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Reconstructing School-Based Environmental Education: Fragmentation, Cultural Embeddedness, And Policy Enactment In Majalengka Schools

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Abstract: The increasing complexity of global environmental challenges has repositioned environmental education as a transformative process aimed at fostering sustainable consciousness and responsible citizenship. This study aims to examine how environmental education is enacted through the Adiwiyata Program by analyzing stakeholder fragmentation, cultural embeddedness, and policy implementation dynamics in primary schools. A qualitative case study approach was employed in elementary schools in Majalengka Regency, Indonesia, using purposive stratified sampling to capture variations in institutional performance. Data were collected through in-depth interviews, participatory observations, and document analysis, and analyzed through iterative coding procedures. The findings reveal that environmental education is shaped by the dynamic interplay of interpretive fragmentation, structural constraints, and cultural integration. While collective appreciation among stakeholders supports the emergence of ecological habitus among students, the implementation remains uneven due to divergent interpretations and limited institutional capacity, often resulting in symbolic practices. However, when environmental values are embedded within school culture and reinforced through experiential learning, behavioral transformation becomes more sustainable and meaningful. The study concludes that environmental education should be reframed as a culturally embedded and socially constructed process that aligns policy, practice, and stakeholder meaning. Such alignment is essential to move beyond symbolic implementation and to achieve transformative and context-responsive sustainability education.

Keywords: Environmental education; Adiwiyata Program; stakeholder fragmentation; cultural embeddedness; ecological habitus.

INTRODUCTION

The escalating complexity of global environmental crises—ranging from climate change and biodiversity loss to increasing socio-ecological vulnerability—has repositioned education as a critical domain for cultivating sustainable consciousness and responsible citizenship. Environmental education is no longer limited to the transmission of ecological knowledge; instead, it is increasingly conceptualized as a transformative process that integrates cognitive, affective, and behavioral dimensions of learning (Ardoin et al., 2020; Fang et al., 2023; Leal Filho et al., 2018). This shift reflects a growing recognition that sustainability challenges are deeply embedded in socio-cultural systems and therefore require holistic, participatory, and context-sensitive educational approaches (Boström et al., 2024; International Commission on the Futures of Education, 2021). Accordingly, schools are expected to function not only as instructional spaces but also as environments that foster ecological literacy, ethical awareness, and collective responsibility (Bovee-de Pauw & Van Paegem, 2018; Clavin, 2023).

Within this evolving paradigm, the integration of culture into environmental education has emerged as a critical dimension in fostering meaningful and contextually grounded learning. Sustainability is increasingly understood as a cultural process that shapes how individuals interpret and respond to environmental issues (Dessein et al., 2015; Panieri et al., 2024). Empirical studies demonstrate that educational approaches grounded in local wisdom, community values, and socio-cultural practices significantly enhance ecological awareness and long-term behavioral change (Häggeström & Schmidt, 2020; Pisters et al., 2019; Pouresmaeli et al., 2024). These culturally embedded approaches align with holistic education theories emphasizing the integration of knowledge, values, and lived experience (Miller, 2019; Miseliunaite et al., 2022). At the same time, experiential learning frameworks highlight that environmental understanding is most effectively developed through direct engagement and reflective practice (Ghanem et al., 2026; Kolb, 1984; Rahmi, 2024).

In response to these global and theoretical developments, Indonesia has institutionalized environmental education through the Adiwiyata Program and strengthened it through the GPBLHS policy framework (KEMENTERIAN LINGKUNGAN HIDUP, 2013; Kementerian Lingkungan Hidup Dan Kehutanan, 2019). These frameworks promote a whole-school approach, integrating environmental values into curriculum, school management, infrastructure, and community engagement. Rather than treating environmental education as a separate subject, the Adiwiyata model aims to cultivate a sustainable school culture that integrates ecological awareness with character education and local values (Hartono, 2020; L. P.-S. K. Parker, 2020). Empirical evidence suggests that such integrative approaches can enhance students' environmental literacy and promote pro-environmental behavior (Aryanti, 2020; Nurwidodo et al., 2020; Pelita & Widodo, 2020).

However, despite its comprehensive design, the implementation of Adiwiyata and GPBLHS reveals a persistent gap between policy ideals and practical realities. A growing body of research indicates that environmental education initiatives are often enacted in symbolic or performative ways, characterized by routine activities that lack deeper pedagogical integration and critical reflection (Bahrudin, 2017; Foley, 2021; Husin et al.,

2023). This condition suggests that the central challenge lies not in policy formulation but in the processes through which policies are interpreted, negotiated, and enacted within institutional contexts (Pramono, 2020). In many cases, environmental programs are reduced to administrative compliance rather than functioning as transformative learning processes that shape ecological identity and ethical responsibility (Blake et al., 2013).

