

Building Students' Environmental Awareness through Local Wisdom: A Case Study of *Rasulan* in Gunung Kidul, Indonesia

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Abstract This study explores local wisdom-based learning through the *Rasulan* tradition and its role in fostering students' environmental awareness. Recognizing the limitations of top-down environmental education, the research adopts an exploratory qualitative case study approach with an ethnographic orientation to integrate local wisdom into formal schooling. Data were collected through interviews with teachers, students, and community leaders, participatory observation during *Rasulan* events, and document analysis of curricula and lesson plans. Thematic analysis revealed that *Rasulan* functions as a living educational resource that embodies environmental ethics through daily practices. Teachers creatively contextualized *Rasulan* values such as gotong royong (mutual cooperation) and environmental care into subjects like Science and Civics, linking ecosystem and waste management lessons to community rituals and civic discussions on environmental responsibility. Through project-based learning, reflective writing, and direct participation, students reported stronger environmental awareness, cultural pride, and an understanding of human-nature interdependence. The study also highlights a tripartite collaboration between schools, communities, and local governments as the key to sustaining this integration. This synergy transformed environmental learning into a community-wide experience that reinforced both sustainability and cultural continuity. Rather than

proposing a tested instructional design, the *Rasulan*-based learning model is presented as a conceptual framework derived from empirical findings, demonstrating that embedding indigenous wisdom in formal education fosters culturally resonant, participatory, and sustainable environmental learning aligned with the Education for Sustainable Development (ESD) agenda.

Keywords Environmental Awareness, Local Wisdom, Case Study, *Rasulan*

1. Introduction

The twenty-first century is marked by increasingly complex global environmental issues that threaten the balance of life on Earth. Climate change, ecosystem degradation, and natural resource crises have become critical challenges requiring innovative and contextually relevant solutions [1], [2], [3], [4]. These challenges are not only ecological but also social and educational in nature, requiring the active involvement of multiple sectors, including education. Within this context, environmental education plays a strategic role in shaping sustainable behavior [5], [6]. However, effectiveness depends on moving beyond theoretical knowledge toward the

internalization of values that guide daily environmental actions.

One promising approach to this transformation lies in local wisdom-based learning, which embeds environmental care values within culturally rooted knowledge systems. Local wisdom reflects a long-standing relationship between communities and their natural environment [7], [8], encompassing traditional ecological knowledge, rituals, and social norms that have sustained environmental balance across generations [9]. Despite its proven relevance in resource management and conservation practices, local wisdom remains underrepresented in formal education, which often prioritizes standardized curricula detached from local cultural contexts.

Integrating local wisdom into schooling offers a pathway to strengthen students' environmental awareness while simultaneously preserving cultural identity. Previous studies suggest that curriculum integration of indigenous knowledge enhances students' sensitivity toward environmental issues and encourages sustainable practices [10]. Local wisdom manifests in diverse forms, including ecological knowledge, customary regulations, and cultural rituals that reinforce environmental stewardship.

Despite broad recognition of the importance of environmental values and local wisdom, empirical research examining their systematic internalization within formal school settings remains limited [5], [11]. Many existing environmental education models adopt generic frameworks that overlook socio-cultural and ecological specificity [12]. As a result, such approaches often struggle to foster meaningful and sustained environmental awareness among students living in distinct local environments.

A growing body of literature argues that local wisdom-based education not only enriches the learning process but also increases its relevance and sustainability [13], [14], [15]. By linking traditional knowledge systems with modern scientific understanding, education can become a bridge between past and future, between cultural heritage and global sustainability goals [16]. Thus, integrating local wisdom into formal environmental education is both a cultural necessity and an ecological imperative.

However, the integration of local wisdom into formal environmental education faces several significant challenges. First, there is a limited number of structured learning models that effectively combine traditional local values with contemporary environmental education frameworks [7], [17]. Most schools rely on centralized curricula that offer little flexibility to accommodate regional cultural diversity or local ecological conditions [18].

Second, the mechanisms for community participation in formal education remain weak. Local wisdom is typically preserved and transmitted through informal social and cultural practices rather than through formal classroom instruction [19], [20], [21]. Consequently, educators face difficulties in designing pedagogical strategies that meaningfully involve the community as co-educators or

cultural transmitters within the school context.

