

## **TRANSFORMING ISLAMIC EDUCATION THROUGH ECO-PEDAGOGY: STRATEGIC LEADERSHIP OF KIAI IN PESANTREN**

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### **Abstract**

The increasing severity of global environmental crises demands educational responses that are not only technical but also value-based and transformative. Islamic educational institutions, particularly pesantren, possess strong moral and spiritual resources to cultivate ecological awareness, yet empirical studies examining eco-pedagogy within pesantren leadership remain limited. This study explores the transformation of Islamic education through eco-pedagogy under the strategic leadership of the kiai at Pesantren Ra'iyatul Husnan Wringin Bondowoso. Eco-pedagogy in this study is understood as an educational praxis integrating critical consciousness, ethical responsibility, and environmental stewardship rooted in Freirean pedagogy and Islamic values. Employing a qualitative case study design, data were collected through in-depth interviews, participant observation, and document analysis involving the kiai, pesantren administrators, teachers, and students during November-December 2025. Data were analyzed using an interactive model supported by triangulation and member checking. The findings reveal that eco-pedagogical transformation occurs through three interconnected stages: strategic formulation of an ecological vision by the kiai, participatory implementation through curriculum integration and daily practices, and institutionalization via habituation, exemplary leadership, and institutional regulations. This process fosters ecological awareness, emotional attachment, learning motivation, and a strong institutional identity as an environmentally friendly pesantren. The novelty of this study lies in integrating Freirean eco-pedagogy with the strategic and spiritual leadership of the kiai, demonstrating how Islamic education can become contextual, transformative, and sustainable through value-based leadership.

**Keywords:** *Eco-Pedagogy; Islamic Education; Kiai Leadership; Pesantren; Environmental Sustainability.*



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## Abstrak

*Krisis lingkungan global yang semakin kompleks menuntut peran pendidikan yang tidak hanya bersifat teknis, tetapi juga transformatif dan berbasis nilai. Pesantren sebagai lembaga pendidikan Islam memiliki modal moral dan spiritual yang kuat untuk menanamkan kesadaran ekologis, namun kajian empiris tentang eco-pedagogi dalam konteks kepemimpinan kiai masih terbatas. Penelitian ini bertujuan menganalisis transformasi pendidikan Islam berbasis eco-pedagogi melalui kepemimpinan strategis kiai di Pesantren Ra'iyatul Husnan Wringin Bondowoso. Eco-pedagogi dipahami sebagai praksis pendidikan yang mengintegrasikan kesadaran kritis, tanggung jawab etis, dan kepedulian lingkungan yang berakar pada pedagogi kritis Freire dan nilai-nilai Islam. Penelitian ini menggunakan pendekatan kualitatif dengan desain studi kasus. Data dikumpulkan melalui wawancara mendalam, observasi partisipatif, dan dokumentasi yang melibatkan kiai, pengelola pesantren, ustadz, dan santri pada November-Desember 2025. Analisis data dilakukan secara interaktif dengan dukungan triangulasi dan member checking. Hasil penelitian menunjukkan bahwa transformasi eco-pedagogi berlangsung melalui tiga tahap, yaitu perumusan visi ekologis oleh kiai, implementasi partisipatif melalui integrasi kurikulum dan praktik keseharian, serta institusionalisasi melalui pembiasaan, keteladanan kepemimpinan, dan regulasi kelembagaan. Transformasi ini memperkuat kesadaran ekologis, motivasi belajar, keterikatan emosional santri, serta identitas pesantren sebagai lembaga pendidikan ramah lingkungan. Kebaruan penelitian ini terletak pada integrasi eco-pedagogi Freirean dengan kepemimpinan strategis dan spiritual kiai dalam konteks pesantren.*

**Kata kunci:** *Eco-Pedagogi; Pendidikan Islam; Kepemimpinan Kiai; Pesantren; Keberlanjutan Lingkungan.*

## INTRODUCTION

The escalating global environmental crisis has positioned education as a strategic arena for fostering ecological awareness, ethical responsibility, and sustainable behavior (Ahmad et al., 2021; Sarwar et al., 2025; Shutaleva, 2023a). Within educational discourse, eco-pedagogy rooted in Paulo Freire's critical pedagogy has been widely examined as an emancipatory approach that links environmental issues with critical consciousness, social justice, and transformative learning (Li et al., 2025; López-López et al., 2021; Tan & Muangasame, 2025). Most existing studies, however, predominantly focus on formal schools and higher education institutions operating within secular or policy-driven educational frameworks (Alamsyah & Mu'alimin, 2025; Chougule et al., 2025; Mahmud, 2024). Consequently, the role of religion-based educational institutions, particularly

Islamic boarding schools (*pesantren*), remains underexplored in eco-pedagogical scholarship.

Previous studies on environmental education in *pesantren* have primarily emphasized programmatic and technical dimensions, such as waste management initiatives, green campus movements, or government-led eco-*pesantren* programs (Hanif et al., 2024; Pearce & Tavares, 2021; Sugianto et al., 2025). While these studies highlight *pesantren*'s potential contribution to environmental sustainability, they tend to treat ecological practices as add-on programs rather than as integrated pedagogical transformations embedded within curriculum, leadership, and institutional culture (Kandiko & Kingsbury, 2023; Mincu, 2022; Weiss et al., 2021). As a result, they provide limited explanation of how ecological values are internalized pedagogically and sustained institutionally.