This gap becomes particularly evident in socio-culturally complex and resource-constrained contexts such as Majalengka Regency. Empirical data indicate that key indicators related to sustainability awareness remain below expected standards, reflecting limited internalization of environmental values (Dinas Pendidikan Kabupaten Majalengka, 2023). Structural constraints, including limited resources, insufficient teacher training, and weak coordination, further hinder effective implementation (Dinler, 2024; Husin et al., 2023; OECD, 2023). These challenges align with broader findings in educational research highlighting the role of institutional capacity and organizational conditions in shaping program outcomes (Barney & Hesterly, 2020).

More critically, the limitations of environmental education implementation are not solely structural but also interpretive. This study identifies a significant fragmentation in stakeholder understanding regarding the purpose and meaning of environmental education. Such divergence reflects differences in institutional roles, cognitive frameworks, and experiential backgrounds, resulting in disjointed practices and weak program coherence (Husin et al., 2020). From a constructivist perspective, knowledge and meaning are actively constructed through social interaction, making shared understanding essential for effective educational practice (Chand, 2024; Nerita et al., 2023). Without interpretive alignment, opportunities for collective learning and transformation remain limited (Bandura, 1977).

Despite the expanding body of literature on environmental education, existing studies have largely focused on normative frameworks and outcome-based evaluations (Ardoin et al., 2020; Boca & Saraçlı, 2019; Hajj-Hassan et al., 2024). There remains a significant gap in understanding how policies are enacted in everyday school contexts, particularly in relation to stakeholder interactions, interpretive processes, and cultural dynamics. This gap is critical, as sustainability education depends not only on policy design but also on how it is socially constructed within local contexts (John, 2025; Lehmann et al., 2025).

Positioned within this gap, the present study adopts a reconstructive perspective to examine environmental education beyond its symbolic manifestations. It seeks to unpack the dynamics of stakeholder fragmentation, cultural embeddedness, and policy enactment within the implementation of Adiwiyata and GPBLHS. By situating environmental education within the interaction of policy, pedagogy, and socio-cultural context, this study contributes to contemporary debates on transformative and context-sensitive sustainability education (Boström et al., 2024; Leal Filho et al., 2018).

The novelty of this research lies in its focus on interpretive fragmentation as a central analytical lens. While previous studies have emphasized structural and pedagogical challenges, this study foregrounds interpretive dissonance as a key determinant of implementation outcomes. Additionally, it positions cultural embeddedness as a transformative mechanism for aligning environmental education with local values and practices. This perspective aligns with transformative learning theory,

which highlights the role of reflection, experience, and social interaction in fostering deep and lasting change (Blake et al., 2013; Gal, 2026).

Accordingly, this study aims to explore how environmental education is reconstructed within Majalengka schools through the interplay of stakeholder interpretations, cultural dynamics, and policy enactment processes. It seeks to analyze stakeholder fragmentation, examine the role of cultural embeddedness, and identify structural and interpretive factors shaping implementation. The findings are expected to contribute both theoretically, by advancing context-sensitive environmental education frameworks—and practically, by informing more coherent and transformative sustainability practices (Mathie et al., 2026; Pratiwi et al., 2025).

In sum, this study repositions environmental education as a dynamic, socially constructed, and context-dependent process. It underscores the importance of aligning policy, pedagogy, and culture to move beyond symbolic implementation toward meaningful transformation. Without such alignment, environmental education risks remaining a procedural obligation rather than a transformative force capable of addressing contemporary sustainability challenges (Pertwi, 2017; Sachs, 2015).

²³ • **METHOD**

This study employed a qualitative case study design to critically examine the enactment of the Environmentally Aware and Culturally Integrated School Movement (*Gerakan Peduli dan Berbudaya Lingkungan Hidup di Sekolah/GPBLHS*) within elementary schools in Majalengka Regency, West Java, Indonesia. The selection of a qualitative case study approach was grounded in its epistemological strength to capture the complexity of social reality, particularly in understanding how policies are interpreted, negotiated, and operationalized within specific institutional and cultural contexts (Creswell & Poth, 2018; Rahardjo, 2017). Given that this study aims to explore stakeholder fragmentation, cultural embeddedness, and policy enactment processes, a qualitative approach allows for an in-depth exploration of meaning construction rather than merely measuring outcomes.

Majalengka Regency was purposively selected as the research context due to its representation of socio-educational diversity and structural disparities within the implementation of environmental education policies. The region comprises both high-performing and low-performing schools based on the National Education Report Card, thereby providing a critical comparative context for examining variations in institutional capacity, policy interpretation, and stakeholder engagement. This contextual selection aligns with the study's objective to uncover not only patterns of success but also contradictions and constraints in policy implementation.

The population consisted of 672 public and private elementary schools distributed across 26 subdistricts. A stratified purposive sampling technique was employed to ensure representation of contrasting institutional conditions. From each subdistrict, two schools were selected, one with the highest and one with the lowest performance index, resulting in a total of 52 schools. This sampling strategy was analytically justified to capture heterogeneity in implementation practices, allowing for a more nuanced understanding of how environmental education policies are enacted across different institutional contexts.