Third, the forces of globalization and modernization have accelerated the marginalization of local wisdom [22], [23], [24]. The younger generation, influenced by digital culture and global consumerism, often perceives traditional knowledge as outdated or irrelevant. This shift in perspective poses a serious threat to cultural continuity and environmental stewardship, as local wisdom is intrinsically linked to sustainable environmental behavior. Without deliberate efforts to revitalize and embed these values in education, many traditions that uphold environmental care risk being forgotten.

Furthermore, there remains a disconnect between environmental education and the SDGs. While both share the ultimate objective of sustainability, school-level environmental learning rarely addresses SDG targets in an integrated manner [16], [25], [26]. This gap prevents students from understanding how local actions contribute to global sustainability agendas, such as responsible consumption, quality education, and community resilience.

The integration of local wisdom-based environmental care values in formal education offers multiple benefits. At the pedagogical level, it provides contextual and experiential learning opportunities that connect students with their immediate environment. This approach aligns with constructivist theories of learning, emphasizing that knowledge is best constructed through direct experience and cultural relevance [27], [28].

At the socio-cultural level, embedding local wisdom into environmental education helps preserve cultural heritage while reinforcing a sense of identity and belonging among students. It nurtures respect for local traditions and enhances intergenerational knowledge transfer, ensuring that valuable ecological practices continue to guide human-nature relationships [12], [29]. In this sense, schools become not only centers of academic learning but also custodians of cultural sustainability.

The significance of this study also lies in its potential to bridge the gap between traditional ecological knowledge and modern scientific education. Existing studies have provided valuable insights into local wisdom and environmental education, yet they often stop short of proposing applicable learning models that can be implemented within secondary school settings [6]. Research has also shown that most environmental curricula lack integration between local cultural contexts and global sustainability frameworks.

In this study, local wisdom-based learning is understood as an educational approach that integrates indigenous knowledge, cultural practices, and community values into formal schooling. Environmental awareness refers to students' cognitive understanding, moral orientation, and everyday behaviors related to environmental care and sustainability.

Given these gaps, this study aims to develop a contextual and holistic learning model that integrates environmental care values, local wisdom, and SDG-related issues within

the framework of secondary education. Based on the background and gaps identified above, this study formulates the following research questions to guide the investigation:

1. How is the process of internalizing local wisdom-based environmental care values and SDGs issues in secondary schools?
2. What are the supporting and inhibiting factors in the internalization of local wisdom-based environmental care values in secondary schools?
3. What is the role of the local community in supporting the learning of environmental care values in secondary schools?

To guide the analytical focus of this study, a conceptual framework is presented (Figure 2), illustrating how local wisdom-based learning through the *Rasulan* tradition is mediated by school practices to foster students' environmental awareness and civic values. This framework serves as an interpretive lens for organizing the data analysis and discussing the relationships among cultural practices, pedagogical integration, and learning outcomes.

2. Materials and Methods

2.1. Research Design

This study employed a qualitative research design with an ethnographic orientation, aiming to explore how the *Rasulan* tradition, a cultural ritual deeply rooted in the agrarian life of Gunungkidul, Indonesia, can be meaningfully integrated into environmental sustainability education at the junior high school level. The ethnographic approach was chosen because it enables a deep contextual understanding of cultural practices and their symbolic meanings within the natural and social environments. Fieldwork was conducted over a period of approximately six months, involving repeated visits before, during, and after the annual *Rasulan* celebration to capture both ritual practices and everyday educational interactions. The design integrates interpretive and participatory paradigms, positioning researchers as both observers and collaborators in the learning environment.

2.2. Research Setting

The research was conducted in Gunungkidul Regency, part of the Yogyakarta Special Region, Indonesia (Map: <https://maps.app.goo.gl/YP3xZzbeVxCyY1CFA>) (Figure 1). The region is renowned for its karst landscape, characterized by rocky hills, thin soil layers, and scarce surface water. Agricultural life in this area is shaped by seasonal rainfall patterns, which necessitate strong communal cooperation for managing water and maintaining ecological balance.