Other strands of research focus on *kiai* leadership, emphasizing charisma, moral authority, and spiritual influence in shaping *pesantren* culture and students' character (Kloos & Ismah, 2023; Parhusip, 2024; Suciati et al., 2023). Although these studies acknowledge the central role of the *kiai* in institutional decision-making, they rarely connect leadership practices with ecological challenges or eco-pedagogical frameworks (Alhazmi & Almashhour, 2026; Turner, 2025; Van Tol & Wals, 2025). Thus, a clear conceptual gap emerges: existing research has not sufficiently examined how eco-pedagogy is mediated through strategic and spiritual leadership within *pesantren* contexts.

Moreover, eco-pedagogy literature generally positions teachers or institutions as primary agents of change, overlooking the role of religious leaders who possess strong cultural legitimacy and moral authority (Mahaswa et al., 2026; Sarangi & Devi, 2024; Shahida, 2024). In *pesantren*, the *kiai* functions not only as an educational leader but also as a moral and spiritual reference, shaping curriculum orientation, institutional norms, and daily practices (Mohd Yusoff et al., 2022; Mustakim et al., 2024; Salamah et al., 2025). The absence of leadership-based eco-pedagogical analysis creates an empirical and theoretical gap in understanding how ecological education can be sustained in faith-based institutions.

Addressing this gap, the present study focuses on *Pesantren Ra'iyatul Husnan Wringin Bondowoso* as the research site. This *pesantren* was deliberately selected based on several academic considerations. First, it has actively developed eco-*pesantren* initiatives through daily practices, curriculum integration, and institutional regulations under the direct leadership of the *kiai*. Second, unlike *pesantren* that adopt eco-programs merely in response to external policy demands, *Ra'iyatul Husnan* demonstrates an internally driven ecological transformation rooted in religious values and leadership vision. Third, the *pesantren* has received

formal recognition as an eco-pesantren, indicating institutional sustainability and external legitimacy, yet it remains minimally discussed in national and international academic literature. These characteristics position Pesantren Ra'iyatul Husnan as a strategic and information-rich case for examining eco-pedagogical transformation mediated by religious leadership.

This study aims to analyze how eco-pedagogy is transformed into educational praxis through the strategic and spiritual leadership of the kiai in pesantren. By integrating Freirean eco-pedagogy with leadership perspectives, this research contributes to bridging the gap between secular eco-pedagogical theory and faith-based educational practice. It offers both conceptual enrichment and empirical insight into how Islamic education can respond meaningfully to contemporary ecological challenges through value-based and sustainable leadership.

## **RESEARCH METHODS**

This study employed a qualitative approach with a case study design to explore the transformation of Islamic education based on eco-pedagogy through the strategic leadership of the kiai at Pesantren Ra'iyatul Husnan Wringin Bondowoso. A qualitative case study was selected to enable an in-depth examination of contextual dynamics, leadership processes, and lived educational practices within a faith-based institution. This approach is particularly appropriate for capturing complex interactions between values, leadership, and institutional culture that cannot be adequately explained through quantitative methods.

The selection of Pesantren Ra'iyatul Husnan Wringin Bondowoso as the research site was based on clear scientific and empirical considerations. First, the pesantren has been officially recognized as an Eco Pesantren by the Government of East Java Province, indicating sustained institutional commitment to environmental education and ecological management. This recognition has been reported by credible regional media outlets and supported by official institutional documentation, confirming that eco-pedagogical practices at the pesantren are not incidental or temporary initiatives but systematically developed and publicly validated.

Second, unlike pesantren that implement environmental programs merely as policy compliance or short-term projects, Pesantren Ra'iyatul Husnan demonstrates an internally driven eco-pedagogical transformation under the direct leadership of the kiai. Ecological values are embedded in curriculum orientation, daily student practices, institutional regulations, and leadership exemplarity. These characteristics position the pesantren as a critical and information-rich case,

suitable for examining eco-pedagogy as a sustained educational praxis rather than as a technical or administrative program.

Third, despite its institutional recognition and continuous eco-pedagogical practices, Pesantren Ra'iyatul Husnan remains minimally examined in national and international academic literature, particularly in studies integrating eco-pedagogy with strategic and spiritual leadership in Islamic education. This condition enhances the empirical relevance of the research site, as it enables the study to address existing research gaps while generating original insights grounded in real institutional practice. To clarify and systematize the scientific rationale for selecting the research site, the key considerations and supporting evidence are summarized in Table 1.

**Table 1.** Scientific Considerations for Selecting the Research Site

No.	Selection Aspect	Scientific Indicator	Empirical Evidence / Data Source	Research Relevance
1.	Institutional Recognition	Official status as Eco Pesantren	Award from the Government of East Java Province; reports by <i>Radar Jember</i> and <i>Beritalima</i>	Demonstrates sustainability, public legitimacy, and institutional commitment to eco-pedagogy
2.	Leadership Orientation	Strategic and spiritual leadership of the kiai	Interview data (IF1); institutional policy documents	Enables analysis of eco-pedagogy mediated through religious leadership
3.	Eco-Pedagogical Practices	Integration into curriculum and daily activities	Participant observation (O2, O3); program documentation (D1, D2)	Confirms eco-pedagogy as lived educational praxis
4.	Institutional Sustainability	Habituation and formal regulations	Internal regulations; environmental SOPs	Supports analysis of institutionalization processes
5.	Research Gap Relevance	Limited prior academic studies	Review of national and international literature	Positions the pesantren as an underexplored, information-rich case
6.	Data Accessibility	Availability of key informants and documents	Kiai, administrators, teachers, and students	Ensures data depth, triangulation, and credibility

The considerations presented in Table 1 demonstrate that the selection of Pesantren Ra'iyatul Husnan Wringin Bondowoso was not based on convenience, but on methodologically grounded purposive sampling. The combination of institutional recognition, leadership-driven transformation, sustainability of practices, and limited prior scholarly attention confirms the suitability of the site for investigating eco-pedagogical transformation in Islamic education.