Participants were selected purposively based on their direct involvement and experiential knowledge of GPBLHS implementation. They included school principals, teachers, students, administrative staff, and community representatives. The inclusion of diverse stakeholder groups was essential to explore interpretive fragmentation and to understand how environmental education is constructed across different social positions. Such multi-actor engagement reflects the principles of collaborative governance and social capital theory, which emphasize the importance of collective participation in sustainability initiatives (Emerson et al., 2012; Putnam, 1995).

Data were collected through three primary techniques: in-depth interviews, participatory observations, and document analysis. In-depth interviews were conducted using semi-structured protocols to explore participants' perceptions, interpretations, and experiences related to environmental education. Participatory observations were employed to capture real-time practices, interactions, and routines within school environments, enabling the identification of implicit cultural and behavioral patterns. Document analysis involved examining school policies, program reports, and planning documents to understand the formal articulation of environmental education initiatives. The integration of these methods was intended to ensure data richness and triangulation.

Data analysis followed a thematic approach grounded in qualitative coding procedures (Miles et al., 2020). The process began with open coding to identify initial categories emerging from the data, followed by axial coding to establish relationships among categories, and selective coding to synthesize core themes. Through this iterative process, key themes such as stakeholder fragmentation, symbolic implementation, and cultural embeddedness were constructed, providing a coherent analytical framework aligned with the study objectives.

To ensure the trustworthiness of the findings, several validation strategies were employed. Methodological triangulation was conducted across data sources and participant groups to enhance credibility. Member checking was utilized to validate interpretations with participants, while an audit trail was maintained to document the research process and analytical decisions. Reflexivity was continuously practiced through field notes and analytical memos to critically examine the researcher's positionality and potential biases.

Ethical considerations were rigorously addressed throughout the study. Informed consent was obtained from all participants, confidentiality was maintained through anonymization, and participation was entirely voluntary. These measures were implemented to uphold research integrity and ensure the ethical conduct of the study.

Overall, this methodological design enables a comprehensive and contextually grounded understanding of how environmental education policies are enacted within the complex socio-cultural landscape of elementary schools in Majalengka Regency.

• RESULT AND DISCUSSION

1. *Collective Appreciation and the Emergence of Ecological Habitus in School Ecosystems.*

The implementation of the Environmentally Aware and Culturally Integrated School Movement (GPBLHS) across elementary schools in Majalengka reveals a significant pattern of collective appreciation among stakeholders, which functions as an

early indicator of ecological value transformation within the school ecosystem. This appreciation is not merely expressed through formal endorsement but is manifested through evolving institutional practices, pedagogical orientations, and behavioral engagement. School principals increasingly position GPBLHS as a strategic framework for aligning institutional vision with sustainability-oriented character education, thereby reconfiguring leadership roles toward ecological stewardship. Teachers, in turn, interpret the program as a pedagogical bridge that enables the contextualization of curriculum content through project-based and experiential learning activities rooted in local environmental realities (Nurwidodo et al., 2020; L. P.-S. K. Parker, 2020).

From an analytical standpoint, this convergence of administrative commitment and pedagogical adaptation reflects the emergence of what can be termed ecological habitus, a system of durable dispositions toward environmental responsibility cultivated through repeated practices embedded in daily school routines. Students' active participation in activities such as waste sorting, school gardening, and environmental campaigns demonstrates that ecological values are internalized through embodied engagement rather than abstract instruction. This aligns with experiential learning theory, which posits that knowledge is constructed through direct experience and reflective practice (Kolb, 1984). Furthermore, the integration of such practices within the broader school culture resonates with holistic education perspectives, where learning is understood as an interconnected process involving cognition, emotion, and action (Miller, 2019).

The analytical significance of this finding lies in its indication that GPBLHS is beginning to move beyond programmatic formalities toward a culturally embedded educational practice. Parental recognition of behavioral changes, particularly in students' habits related to cleanliness and waste management, suggests that ecological values are being transmitted beyond the school environment into domestic spaces. This extension reflects the role of schools as agents of socio-ecological transformation rather than isolated instructional institutions. In addition, the involvement of community members in environmental activities points to the gradual formation of social capital that supports collective environmental action, where shared norms, trust, and participation become critical enabling conditions (Claridge, 2018; Putnam, 1995).

However, this collective appreciation should not be interpreted as a uniform or fully consolidated phenomenon. Variations in the intensity and quality of engagement across stakeholder groups reveal that the process of ecological value internalization remains uneven and context-dependent. While some schools demonstrate strong institutional alignment and community participation, others exhibit fragmented and superficial engagement. This variation suggests that collective appreciation remains in a transitional phase and requires systematic reinforcement through policy support, capacity building, and collaborative governance mechanisms (Astuti et al., 2020).

