 4 (2021): 285–98. https://doi.org/10.3390/conservation1040022.

Windsor, S., and O. Franck. *Intersections of Religion, Education, and a Sustainable World*. In *Intersections of Religion, Education, and a Sustainable World*. Intersections of Religion, Education, and a Sustainable World. Springer Nature, 2025. https://doi.org/10.1007/978-3-031-81809-7.