Data were collected through in-depth interviews, participant observation, and document analysis involving the kiai, pesantren administrators, teachers (ustadz), and students during November-December 2025. Data analysis followed an interactive model consisting of data condensation, data display, and conclusion drawing (Yin Robert, 2017). To ensure credibility and trustworthiness, the study employed source and method triangulation, as well as member checking with key informants.

## **RESULTS AND DISCUSSION**

### **Results**

#### **Formulation of the Strategy for Transforming Islamic Education Based on Eco-Pedagogy**

The formulation of the eco-pesantren strategy at Pesantren Ra'iyatul Husnan originates from the vision of the kiai as the highest leader of the institution. The kiai stated, "to create students who care for the environment, students who are able to protect nature and their surroundings, whether it concerns waste, plants, or other environmental elements" (IF1). This statement indicates that the kiai's leadership orientation extends beyond the formation of moral character and mastery of religious knowledge; it also broadens the meaning of Islamic education toward ecological responsibility as part of the students' adab (ethical conduct).

This vision represents a shift in the orientation of pesantren education from a normative-doctrinal pattern to a transformative-contextual one. In the Freirean eco-pedagogy framework, the kiai's vision reflects the initial stage of conscientization, namely critical awareness of environmental problems experienced by the pesantren community. The environment is not positioned as a passive backdrop for education but as a problematic social reality that requires pedagogical response. This vision demonstrates the integration of spiritual, moral, and ecological dimensions within the framework of contemporary Islamic education.

The implementation of this vision is conducted gradually, beginning with the male students (haddam) as the initial group. The pesantren administrator explained, "this program is not immediately applied to all students but starts with the male students so it is easier to control and habituate" (IF2). This phased strategy

was confirmed by senior students involved in the initial process, stating that changes were implemented slowly so that students could understand the purpose and benefits (IF3). Observations revealed that this approach facilitated student adaptation and minimized resistance to institutional changes (O1).

The phased approach demonstrates the kiai's strategic leadership capacity in reading the social structure of the pesantren. Male students (haddam) are positioned as key actors due to their intensive involvement in daily activities. This strategy illustrates that eco-pedagogical transformation is designed as a socially staged process, building modeling and legitimacy from within the student community itself rather than as a top-down directive policy.



**Figure 1.** Initial Environmental Challenges and Early Eco-Pedagogical Responses

Figure 1 depicts the initial environmental conditions characterized by waste accumulation around the pondok (boarding area). The kiai explained, “every day the waste accumulates in front of the pondok, creating an unpleasant odor” (IF1). These findings indicate a gap between the normative values of cleanliness in Islamic teachings and the students' daily practices. This condition served as a trigger for critical reflection and internal deliberation involving the pesantren leadership, administrators, and senior students before making strategic decisions.

The documented environmental conditions in Figure 1 serve as a problematic reality that generates reflection and action. From a critical pedagogy perspective, these environmental problems become generative themes that stimulate collective dialogue and shared awareness. The deliberations demonstrate that the kiai's leadership is participatory and value-based, where strategic decisions are not made unilaterally but through moral and social considerations within the pesantren community.

The eco-pesantren program was subsequently developed through collaboration with external parties. Senior students reported that the pesantren established partnerships with the Sarka Space Bondowoso community for guidance in waste management (IF3). Institutional documentation shows that planning and

implementation of environmental management programs were carried out in a more structured manner as a result of this collaboration (D1). Such partnerships expand the pesantren's capacity to address environmental issues without undermining its Islamic identity.

During the strategy formulation stage, the kiai gradually integrated Islamic environmental theological values. Senior students stated, "the kiai often emphasizes that protecting the environment is an amanah (trust), including not wasting water and not littering" (IF3). This value reinforcement is also supported by teachers (ustadz) in teaching, linking jurisprudence (fiqh) and ethics (akhlak) with environmental stewardship (IF4). Thus, the eco-pesantren is positioned as an initial form of Islamic education based on eco-pedagogy that is theologically legitimized.

The integration of ecological values is carried out through religious legitimacy and leadership modeling, not merely administrative rules. The kiai functions as a moral-ecological agent connecting environmental realities, Islamic teachings, and the pesantren's strategic direction. At this formulation stage, the kiai's leadership demonstrates the intersection of spiritual leadership and strategic leadership, forming the foundation for the sustainability of eco-pedagogical transformation at the pesantren.

Moreover, this strategy reflects a participatory pedagogical dimension, in which students are not merely subjects of learning but active participants in shaping the pesantren's practices and culture. This marks a transformation of Islamic education that is responsive to contemporary issues, inclusive, and sustainable, in line with eco-pedagogical principles: learning by doing, learning by reflecting, and learning by caring.

### **Implementation of the Eco-Pedagogy Strategy in Curriculum, Learning Practices, and Resource Management**

The implementation of the eco-pedagogy strategy at Pesantren Ra'iyatul Husnan exemplifies holistic Islamic education, integrating curriculum, pedagogical practices, institutional culture, and ecological resource management. This strategy demonstrates that Islamic education does not solely focus on memorization of classical texts (kitab kuning) and moral formation, but also cultivates ecological awareness as part of students' moral and social responsibility.