From a theoretical perspective, this finding contributes to the discourse on environmental education by illustrating how value transformation is mediated through institutional culture and social interaction rather than solely through curriculum design. It extends previous research emphasizing experiential and participatory learning in fostering environmental awareness (Ardoin et al., 2020; Boeve-de Pauw & Van Petegem, 2018) by demonstrating that such processes are deeply influenced by the alignment between leadership vision, pedagogical practice, and community engagement. Moreover,

it highlights that ecological habitus is not an automatic outcome of program implementation but a socially constructed process shaped by repeated practices, relational dynamics, and contextual conditions (Dessein et al., 2015).

In terms of policy implications, this finding underscores the importance of strengthening the integrative nature of GPBLHS by fostering coherence among stakeholders. Educational policies should not only mandate program implementation but also facilitate shared understanding, collaborative engagement, and continuous reflection across institutional and community boundaries (Pramono, 2020). Without such alignment, the transformative potential of environmental education risks being diluted into fragmented practices lacking systemic impact.

Thus, while collective appreciation represents a critical entry point for ecological transformation, its sustainability depends on the extent to which it can be institutionalized, culturally embedded, and supported by coherent governance structures. The presence of ecological habitus within school ecosystems signals a promising trajectory; however, its consolidation requires deliberate efforts to bridge existing gaps in interpretation, participation, and structural support.

2. *Interpretive Fragmentation and Divergent Stakeholder Meanings in Environmental Education.*

Despite the widespread acceptance of the Environmentally Aware and Culturally Integrated School Movement (GPBLHS) across elementary schools in Majalengka, the findings reveal a persistent pattern of interpretive fragmentation among stakeholders. This fragmentation extends beyond mere perceptual differences and reflects deeper epistemological divergences in how environmental education is conceptualized, valued, and enacted within school ecosystems. Each stakeholder group, principals, teachers, students, parents, and community members, constructs meaning through distinct institutional roles and cognitive frameworks, resulting in a fragmented interpretive landscape that undermines program coherence (Husin et al., 2020, 2023).

School principals tend to interpret GPBLHS through a strategic and normative lens, aligning it with character education and institutional identity formation. This perspective resonates with broader discourses on sustainable education and ecological literacy that emphasize moral and civic responsibility (Clavin, 2023; Hartono, 2020; Lickona, 1991). However, the translation of this vision into practice remains inconsistent due to limited alignment between strategic discourse and pedagogical execution. Teachers, in contrast, approach GPBLHS more instrumentally, recognizing its pedagogical potential but often experiencing it as an administrative burden shaped by compliance-oriented demands. Such tendencies reflect broader challenges in school-based program implementation, where institutional pressures and workload constraints shape teacher engagement and instructional practices (Collie & Mansfield, 2022; Dinler, 2024; Kingsford-Smith et al., 2023).

Students ¹⁶ demonstrate predominantly affective and experiential engagement with environmental activities, such as tree planting, waste management, and school cleaning programs. While these practices reflect elements of experiential learning, they do not consistently translate into critical ecological consciousness. This finding aligns with experiential learning theory, which emphasizes that meaningful learning requires not only participation but also reflection and conceptual integration (Kolb, 1984; Kong, 2021; Rahmi, 2024). Furthermore, ecological literacy studies suggest that behavioral

engagement without reflective depth may result in superficial understanding rather than sustained environmental responsibility (Lewinsohn et al., 2015; McBride et al., 2013; Murray & Poto, 2024).

At the community level, parents and local stakeholders tend to externalize responsibility for environmental education, perceiving it as primarily a school-based obligation. This limited engagement constrains the development of broader socio-ecological responsibility and weakens the formation of collective environmental norms. From a social capital perspective, such conditions indicate low levels of trust, participation, and shared norms necessary for collective action (Claridge, 2018; Mikiewicz, 2021; Putnam, 1995). The absence of strong community-school collaboration also reflects limitations in collaborative governance mechanisms that are essential for sustainability-oriented education (Astuti et al., 2020; Bryson et al., 2020; Emerson et al., 2012).

Analytically, this divergence can be conceptualized as interpretive fragmentation, where the absence of shared meaning leads to disjointed practices and weak institutional coherence. This condition is closely linked to policy enactment theory, which posits that policies are not implemented uniformly but are interpreted and reconstructed across contexts (Pramono, 2020). The findings suggest that GPBLHS functions not as a standardized program but as a socially constructed process shaped by competing interpretations and institutional logics. Consequently, misalignment between leadership vision, pedagogical practice, and community engagement limits the transformative potential of environmental education.

From a theoretical perspective, this phenomenon aligns with social learning theory, which emphasizes that learning and behavioral change emerge through interaction, observation, and shared meaning-making processes (Bandura, 1977). When interpretive frameworks remain fragmented, opportunities for collective learning and value internalization are significantly reduced. Moreover, constructivist perspectives highlight that knowledge is actively constructed through social interaction and contextual experience, further reinforcing the importance of shared interpretive frameworks in educational practice (Chand, 2024; Nerita et al., 2023).