Within this context, the *Rasulan* tradition, also known as *Merti Desa* (village purification or thanksgiving), plays a crucial role in fostering environmental consciousness. Typically held after the harvest and before the rainy season, *Rasulan* involves collective cleaning of the village, restoration of public spaces, and ceremonial offerings to express gratitude for agricultural blessings. The ritual represents not only a religious or cultural expression but also a form of ecological governance, ensuring environmental maintenance and social harmony.

The educational setting of this study focused on three purposively selected junior high schools located in rural areas of Gunungkidul. These schools were selected based on the following criteria:

1. Active involvement in community-based and cultural education programs.
2. Proximity to villages that maintain *Rasulan* as an annual tradition.
3. Implementation of environmental and local wisdom programs aligned with the Adiwiyata (green school) initiative.

These schools represent a hybrid learning ecosystem where formal education intersects with informal community practices, allowing researchers to trace how students internalize environmental values through both school and village activities.

2.3. Participants and Sampling

Participants were selected through purposive sampling, ensuring diversity across stakeholders directly involved in *Rasulan* and school-based sustainability education. The participant groups included:

1. Teachers: particularly those teaching Science, Social Studies, Civics, and Local Content subjects, who play a central role in integrating *Rasulan* into classroom pedagogy.
2. Students: junior high school learners who have participated in both classroom and community activities related to *Rasulan*.
3. Community Leaders and Elders: custodians of the tradition who serve as cultural informants, providing insights into the symbolic and ecological dimensions of *Rasulan*.
4. Village Government Representatives: including environmental officers and education desk officials who support local collaboration.
5. School Principals and Committee Members: institutional actors responsible for designing and legitimizing collaborative educational programs.

The number of participants was determined through data saturation, meaning interviews continued until no new information emerged. In total, the study involved 35 participants, including 10 teachers, 15 students, 5 community elders, and 5 local government officials.