Formally, the pesantren continues teaching classical texts, but with greater depth, specificity, and contextualization. The head of the pesantren explained, "the curriculum still uses classical texts, but now it is more specific and adapted from Sidogiri, Lirboyo, and Genggong pesantren" (IF1). This statement indicates that the pesantren adapts the practices of more established institutions to enhance students'

understanding. The curriculum transformation ensures that Islamic education is not merely doctrinal but relevant to the social and ecological context of daily life.

In addition to the formal curriculum, a hidden curriculum emphasizes discipline, ethics, collective responsibility, and environmental cleanliness, consistently applied in daily activities. These values are practiced through student routines, including environmental maintenance, waste management, planting, and caring for vegetation. Analysis shows that this hidden curriculum serves as a medium for internalizing ecological values; daily behaviors become a natural form of moral-ecological education, cultivating environmentally conscious student identities.



**Figure 2.** Students participating in environmental cleaning and waste sorting as part of eco-pedagogical learning

Figure 2 shows students collectively engaging in cleaning and sorting activities. Observational data indicate that these activities have become a daily routine that reinforces consistent ecological behavior. This practice exemplifies the principle of learning by doing, where real experiences serve as a means for internalizing ecological and social values.

A senior student stated, “memorization is no longer limited to Arabic texts; students are now required to memorize and understand the meaning” (IF3). This statement shows that learning in the pesantren has shifted from mechanical memorization to comprehension-based learning relevant to life and ecological responsibility. Routine ecological practices, such as waste management, water conservation, and facility maintenance, are integrated into religious and daily activities. Observations reveal that these practices cultivate an active ecological awareness in students, rather than merely theoretical knowledge.

Students are positioned as primary agents of transformation in resource management. The head of the pesantren emphasized, “our primary focus is the santri, while teachers and supervisors are mostly recruited from alumni” (IF1). This

strategy highlights that pesantren leadership emphasizes empowering students as main actors of change, while alumni serve as mentors and role models.

Waste management is conducted in collaboration with the external Sarka Space Bondowoso community (IF4), which provides technical assistance, training, and environmental education. Ecological values are also contextualized through Islamic teachings, for example, *taharah* (ritual cleanliness) is linked to water management, and the Prophet's principle of moderation guides the avoidance of excessive behavior (IF5). The integration of social, spiritual, and ecological practices establishes religious legitimacy for environmental practices, enabling students to perceive environmental stewardship as a moral and spiritual trust (*amanah*). The combination of value internalization, daily practice, and external support also results in institutional recognition of environmental management at the pesantren.

Eco-pedagogy shapes a holistic institutional culture, where discipline, collective responsibility, and environmental awareness become part of the institutional identity. Observations show that senior students act as role models for junior students, while the *kiai* plays a strategic role in aligning vision, policies, and practices with contemporary issues such as environmental stewardship. The *kiai* asserted, "The focus is to make *santri* understand that maintaining the environment is a religious responsibility and a communal duty" (IF1). This strategy is participatory rather than top-down, allowing social legitimacy to emerge from within the pesantren community.

Comprehensive analysis indicates that the implementation of eco-pedagogy at Pesantren Ra'iyatul Husnan represents a holistic educational practice that integrates key aspects of pesantren life. First, the curriculum is enriched through contextualized teaching of classical texts, enabling students to understand and apply religious knowledge to everyday life. Second, pedagogical practices involve experiential learning, where students actively participate in environmental activities such as waste management, facility maintenance, and plant care, internalizing ecological values through action. Third, institutional culture is consistently nurtured, embedding discipline, ethics, and ecological responsibility into the collective identity of students and the pesantren community. Fourth, resource management is participatory, with students as main actors, supported by external collaboration, and ecological values linked to Islamic teachings, ensuring the sustainability of eco-pedagogical programs morally, socially, and religiously.

The *kiai*'s strategic leadership enables Islamic teachings to be translated into real environmental practices, making education transformational. Students not only acquire knowledge and understanding but also develop ecological awareness, social capacity, and tangible moral responsibility. Pesantren Ra'iyatul Husnan exemplifies

contextual, transformational, and sustainable Islamic education, serving as a model for replication in other pesantren.

### **Institutionalization and Sustainability of Eco-Pedagogical Transformation**

The eco-pedagogical transformation at Pesantren Ra'iyatul Husnan developed through three interconnected stages: strategic formulation, practical implementation, and institutionalization. These stages reflect a gradual yet systematic process through which ecological values were embedded into the pesantren's daily life, organizational norms, and institutional identity. Rather than being introduced as a temporary program, eco-pedagogy evolved through continuous habituation, internal regulation, and leadership role modeling, enabling sustainability beyond individual initiatives.

At the strategic formulation stage, the kiai (pesantren leader) articulated a clear vision to establish an environmentally friendly pesantren grounded in Islamic moral values. In an interview, he emphasized that environmental care is inseparable from religious ethics, stating: "Maintaining cleanliness and environmental sustainability is part of a santri's adab. This should become a daily habit, not just when under supervision" (IF1). This statement illustrates that ecological responsibility was framed as a moral and spiritual obligation rather than a technical rule. Program planning documents (D1) further show that this vision was translated into concrete strategies through coordination meetings among administrators, the development of internal regulations, and the alignment of environmental values with institutional goals. Initial environmental observations (O1), which revealed waste accumulation in dormitory areas, strengthened the sense of urgency and justified the need for eco-pedagogical intervention. A senior student confirmed that the formulation stage also considered students' readiness and adaptation processes, noting: "Initially, we were not accustomed, but with guidance from the administrators, we gradually began to understand the importance of maintaining the pesantren environment" (IF3). This indicates that strategic planning accounted for cultural change as a gradual learning process rather than immediate compliance.