Comparatively, prior studies on environmental education have emphasized integrative, participatory, and transformative approaches as key drivers of sustainability (Ardoin & Bowers, 2020; Boca & Saraçlı, 2019; Leal Filho et al., 2018). However, these studies often assume coherence among stakeholders, overlooking the interpretive tensions that emerge in real-world contexts. This study extends existing literature by demonstrating that even well-designed programs may fail when interpretive alignment is absent. It further aligns with transformative learning perspectives, which emphasize that meaningful change requires critical reflection, emotional engagement, and social interaction (Birdsall, 2025; Blake et al., 2013; Boström et al., 2024).

The causal dynamics underlying interpretive fragmentation can be traced to several interrelated factors. Limited dissemination of policy frameworks results in uneven understanding across stakeholders, while the absence of dialogic spaces prevents the negotiation of shared meanings. Additionally, institutional pressures, including administrative workload and accountability demands, encourage compliance-driven practices rather than reflective engagement. These conditions reinforce findings from

studies on environmental education barriers, which highlight structural and organizational constraints as key obstacles to sustainability-oriented learning (Foley, 2021; Husin et al., 2023; OECD, 2023).

The implications of this finding are both theoretical and practical. Theoretically, it reinforces the view that environmental education should be understood as a socially negotiated and context-dependent process rather than a top-down policy intervention. Practically, it underscores the need for policy strategies that prioritize communication, capacity building, and collaborative reflection. Schools must be supported in creating dialogic platforms where stakeholders can co-construct shared meanings, thereby reducing fragmentation and strengthening program coherence (Mathie et al., 2026; Plevyak, 2022).

In this regard, cultural embeddedness emerges as a potential pathway for bridging interpretive gaps. By integrating local values, traditions, and socio-cultural practices into environmental education, stakeholders may develop shared reference points that facilitate collective engagement. This aligns with perspectives that position culture as a central dimension of sustainability and environmental learning (Dessein et al., 2015; Panieri et al., 2024; L. Parker & Prabawa-Sear, 2019). However, cultural integration must be treated not as an additive component but as a foundational principle shaping both policy and pedagogical practice.

Thus, interpretive fragmentation represents a critical barrier to transforming GPBLHS into a coherent and sustainable educational movement. Addressing this challenge requires a shift from compliance-oriented implementation toward dialogic, participatory, and culturally grounded approaches that enable stakeholders to construct shared meanings and collective responsibility. Without such transformative environmental education risks remaining symbolic rather than transformative, limiting its capacity to address the complex challenges of sustainability in contemporary society.

3. Structural Disparities and Institutional Gaps as Determinants of Symbolic Implementation.

Beyond interpretive fragmentation, the findings reveal that the implementation of the Environmentally Aware and Culturally Integrated School Movement (GPBLHS) is significantly shaped by structural disparities and institutional gaps that constrain its transformative potential. These constraints are not peripheral but systemic, influencing how environmental education is translated from policy into practice across different school contexts. The identified dimensions, policy dissemination, resource availability, inter-agency coordination, and institutional capacity, reflect broader challenges in sustainability-oriented education systems, where institutional structures mediate the effectiveness of environmental learning initiatives (Foley, 2021; Leal Filho et al., 2018; OECD, 2023).

First, the uneven dissemination and operationalization of environmental education policies indicate a gap between formal policy design and practical enactment. Although regulatory frameworks such as Adiwiyata provide comprehensive guidelines, their translation into school practice remains inconsistent and fragmented. This condition aligns with policy implementation theory, which emphasizes the importance of communication clarity, resource allocation, and actor capacity in shaping policy outcomes (Pramono, 2020). Empirical studies on environmental education in Indonesia further demonstrate that insufficient guidance and limited teacher preparedness contribute

to variability in program execution (Husin et al., 2023; L. Parker & Prabawa-Sear, 2019). Consequently, schools tend to adopt compliance-oriented approaches that prioritize visible outputs over meaningful pedagogical transformation, reflecting patterns observed in sustainability education literature (Bahrudin, 2017; Pelita & Widodo, 2020).

Second, disparities in resource availability significantly influence the depth and sustainability of GPBLHS implementation. Schools with stronger institutional capacity are better positioned to integrate environmental education into strategic planning, curriculum innovation, and extracurricular engagement. In contrast, schools with limited resources rely heavily on individual initiative, resulting in fragmented and unsustainable practices. This phenomenon reflects broader educational inequality, where disparities in human, financial, and organizational resources shape learning outcomes (Dinler, 2024; OECD. & Asian Development Bank., 2015). Moreover, ecological literacy research suggests that sustained environmental learning requires consistent institutional support, without which behavioral change remains superficial (Boeve-de Pauw & Van Petegem, 2018; McBride et al., 2013; Murray & Poto, 2024).

Third, weak inter-agency coordination further exacerbates implementation challenges. Effective environmental education depends on collaborative governance involving educational institutions, environmental agencies, and community organizations. However, the findings indicate fragmented coordination characterized by overlapping roles and limited communication. From the perspective of collaborative governance theory, such fragmentation undermines collective action and reduces the effectiveness of multi-stakeholder initiatives (Astuti et al., 2020; Bryson et al., 2020; Emerson et al., 2012). Similar patterns have been observed in sustainability governance studies, which highlight that the absence of integrated coordination mechanisms limits the scalability and impact of environmental programs (Duan et al., 2020).