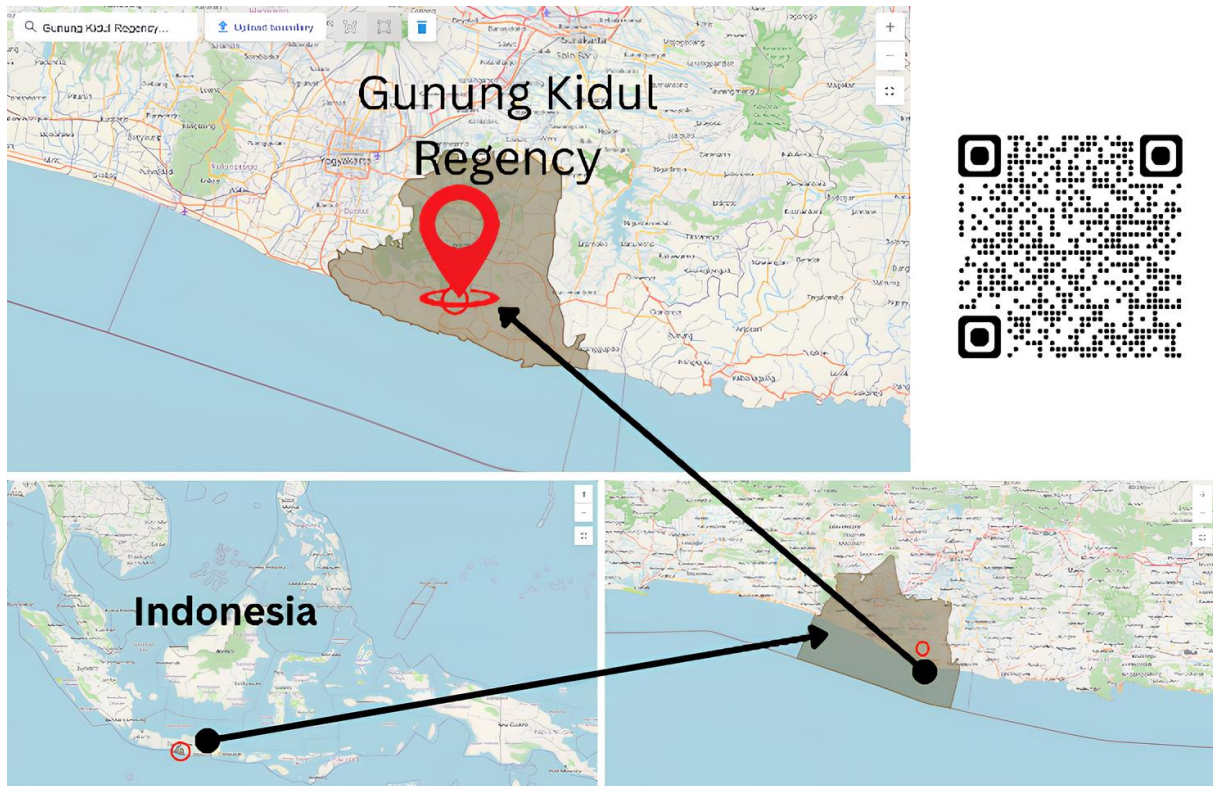


Figure 1. Research Location: Gunung Kidul, Indonesia

2.4. Data Collection Procedures

2.4.1. In-Depth Interviews

Semi-structured interviews were conducted with teachers, students, community leaders, and local officials to understand their perspectives on *Rasulan*'s environmental significance and its educational potential. Interviews with teachers explored curriculum strategies, challenges, and student responses, while interviews with students focused on perceptions, attitudes, and behavioral changes related to environmental care. Each session lasted between 45 and 90 minutes, recorded with consent and later transcribed verbatim.

2.4.2. Participant Observation

The researcher engaged directly in *Rasulan* events, especially during *bersih dusun* (village cleaning) and *kenduren* (communal feast). The level of participation ranged from non-intrusive observation to limited active involvement alongside community members, allowing the researcher to experience the flow of activities while maintaining an analytical stance. Observation focused on community cooperation, waste management practices, and the symbolic use of natural materials. In schools, classroom observations were conducted to examine how *Rasulan*-related content was integrated into lessons and extracurricular projects. Field notes captured contextual details, non-verbal expressions, and community dynamics across multiple observation sessions to ensure depth and

consistency of cultural interpretation.

2.4.3. Document Analysis

Relevant documents were analyzed to triangulate findings, including:

1. School curricula and lesson plans emphasizing local content and environmental themes.
2. Village archives and government reports on cultural and ecological programs.
3. Photographs, videos, and field documentation of *Rasulan* events.

Table 1 presents a concise summary of the key data types, the methods used for their collection, and the corresponding sources.

This multi-method approach ensured methodological triangulation, allowing data to be validated across multiple sources and perspectives.

2.5. Data Analysis and Trustworthiness

Data analysis followed a thematic approach, drawing upon Braun and Clarke's six-phase model: data familiarization, coding, theme generation, theme review, theme definition, and reporting. The process began with manual and digital coding of interview transcripts and observation notes to identify recurring patterns related to (1) environmental values in *Rasulan*, (2) pedagogical integration, and (3) behavioral outcomes in students.

Table 1. Summary of the key data types, collection methods, and sources

Data to be Collected	Techniques of Collection	Sources of Data
Description of <i>Rasulan</i> activities, values, and environmental elements	Participant observation, interviews	Community elders, tradition organizers, village archives
Educational practices integrating <i>Rasulan</i> into school learning	Interviews, document analysis	Teachers (science, social studies, civics, local content), school principal, curriculum documents
Students' perceptions and awareness of environmental sustainability linked to <i>Rasulan</i>	Focus group discussions, interviews	Junior high school students
Community-school collaboration in <i>Rasulan</i> and environmental programs	Interviews, document analysis	Village officials, school committees, and local government officers
Supporting records of cultural and environmental activities	Document analysis, field documentation (photos, videos)	Village archives, school records, government reports

The themes were then grouped into analytical categories, such as community participation, cultural identity, environmental care behavior, and school-community collaboration. These categories were later mapped to theoretical constructs from environmental education and value internalization theory.

To ensure qualitative rigor, several trustworthiness strategies were employed. Credibility was enhanced through methodological triangulation across interviews, participant observation, and document analysis, as well as prolonged engagement in the field during multiple phases of the *Rasulan* cycle. Transferability was supported by providing rich, thick descriptions of the cultural, educational, and environmental context of the study. Dependability was addressed by maintaining a systematic audit trail of data collection procedures, coding decisions, and theme development processes. Confirmability was strengthened through reflexive memo writing and peer debriefing, ensuring that the findings were grounded in the data rather than the researcher's assumptions.