The implementation stage involved the active participation of all pesantren members, including administrators, teachers, senior students, and haddam (junior students). Eco-pedagogical values were enacted through routine practices and collective activities that emphasized shared responsibility. Administrators explained: "We always monitor cleanliness before religious activities. Every corner of the dormitory and study room must be clean. This ecological responsibility is a mandatory rule for all students" (IF2). Senior students added that implementation was strengthened through collaborative work involving alumni and peers, such as

cleaning gardens, planting trees, and sorting waste, which gradually became a source of pride rather than obligation (IF3). Teachers also highlighted the integration of environmental values into classroom instruction, particularly in science and character education lessons, ensuring that ecological awareness was reinforced cognitively as well as behaviorally (IF4). Daily observations (O2) confirmed that waste sorting, plant care, and routine communal work were consistently practiced, demonstrating that eco-pedagogy functioned as a lived experience. Moreover, external collaboration with Sarka Space Bondowoso (D2) provided technical guidance and resources, enhancing the quality and consistency of implementation.

Institutionalization was achieved when eco-pedagogical practices became normalized through habituation, internal regulation, and leadership role modeling. The kiai emphasized that leadership participation was essential for sustaining change, stating: "Giving instructions alone is not enough; leaders must participate directly so that students imitate and value these behaviors" (IF1). Administrators further explained that cleanliness and environmental care activities were conducted routinely and systematically, transforming ecological responsibility into an institutional norm rather than an individual initiative (IF2). From the students' perspective, this institutionalization fostered emotional attachment and pride, as expressed by a haddam student: "We feel proud when our dormitory is recognized as an eco-pesantren. This motivates us even more to maintain cleanliness daily" (IF5).

Observations of institutional routines (O3) showed that dormitory corridors, study rooms, and shared spaces were consistently clean, indicating that habituation had evolved into an organizational culture. This cultural consolidation was further reinforced by official documents recording environmental awards and recognition (D3), which strengthened the pesantren's moral, social, and religious legitimacy. Such recognition not only validated internal efforts but also encouraged the pesantren community to sustain and improve eco-pedagogical practices.

Strategic and participatory leadership played a crucial role in minimizing resistance and fostering collective ownership of environmental values. Support from the broader community, local government, and external partners enhanced sustainability by providing legitimacy and reinforcement. Although challenges such as limited funding and infrastructure were encountered, these constraints were addressed gradually through adaptive strategies and collective commitment, reflecting the pesantren's capacity for long-term transformation.

Overall, eco-pedagogical values at Pesantren Ra'iyatul Husnan have become deeply embedded within the institution's identity, shaping students' pride,

emotional attachment, and ecological awareness. This institutionalized transformation demonstrates that eco-pedagogy, when grounded in strategic leadership, participatory practice, and moral legitimacy, can serve as a sustainable model for other Islamic and general educational institutions.



**Figure 3.** Clean dormitory corridor as evidence of institutionalized eco-pedagogical norms

Figure 3 illustrates a clean, orderly, and well-maintained dormitory corridor, representing the tangible outcome of the institutionalization of eco-pedagogical values at Pesantren Ra'iyatul Husnan. The consistent cleanliness observed is not merely the result of temporary supervision or external enforcement, but rather reflects an institutional culture that has been internalized by the entire pesantren community. This condition indicates that ecological responsibility has shifted from an imposed rule to a shared value embedded in daily life.

Interviews with the kiai and pesantren leadership (IF1) reveal that leadership role modeling plays a decisive role in cultivating this culture. The head of the pesantren emphasized that direct participation by leaders is more influential than formal instructions alone, as students tend to imitate visible behavior rather than abstract regulations. Through this exemplarity, eco-pedagogical values are constructed not only as administrative obligations but also as moral identities that shape students' attitudes and character.

This leadership-driven process is reinforced by institutional mechanisms. Administrators (IF2) confirmed that internal regulations and routine monitoring function as structural supports for habituation. Before religious or learning activities begin, administrators ensure that all areas are clean and well-organized, thereby embedding ecological discipline into the rhythm of institutional life. Routine observations (O3) further demonstrate that cleanliness in dormitory corridors and study rooms has become an organizational norm rather than an incidental or situational practice.

From the students' perspective, both senior and junior (IF3, IF5), these practices foster a strong sense of emotional attachment and collective pride. Recognition of the dormitory as part of an eco-pesantren enhances psychological motivation to maintain cleanliness and environmental order. Participation in communal activities such as gardening, waste sorting, and collective cleaning (O2) not only develops ecological awareness but also strengthens social responsibility, cooperation, and leadership skills among students.

Sustainability is further strengthened through the integration of eco-pedagogical values into the learning curriculum. Teachers (IF4) explained that students are encouraged to connect environmental concepts learned in class with real-life practices in the pesantren environment. This integration ensures that ecological values are experienced as part of the learning process and character formation, rather than treated as supplementary or extracurricular concerns.

External factors also contribute significantly to institutional sustainability. Partnerships with Sarka Space Bondowoso (D2) provide technical guidance, resources, and collaborative programs that enhance implementation capacity, while awards and official recognition (D3) reinforce the moral, social, and religious legitimacy of eco-pedagogical practices. Such recognition strengthens institutional confidence and encourages long-term commitment despite existing constraints. Although challenges such as limited funding and infrastructure persist, pesantren leadership adopts a gradual and participatory strategy to address these limitations. This approach minimizes resistance, fosters collective ownership, and reinforces the pesantren's identity as an environmentally responsible institution.