Fourth, limited institutional capacity for monitoring and evaluation constrains the sustainability of environmental education practices. Schools with stronger internal systems demonstrate higher levels of organizational learning, enabling continuous improvement and alignment with policy goals. Conversely, schools lacking systematic evaluation mechanisms exhibit reactive and fragmented implementation patterns. This disparity underscores the importance of organizational learning and reflexivity in educational innovation (Marsick & Watkins, 1999; Miller, 2019). It also reflects findings from school improvement research, which emphasize that institutional capacity is a key determinant of program sustainability (Dinler, 2024).

Analytically, these structural conditions contribute to what can be conceptualized as symbolic implementation, where environmental education activities are performed to fulfill formal requirements without generating substantive transformation. This phenomenon is structurally embedded, arising from the interaction between limited resources, weak coordination, and ambiguous policy guidance. Such conditions reinforce findings from environmental education research that highlight barriers to sustainability implementation, including institutional inertia, lack of capacity, and fragmented governance (Foley, 2021; Husin et al., 2023; Leal Filho et al., 2018).

From a comparative perspective, the contrast between high-performing and low-performing schools illustrates the critical role of institutional capacity in shaping implementation outcomes. High-capacity schools exhibit characteristics of adaptive

governance, including strategic planning, stakeholder collaboration, and continuous evaluation, enabling environmental education to function as a transformative practice. In contrast, low-capacity schools demonstrate reactive and fragmented implementation, reinforcing inequalities in both educational quality and sustainability outcomes. These findings align with broader literature on governance and organizational capacity, which emphasizes the role of institutional resources and leadership in driving innovation (Barney & Hesterly, 2020).

Theoretically, these findings extend environmental education discourse by foregrounding structural factors as key mediators of pedagogical processes. While previous studies emphasize experiential learning and ecological literacy as drivers of sustainability (Ardoin et al., 2020; Boeve-de Pauw & Van Petegem, 2018), this study demonstrates that such pedagogical innovations cannot be sustained without adequate institutional support. This highlights the necessity of integrating micro-level pedagogical analysis with macro-level policy and governance perspectives (Boström et al., 2024; Pisters et al., 2019).

Causally, the persistence of structural gaps can be attributed to top-down policy design combined with limited contextual adaptation. National-level policies often fail to account for local variations in capacity and resources, resulting in implementation mismatches. Additionally, insufficient capacity-building initiatives hinder the development of competencies required for effective program implementation. These dynamics reinforce a cycle of symbolic implementation, where policies are enacted superficially without achieving transformative impact, consistent with findings in sustainability education research (Fang et al., 2023; O'Grady, 2023).

The implications of these findings are substantial for both policy and practice. At the policy level, there is a need for differentiated, context-sensitive strategies that address structural inequalities and support capacity development. This includes strengthening policy communication, expanding professional development, and enhancing coordination mechanisms across sectors. At the institutional level, school leadership must play a proactive role in embedding environmental education into organizational culture and strategic planning. From a pedagogical perspective, teachers require both conceptual clarity and practical support to facilitate meaningful, student-centered environmental learning (Mathie et al., 2026; Pratiwi et al., 2025).

In conclusion, structural disparities and institutional gaps constitute a critical barrier transforming GPBLHS into a sustainable and impactful educational movement. Addressing these challenges requires a systemic approach that aligns policy design, institutional capacity, and collaborative governance. Without such alignment, environmental education risks remaining a symbolic endeavor, unable to fulfill its potential as a driver of ecological and cultural transformation (Pertiwi, 2017; Sachs, 2015).

4. Behavioral Transformation, Cultural Embeddedness, and the Reframing of Environmental Education.

The findings demonstrate that the Environmentally Aware and Culturally Integrated School Movement (GPBLHS) operates not merely as a programmatic intervention but as a medium for fostering observable behavioral transformation among students. Unlike conventional approaches that emphasize cognitive transmission, GPBLHS embeds environmental values through repetitive, contextually grounded practices within daily

school routines. Observable changes, such as waste sorting, reduced plastic consumption, improved hygiene, and environmentally responsible habits at home, indicate that environmental values are internalized as lived experiences rather than abstract knowledge. These findings align with ecological literacy and environmental education literature, which emphasizes that sustained behavioral change emerges from practice-based engagement rather than purely cognitive instruction (Boehnert, 2013; Lewinsohn et al., 2015; McBride et al., 2013).