2.6. Ethical Considerations

This study adhered to the ethical principles of qualitative research. Informed consent was obtained from all participants prior to data collection, and participation was voluntary with the right to withdraw at any time. Participants were informed about the research purpose, procedures, and use of data for academic publication. Confidentiality and anonymity were ensured through the use of pseudonyms and the removal of identifying information. Audio recordings were conducted only with participants' permission, and all data were securely stored and accessible solely to the research team.

3. Results

3.1. *Rasulan* Tradition as a Cultural Practice of Environmental Awareness

The observed *Rasulan* tradition served as a profound,

community-wide pedagogical event, where environmental care values were internalized through direct practice rather than theoretical instruction. The activities formed a cohesive cycle of action and gratitude: it commenced with a collective *bersih dusun* (village cleaning), followed by the meticulous *perawatan sumber air* (maintenance of local water springs), and culminated in a *gotong royong* (mutual cooperation) to repair public irrigation channels and village facilities. These tangible actions embodied core local values, most notably a deep-seated ethic of *gotong royong* (mutual cooperation), *kepedulian lingkungan* (proactive environmental stewardship), *rasa syukur* (heartfelt gratitude) for the year's harvest, and strong social solidarity (*solidaritas sosial*). The continuity of this holistic tradition was ensured through the pivotal role of *tokoh adat* (customary leaders), who organized the events and provided spiritual guidance, and the unwavering participation of the wider community, demonstrating a shared intergenerational commitment to preserving both their culture and their natural environment. Table 2 outlines the elements of the *Rasulan* tradition that are closely related to fostering environmental awareness.

3.2. Integration of *Rasulan* into Junior High School Learning

The integration of the *Rasulan* tradition into the junior high school's curriculum was observed to be multifaceted and actively championed by educators. Teachers demonstrated innovative pedagogical practices by creating explicit connections between the tradition and various subjects. In Science, lessons on environmental sustainability and water ecosystems were linked to the *bersih dusun* and water spring maintenance activities. Social Studies lessons used *Rasulan* as a case study to discuss social structures, cultural continuity, and local economics, while Civics classes reflected on the values of *gotong royong* (mutual cooperation) and civic responsibility embodied by the tradition. Furthermore, the local content curriculum was directly built around documenting and participating in the festival. This integration took shape through diverse methods, including

in-class discussions analyzing the tradition's values, hands-on projects like school clean-up campaigns mirroring the village activities, reflective writing assignments, and direct student participation in the village's *Rasulan* events. This systematic approach was strongly supported by school policy, particularly its commitment to the national Adiwiyata program (an eco-school initiative), which provided a framework for its environmental activities, and the ongoing development of a formal local wisdom-based curriculum that legitimized the use of indigenous knowledge as a core learning resource. Table 3 illustrates how the *Rasulan* tradition can be integrated into junior high school learning activities.

3.3. Students' Perceptions and Environmental Awareness through *Rasulan*

The research findings revealed a significant positive impact on students' environmental awareness and personal

attitudes through their engagement with the *Rasulan* tradition. Student perceptions indicated a deepened understanding of *Rasulan's* intrinsic value, with many articulating its critical role in maintaining village cleanliness and ensuring environmental sustainability for future generations. This translated into tangible changes in attitude and behavior, including a greater conscientiousness in maintaining school cleanliness, more active and voluntary involvement in community projects beyond the school walls, and a strengthened sense of cultural identity and pride. However, a notable variation was observed among the students; those who were active participants in the village's *Rasulan* activities demonstrated a more profound and internalized comprehension of its values and purposes compared to their peers who merely acted as observers, suggesting that direct, hands-on participation is a key factor in the effective internalization of environmental and cultural values.