In essence, the cleanliness depicted in Figure 3 symbolizes a holistic transformation process in which ecological values are: (a) strategically formulated through planning and policy (IF1, IF2, D1, O1); (b) participatively implemented through daily practices and curriculum integration (IF3, IF4, IF5, O2, D2); and (c) institutionalized as shared norms, identity, and institutional pride (IF1, IF2, IF5, O3, D3). Thus, Figure 3 does not merely display physical orderliness, but also represents the successful internalization of eco-pedagogical values as a sustainable cultural foundation. This finding confirms that character education, ecological practices, and strategic leadership can mutually reinforce one another to create a resilient, ethical, and transformative educational institution.

## Discussion

### **Strategic Leadership of the Kiai as the Foundation for Eco-Pedagogical Transformation in Pesantren**

The eco-pedagogical transformation at Pesantren Ra'iyatul Husnan is fundamentally driven by the strategic leadership of the kiai, who demonstrates a visionary, reflective, and long-term orientation in responding to contemporary ecological challenges. Interview data and institutional documents (IF1, D1) indicate that pesantren education is deliberately framed not only to strengthen students' religious competence in a doctrinal sense, but also to cultivate environmentally conscious character as an integral dimension of Islamic education. This framing reflects an understanding that Islamic education must respond to real social and ecological realities, positioning environmental responsibility as part of moral and spiritual formation rather than an external agenda.

This strategic orientation begins with the identification of concrete ecological problems within the pesantren environment, such as waste accumulation in dormitory corridors and shared spaces (O1). These issues are not interpreted merely as technical or managerial shortcomings, but are reframed by the kiai as pedagogical entry points for long-term transformation (Abdullah & Kusaeri, 2024; Blossfeld et al., 2015; Suresman et al., 2025). Such an approach reflects strategic sense-making, in which leaders reinterpret everyday problems as opportunities for systemic change and value internalization (de Metz et al., 2024; Plotnick et al., 2026; Rojas-Bravo et al., 2025). By linking environmental problems with educational objectives, ecological issues become meaningful learning contexts rather than isolated operational concerns.

Through this leadership approach, students are positioned as active agents of transformation rather than passive recipients of institutional rules. The kiai's leadership encourages students to critically reflect on their daily interactions with the environment and to take responsibility for collective spaces (Dian et al., 2024; Makki et al., 2025; Wajdi et al., 2022). This finding aligns with participatory leadership studies demonstrating that student involvement enhances ownership, agency, and moral responsibility. It also resonates with Freirean eco-pedagogy, which emphasizes critical reflection on lived experience as the foundation of ecological awareness and emancipatory education (Hjorth Warlenius, 2022; Hossain, 2024; Korsant, 2024).

Empirical findings further reveal that eco-pedagogical practices are implemented through participatory and collective activities embedded in everyday pesantren life. Senior and junior students (*haddam*) actively engage in communal work, waste sorting, and garden maintenance (IF3, IF5; O2), transforming routine

activities into meaningful educational experiences (Ramos-Vallecillo et al., 2024; Silseth & Erstad, 2022; Yu, 2024). These practices function not only as environmental management strategies but also as social learning processes that strengthen solidarity, discipline, and shared responsibility (Weder et al., 2022; Zainuri & Huda, 2023). Such findings are consistent with previous studies highlighting collective ecological practice as a foundation for emotional attachment, communal identity, and sustained behavioral change (Contreras et al., 2024; De Gregorio et al., 2025; Hamann et al., 2024).

Teachers play a crucial role in reinforcing this transformation by integrating ecological values into classroom learning and informal instruction (IF4), while administrators emphasize monitoring, internal regulations, and moral guidance as mechanisms for continuity and discipline (IF2; O3). These internal efforts are complemented by external collaboration with Sarka Space Bondowoso (D2) and recognition through environmental awards (D3), which enhance the pesantren's institutional legitimacy. This finding supports studies emphasizing that external validation and strategic partnerships strengthen the sustainability of value-based educational innovation by reinforcing internal commitment and public accountability (Iqbal & Piwovar-Sulej, 2022; Sultana et al., 2025; van Gestel et al., 2024).

Overall, the findings confirm that eco-pedagogical transformation at Pesantren Ra'iyatul Husnan follows a systematic and intentional sequence driven by the kiai's strategic leadership. Environmental education is positioned as a core educational praxis embedded within the pesantren's mission, rather than as a supplementary or symbolic program. This process produces tangible outcomes, including heightened ecological awareness, strong emotional attachment to the institution, and the consolidation of a distinctive eco-pesantren identity that integrates religious values with environmental ethics. To synthesize these findings, the eco-pedagogical transformation at Pesantren Ra'iyatul Husnan can be conceptualized as a sequential and interconnected process initiated by strategic leadership and sustained through participatory practice and institutional legitimacy.



**Figure 4.** Eco-Pedagogical Transformation at Pesantren Ra'iyatul Husnan

Figure 4 illustrates that strategic leadership functions as the primary driving force of eco-pedagogical transformation. The kiai's vision and capacity for problem identification shape collective awareness and guide participatory practices, which are subsequently reinforced through institutional regulation and external legitimacy. This iterative interaction demonstrates that ecological awareness is not produced instantaneously, but emerges through continuous engagement between leadership, practice, and organizational structure. The model confirms that eco-pedagogy in pesantren operates as a transformative educational praxis embedded within institutional identity rather than as a technical environmental program.