Analytically, this transformation can be interpreted through experiential learning theory, where knowledge is constructed through action, reflection, and iterative engagement with real-world contexts (Kolb, 1984; Kong, 2021; Rahmi, 2024). The integration of environmental practices into everyday school life fosters not only cognitive awareness but also affective attachment and ethical commitment to sustainability. This process resonates with holistic education perspectives that emphasize the integration of intellectual, emotional, and behavioral dimensions in shaping learner identity (Mahmoudi et al., 2012; Miller, 2019; Miseliunaite et al., 2022). Furthermore, the emergence of habitual sustainability reflects the normalization of pro-environmental behavior, reinforcing findings that environmental education is most effective when embedded in routine and social practice (Ardoin et al., 2020; Boca & Saraçlı, 2019).

However, the depth and sustainability of behavioral transformation are strongly influenced by the degree of cultural embeddedness within implementation processes. Schools that successfully integrate local values, traditions, and communal practices into environmental activities demonstrate more consistent and durable behavioral outcomes. In such contexts, environmental education is perceived not as an externally imposed agenda but as an extension of existing cultural norms and ethical systems. This aligns with perspectives that position culture as a central dimension of sustainability, shaping how environmental values are interpreted and enacted (Dessein et al., 2015; Panieri et al., 2024). Place-based and culturally responsive approaches further highlight that environmental learning becomes more meaningful when connected to local contexts and lived experiences (Hägström & Schmidt, 2020; Pisters et al., 2019).

From a social capital perspective, cultural embeddedness facilitates the development of trust, shared norms, and collaborative engagement among stakeholders (Claridge, 2018; Mikiewicz, 2021; Putnam, 1995). The findings indicate that when environmental education is grounded in locally meaningful practices, it strengthens community participation and reinforces the relationship between schools and society. This dynamic aligns with collaborative governance frameworks, which emphasize the importance of collective action and multi-stakeholder engagement in addressing sustainability challenges (Bryson et al., 2020; Duan et al., 2020; Emerson et al., 2012). Consequently, GPBLHS can be understood not only as an institutional initiative but as a platform for mobilizing social capital and fostering a participatory culture of sustainability.

Nevertheless, the analysis also reveals that behavioral transformation remains uneven across school contexts, reflecting the interplay between cultural, structural, and interpretive dimensions. Schools with limited resources and weaker institutional capacity struggle to sustain behavioral change, as environmental practices are not consistently reinforced through organizational structures. This finding reinforces the argument that

behavioral outcomes are contingent upon systemic alignment rather than isolated pedagogical interventions (Foley, 2021; Leal Filho et al., 2018). It also reflects broader findings in environmental education research that highlight institutional capacity as a key determinant of sustainability outcomes (Husin et al., 2023; OECD, 2023).

Theoretically, this study contributes to the reframing of environmental education by integrating interpretive alignment, structural capacity, and cultural embeddedness as interdependent dimensions. While prior research has emphasized experiential learning and ecological literacy as central components (Ardoin et al., 2020; Boeve-de Pauw & Van Petegem, 2018), the present study extends this perspective by demonstrating that sustainable behavioral change requires the convergence of these dimensions. Environmental education must therefore be understood as a dynamic, socially constructed process emerging from interactions among actors, institutions, and cultural contexts (Fang et al., 2023; O'Grady, 2023).

The novelty of this research lies in its identification of stakeholder fragmentation as both a structural and epistemological barrier. Unlike previous studies that focus primarily on resource constraints or curriculum design, this study foregrounds interpretive dissonance as a critical determinant of implementation outcomes. Additionally, it positions cultural embeddedness not as a complementary factor but as a central mechanism for achieving transformative change. This perspective aligns with transformative learning theory, which emphasizes the role of reflection, experience, and social interaction in fostering deep and lasting change (Blake et al., 2013; Boström et al., 2024; Gal, 2026).

From a policy perspective, these findings highlight the need to reconceptualize environmental education as a context-sensitive and culturally responsive process. Policies should move beyond standardized frameworks toward flexible approaches that facilitate local adaptation, stakeholder dialogue, and capacity development (Pramono, 2020; Pratiwi et al., 2025). Strengthening inter-school collaboration and knowledge-sharing mechanisms is also essential to reduce disparities and promote the diffusion of effective practices (Mathie et al., 2026).

At the institutional level, school leadership plays a critical role in bridging policy and practice by fostering shared understanding, encouraging stakeholder engagement, and supporting continuous learning processes. Transformative leadership is necessary to align vision, pedagogy, and organizational culture, enabling environmental education to function as an integrated and sustainable practice (Dinler, 2024; Kingsford-Smith et al., 2023). Teachers, in turn, require sustained professional development to transition from compliance-driven approaches toward reflective and student-centered pedagogies (Collie & Mansfield, 2022; Jaekel et al., 2023).

Pedagogically, environmental education should be designed as a process of value internalization rather than mere knowledge transmission. This involves integrating reflective practice, critical inquiry, and community-based learning into educational activities, thereby fostering deeper ecological consciousness and agency among students ((Hart, 2013; Johnson, 2023; Kazazoglu, 2025). Such approaches reinforce the role of education as a transformative force capable of addressing complex sustainability challenges (Pertiwi, 2017; Sachs, 2015).