Table 2. Elements of *Rasulan* Tradition Related to Environmental Awareness

<i>Rasulan</i> Activity	Environmental Element	Social/Cultural Value	Supporting Source (Interview/Observation)
<i>Bersih dusun</i> (village cleaning)	Waste reduction, sanitation, and prevention of disease	<i>Gotong royong</i> (mutual cooperation), responsibility for shared space	“During <i>Rasulan</i> , everyone (from children to elders) cleans the village together. It reminds us that the environment belongs to all.” (Community elder, Interview, June 2025)
Maintenance of wells and public facilities	Water conservation, care of common resources	Intergenerational solidarity, stewardship of nature	Observation: Youth group repairing the well, supervised by elders. Documented in village report (2024).
Ritual offerings and thanksgiving after harvest	Respect for natural cycles, harmony with agriculture	<i>Syukur</i> (gratitude), spiritual connection to nature	Teacher’s note: “We teach students that <i>Rasulan</i> reflects respect for the environment as a gift of God.” (Interview, July 2025)
Collective meal preparation and sharing	Sustainable food use, avoidance of waste	Equality, community bonding	Observation: Food shared in banana leaves instead of plastic; minimal waste recorded.

Table 3. Integration of *Rasulan* Tradition into Junior High School Learning

Subject Area	Integration Strategy	Learning Activity Example	Teacher’s Perspective
Science	Linking <i>Rasulan</i> cleaning to environmental science	Students observe waste sorting during <i>Rasulan</i>	“By connecting <i>Merti Desa</i> (village cleansing) to our science lessons, students realize that waste management is not just theory, but a lived tradition in their community.” “Students became more active in asking questions and linking <i>Rasulan</i> practices to ecosystem and environmental health concepts.”
Social Studies	Local tradition as social capital	Group project on village rituals	“When students learn about <i>Rasulan</i> , they understand how culture fosters cooperation, solidarity, and mutual help in solving local problems.” “Classroom discussions became more engaging as students brought direct experiences from their community.”
Civics	Value of collective responsibility	Reflection essay on civic duties	“ <i>Rasulan</i> shows students that civic responsibility is not only about government rules, but also about shared duties to keep the environment and public spaces clean.” “Through reflective writing, students began to see themselves as responsible citizens, not merely learners.”

4. Discussion

4.1. *Rasulan* Tradition as a Cultural Practice of Environmental Awareness

The *Rasulan* tradition, deeply rooted in Javanese agrarian culture, functions not merely as a thanksgiving ritual but as a community-based pedagogical system, through which environmental awareness is cultivated and internalized. Observations and interviews indicate that environmental values are learned through shared practices and collective responsibility rather than formal instruction, reflecting indigenous education principles that emphasize experiential, participatory, and culturally grounded learning [18].

Rather than being understood as a series of isolated rituals, *Rasulan* operates as an integrated ecological practice that links environmental care, social cohesion, and moral obligation. Core activities such as *bersih dusun* (village cleaning), maintenance of local water sources, and collective repair of irrigation channels embed ecological responsibility into everyday communal life. These practices reinforce sanitation, resource stewardship, and shared ownership of environmental well-being. As one community elder stated, “During *Rasulan*, everyone cleans the village together. It reminds us that the environment belongs to all” (Interview, June 2025).

Intergenerational participation plays a central role in this process. Youth involvement under the guidance of elders enables the transmission of ecological ethics alongside practical environmental management. This dynamic illustrates *Rasulan*'s contribution to ecological literacy, understood as a shared capacity to recognize, care for, and sustain local ecosystems through collective action [9], [30]. Environmental knowledge is thus inseparable from social relations and cultural continuity.

Spiritual elements further deepen this learning process. Ritual offerings and thanksgiving practices express *rasa syukur* (gratitude) toward God and respect for nature as a divine gift, framing environmental care as a moral and spiritual responsibility. As one teacher explained, “We teach students that *Rasulan* reflects respect for the environment as a gift of God” (Interview, July 2025). This integration of spirituality and ecology strengthens the ethical dimension of environmental awareness, moving beyond utilitarian conservation narratives.

Sustainable consumption practices are also embedded within *Rasulan*, particularly during *kenduren* (collective meal preparation). The use of biodegradable materials, such as banana leaves, and the avoidance of excessive waste demonstrate environmentally conscious behavior enacted through social rituals. These practices position environmental awareness not as an abstract concept but as a lived moral order embedded in communal routines.