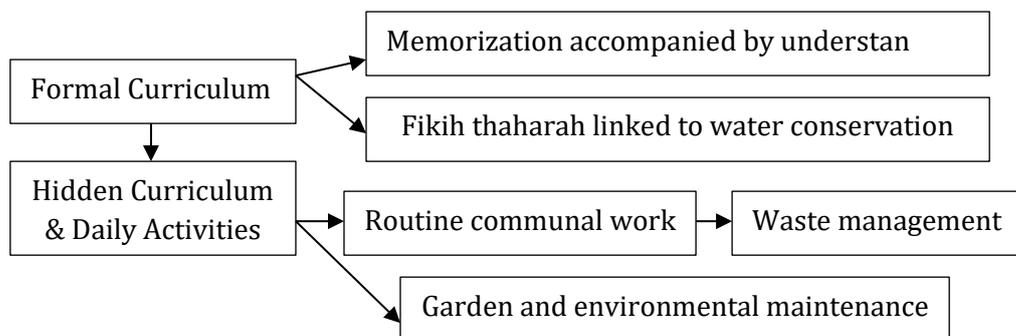
### **Integration of Eco-Pedagogy into Curriculum, Learning Practices, and Institutional Culture**

The findings indicate that eco-pedagogy at Pesantren Ra'iyatul Husnan is implemented through an integrative strategy rather than merely revising the formal curriculum. Ecological values are embedded across the formal curriculum, hidden curriculum, and students' daily practices, positioning eco-pedagogy as a lived educational praxis. This integrative approach ensures that environmental awareness is not confined to specific subjects, but permeates the entire educational experience of students (Jordan, 2023; Owens et al., 2023; Pérez-Martín & Esquivel-Martín, 2024).

This approach aligns with Freire's critical pedagogy, which emphasizes that meaningful learning emerges from lived experience rather than theoretical transmission alone (Andrews et al., 2023; Fusar-Poli et al., 2022; van de Goor et al., 2025). Eco-pedagogy in this context functions as a dialogical process, where students learn ecological values through reflection on concrete experiences within their social and physical environment (Baena-Morales et al., 2023; Gugssa, 2023; Merritt et al., 2022).

Concrete examples include religious memorization accompanied by reflective understanding, the teaching of fiqh al-thaharah linked to water conservation, and structured hygiene routines embedded in daily schedules. These practices indicate a shift from transmissive pedagogy toward reflective pedagogy, where knowledge is connected to ethical action and environmental responsibility (Bryan, 2022; Leite et al., 2022; Young & Malone, 2023). Interview and observational data (IF3, IF4, IF5; O2) show that communal work, waste management, and garden maintenance have become routine practices that strengthen students' sense of ownership and emotional attachment to the pesantren. These activities transform the pesantren environment into a living laboratory for ecological learning, reinforcing the internalization of values through repeated practice.

From a leadership perspective, the kiai and administrators deliberately empower students as key actors of change (IF1, IF2). Leaders' moral exemplarity frames eco-pedagogy as an act of worship and moral responsibility, reinforcing the spiritual dimension of environmental care. This aligns with spiritual leadership studies emphasizing value-driven leadership in shaping ethical behavior (Malaya & Nismy Rafiudeen, 2025; Porter, 2023; Ramalepe, 2026). As a result, eco-pedagogical integration has significantly shaped the pesantren's institutional culture, reinforcing ecological awareness, discipline, and a strong eco-pesantren identity (O3). Environmental responsibility is thus normalized as part of everyday religious life rather than perceived as an external or temporary initiative. Based on these findings, the integration of eco-pedagogy can be understood as the interaction of curriculum, daily practice, and institutional culture that mutually reinforce one another.



**Figure 5.** Integration of Eco-Pedagogy at Pesantren Ra'iyatul Husnan

Figure 5 demonstrates that eco-pedagogy becomes effective when it is experienced holistically across learning domains. The formal curriculum provides conceptual grounding, the hidden curriculum reinforces values implicitly, and daily practices translate values into lived experience. Their interaction produces experiential eco-pedagogy, fostering deep ecological awareness and a sustainable institutional culture. This model extends existing literature by showing how integration across pedagogical domains strengthens the sustainability of ecological education in religious institutions.

### **Institutionalization and Sustainability of Eco-Pedagogical Transformation**

The institutionalization of eco-pedagogical values at Pesantren Ra'iyatul Husnan occurs through a dynamic interaction between habitual student practices, leadership exemplarity, institutional regulations, and external legitimacy. These elements do not operate in isolation but function as an integrated system that gradually transforms ecological awareness from individual behavior into a shared

and enduring institutional culture (Little et al., 2023; Shutaleva, 2023b; Westover, 2025). This process reflects the broader understanding of institutionalization as the embedding of values, norms, and practices into the daily routines and identity of an organization, ensuring their continuity beyond individual actors or temporary programs.

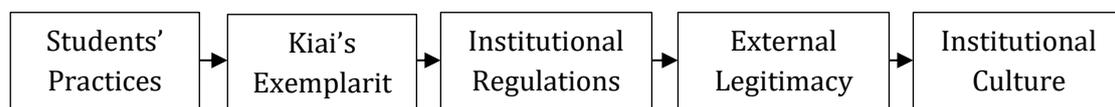
At the normative level, the kiai and pesantren administrators consistently emphasize environmental cleanliness as both a religious obligation and an institutional norm (IF1, IF2). Ecological responsibility is framed as an expression of Islamic ethics, closely linked to concepts of *adab*, *thaharah*, and stewardship (*khalifah*). By grounding environmental practices in religious values, the leadership ensures that ecological care is perceived not merely as a technical requirement but as a moral and spiritual responsibility (Abumoghli, 2023; Author & Chattopadhyay, 2024; Rodliyah et al., 2024). Over time, this value framing has evolved into stable routines observable in daily pesantren life, such as consistently clean dormitory corridors, organized study spaces, and disciplined communal areas (O3), indicating that ecological norms have been internalized rather than enforced superficially.