In conclusion, the findings affirm that GPBLHS holds significant potential as a transformative educational movement. However, realizing this potential requires a shift

from symbolic and fragmented implementation toward an integrated approach that aligns interpretive understanding, structural capacity, and cultural context. Environmental education must be reimagined as a living, socially constructed practice, continuously negotiated and collectively enacted, if it is to contribute meaningfully to sustainable development and socio-ecological resilience (Leal Filho et al., 2018; O'Grady, 2023).

The diagram synthesizes the interrelated dimensions discussed in the preceding sections, providing an integrative visualization of how interpretive fragmentation, structural barriers, cultural embeddedness, and behavioral transformation interact as key determinants of effective environmental education. Rather than being treated as isolated variables, these dimensions are conceptualized as part of a dynamic and mutually constitutive system within the broader context of policy enactment and educational practice. Interpretive fragmentation and structural constraints jointly contribute to the persistence of symbolic implementation, thereby limiting the transformative potential of environmental education.

Within this framework, cultural embeddedness functions as a mediating mechanism that bridges interpretive and institutional gaps by aligning environmental values with locally grounded practices and shared meanings. This alignment enables the emergence of behavioral transformation that is not merely temporary, but sustained and internalized within both school and community contexts. Consequently, the effectiveness of environmental education is not solely determined by policy design or pedagogical approaches, but by the degree of coherence and alignment among interpretive, structural, and cultural dimensions within a contextually responsive and sustainable system.

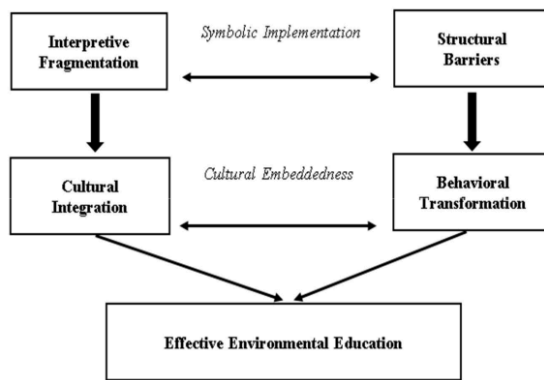


Figure 1. An Integrative Framework of Environmental Education: Linking Interpretive Fragmentation, Structural Barriers, Cultural Embeddedness, and Behavioral Transformation

15
• **CONCLUSION**

This study demonstrates that the effectiveness of school-based environmental education is shaped by the dynamic interplay of interpretive, structural, and cultural dimensions rather than by isolated programmatic interventions. While the GPBLHS initiative has fostered early forms of ecological habitus and behavioral change among students, its transformative potential remains constrained by persistent interpretive fragmentation and structural disparities. The findings reveal that environmental education operates as a socially constructed process, in which stakeholder interpretations, institutional capacities, and culturally embedded practices collectively determine implementation outcomes.

The study contributes to the field by positioning environmental education as a culturally grounded practice that extends beyond formal curriculum and institutional boundaries. It identifies stakeholder fragmentation as a central structural and epistemological challenge, demonstrating that misaligned interpretations among principals, teachers, students, and communities weaken program coherence and limit transformative impact. By foregrounding this issue, the research advances a more nuanced understanding of environmental education as a process of negotiated meaning rather than a linear policy intervention.

Theoretically, this study bridges the gap between policy and practice by integrating perspectives from policy enactment, experiential learning, and social capital into a context-sensitive framework. It reinforces the importance of aligning interpretive understanding with institutional capacity and cultural context, thereby strengthening the relevance of contextualized approaches in environmental education research.

Practically, the findings suggest that policymakers should move beyond standardized frameworks toward flexible and context-responsive strategies that promote stakeholder dialogue and capacity building. Schools need to adopt transformative leadership and foster collaborative cultures that integrate environmental values into everyday practices. Communities, in turn, must be engaged as active partners to sustain behavioral change beyond the school setting.

This study is limited by its contextual focus on Majalengka Regency, which may restrict generalizability to other regions with different socio-cultural and institutional conditions. Future research should explore comparative and longitudinal approaches to examine how environmental education evolves across diverse contexts and over time.

Ultimately, effective environmental education requires not only a formal commitment at the level of policy design, but also a sustained and dynamic alignment among meaning, structure, and culture within educational practice. This alignment entails the convergence of shared interpretive understanding among stakeholders, the availability of coherent institutional support systems, and the integration of environmental values into culturally grounded everyday practices. Without such alignment, educational initiatives risk being reduced to fragmented, compliance-driven activities that lack transformative depth and long-term impact. In this sense, sustainability cannot be achieved through technical interventions alone, but must be cultivated as a lived and embodied experience that is continuously negotiated within social, institutional, and cultural contexts. Therefore, the success of environmental education ultimately depends on its capacity to

bridge policy intentions with meaningful practice, ensuring that sustainability is not merely articulated as a normative ideal, but realized as an integral part of everyday life

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