Students' daily practices function as the primary medium through which eco-pedagogical values are internalized and sustained (Fauzi et al., 2022; Hasanah et al., 2025; Irwan et al., 2025; Najwa et al., 2025; Salim et al., 2024). Repeated engagement in communal ecological activities such as waste sorting, collective cleaning, and garden maintenance allows students to learn through practice rather than instruction alone (IF3, IF5; O2). These routines foster a sense of ownership, pride, and emotional attachment to the pesantren environment, reinforcing conscientization through action rather than abstract awareness (Dasar et al., 2025; Nuryazidi, 2024; Zawawi, 2023). As students experience the tangible impact of their actions on the cleanliness and sustainability of their surroundings, ecological responsibility becomes part of their personal and collective identity.

Leadership exemplarity plays a crucial role in minimizing resistance and strengthening intrinsic motivation among students. When the kiai and administrators actively participate in ecological practices, they provide visible moral authority that legitimizes environmental discipline as a shared commitment rather than an imposed rule. This form of exemplarity aligns with spiritual and value-based leadership theories, which emphasize that ethical behavior is most effectively transmitted through consistent role modeling. In this context, leadership participation transforms eco-pedagogical practices into expressions of collective morality, reducing the need for coercive enforcement and fostering voluntary compliance.

Institutional sustainability is further reinforced through formal mechanisms, including standard operating procedures (SOPs), scheduled ecological activities, and structured coordination among administrators and student leaders (IF2; D1). These mechanisms ensure consistency and continuity, preventing eco-pedagogical practices from depending solely on individual initiative. Strategic partnerships with external organizations, such as Sarka Space Bondowoso (D2), provide additional resources, technical support, and learning opportunities, strengthening institutional capacity. This reflects strategic leadership principles that emphasize system continuity, resource alignment, and long-term vision as foundations for sustainable organizational change.

External legitimacy, including government recognition and public acknowledgment, further stabilizes eco-pedagogical practices by strengthening institutional identity and social trust. Recognition as an eco-pesantren validates internal efforts and reinforces students' and administrators' pride in their collective achievements. Such legitimacy not only enhances motivation but also protects the sustainability of eco-pedagogical initiatives by embedding them within broader social and institutional networks. Together, these internal and external factors ensure that eco-pedagogy remains sustainable, adaptive, and resilient within the pesantren context. The sustainability of eco-pedagogical transformation can therefore be conceptualized as a sequential and reinforcing institutional process rather than a static outcome.



**Figure 6.** Model of Institutionalization of Eco-Pedagogy

Figure 6 illustrates that sustainability is achieved when ecological values move systematically from individual practice to collective institutional culture. Students' daily routines establish the behavioral foundations of eco-pedagogy, serving as the entry point for value internalization. Leadership exemplarity then provides moral authority and symbolic reinforcement, ensuring that these practices are perceived as meaningful and legitimate. Institutional regulations translate values into consistent organizational systems, while external legitimacy reinforces identity, pride, and long-term commitment.

The interaction of these elements creates a resilient and adaptive eco-pesantren culture capable of sustaining environmental education beyond short-term interventions. Rather than functioning as a discrete environmental program,

eco-pedagogy at Pesantren Ra'iyatul Husnan becomes an integral part of institutional identity and educational ethos. This model contributes to the literature by demonstrating how religious educational institutions can successfully institutionalize ecological values through the alignment of practice, leadership, regulation, and legitimacy, offering a replicable framework for sustainable value-based transformation.

## CONCLUSION

The transformation of Islamic education based on eco-pedagogy at Pesantren Ra'iyatul Husnan Wringin Bondowoso is driven by the strategic leadership of the kiai, who is able to integrate critical reflection on ecological realities, long-term institutional vision, and Islamic spiritual values. In the context of the pesantren, eco-pedagogy is not merely an environmental program but a transformative educational process internalized through daily practices, habituation of moral and social conduct, and leadership exemplarity. Ecological awareness becomes an inseparable part of developing spiritual piety and social responsibility among the students.

The scholarly contribution of this study lies in its integrative theoretical perspective, linking Freirean eco-pedagogy with spiritual and strategic leadership in pesantren education. The strength of this study is its redefinition of the kiai's role as an agent of eco-pedagogical transformation, bridging Islamic environmental theology with contextual and sustainable educational practice. Methodologically, the in-depth qualitative case study uncovers the dimensions of values, culture, and leadership that are often overlooked in technocratic approaches to eco-pedagogy.

The limitations of this study include its focus on a single pesantren with a specific context, limited variation among informants in terms of gender, age, and background, and the constraints of qualitative methods in generalizing findings.

Future research should adopt a multi-case approach to compare eco-pedagogical practices across pesantren with different leadership styles and resources. Integrating perspectives of gender, age, and students' socio-economic backgrounds will provide a more comprehensive understanding. A combination of qualitative and quantitative methods can systematically evaluate the effectiveness of eco-pedagogical implementation. Further studies could also investigate the relationships between kiai leadership, curriculum innovation, and collaboration with external communities in developing sustainable, ecology-based Islamic education.

The findings of this study provide a foundation for developing a model of Islamic education that integrates ecological values, strategic leadership, and the formation of environmentally conscious student character, while also opening

broader research opportunities to strengthen eco-pedagogical policies and practices in other pesantren.

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