Viewed pedagogically, *Rasulan* exemplifies a form of community-based and place-based learning aligned with social learning theory, where knowledge is acquired

through observation, participation, and shared meaning-making [31], [32]. The involvement of customary leaders, youth groups, women's organizations, and elders creates a multilayered learning environment that dissolves hierarchical boundaries and fosters what can be described as ecological community consciousness, in which individual well-being is understood as inseparable from collective and environmental well-being [4], [19], [20].

For schools, *Rasulan* offers a culturally resonant framework for contextualizing environmental education. By adapting *Rasulan*-inspired activities into project-based and community-engaged learning, teachers can connect formal curricula with lived environmental practices, thereby strengthening ESD competencies such as collaboration, empathy, and critical reflection while maintaining cultural authenticity [18], [33]. Nevertheless, institutional constraints remain, as standardized curricula often limit local adaptation. Recognizing indigenous cultural practices as legitimate pedagogical resources is therefore essential to bridge formal education and community-based environmental learning.

4.2. Integration of *Rasulan* into Junior High School Learning

The integration of the *Rasulan* tradition into junior high school learning demonstrates how local cultural practices can function as a cross-curricular pedagogical framework rather than as isolated cultural content. Teachers intentionally embedded *Rasulan* values into multiple subjects, enabling environmental awareness, civic responsibility, and cultural understanding to be addressed simultaneously within formal curricula.

In the Science curriculum, *Rasulan*-related practices such as *bersih dusun* (village cleaning) and *perawatan sumber air* (water source maintenance) were linked to lessons on ecosystems, waste management, and water cycles. This integration helped bridge scientific concepts with students' lived experiences, allowing abstract ecological knowledge to be understood through familiar community practices. As one science teacher explained, “By connecting *Merti Desa* to our science lessons, students realize that waste management is not just theory, but a lived tradition in their community.”

Social Studies further expanded this approach by positioning *Rasulan* as an example of social capital, collective action, and cultural continuity. Through group projects and classroom discussions, students examined how *gotong royong* (mutual cooperation) sustains social resilience and local governance. One teacher noted, “When students learn about *Rasulan*, they understand how culture fosters cooperation, solidarity, and mutual help in solving local problems.” This illustrates how cultural traditions can serve as analytical lenses for understanding community sustainability.

Civics education integrated *Rasulan* to contextualize civic duties and moral responsibility. Reflection essays and

discussions encouraged students to relate environmental care to public responsibility and national values, particularly the principles of justice and humanity embedded in Pancasila. As one teacher stated, “*Rasulan* shows students that civic responsibility is not only about government rules, but also about shared duties to keep the environment and public spaces clean.” Through this integration, civic learning became closely tied to everyday environmental practice.

Pedagogically, teachers employed participatory strategies such as discussion-based learning, project-based tasks, reflective writing, and experiential activities. These approaches emphasized active student engagement rather than passive content transmission. Storytelling sessions introduced cultural meanings, while hands-on projects—such as school clean-up campaigns—translated *Rasulan* values into concrete action. Reflective writing revealed that students increasingly articulated environmental awareness through moral and spiritual language, often linking stewardship to *rasa syukur* (gratitude).

Institutional support played a critical role in sustaining this integration. Alignment with the Adiwiyata program provided a formal framework for embedding environmental values across school policies and practices. In addition, the inclusion of *Rasulan* within the Muatan Lokal (local content curriculum) legitimized indigenous knowledge as a pedagogical resource, enabling teachers to design *Rasulan*-based modules with institutional backing. Collaboration with customary leaders and community members ensured cultural authenticity while strengthening school–community partnerships.

Overall, the integration of *Rasulan* into junior high school learning illustrates a hybrid pedagogical model that connects indigenous wisdom with formal education. Consistent with culturally responsive and place-based education principles [34], [35], as well as experiential learning theory and communities of practice [36], [37], [38], [39], [40], this approach enables environmental education to be contextually meaningful and institutionally sustainable. By embedding *Rasulan* across subjects and supported by policy, schools transform local tradition into

a coherent educational resource that fosters ecological literacy, civic responsibility, and cultural continuity.

4.3. Students' Perceptions and Environmental Awareness through *Rasulan*

Students’ perceptions indicate that *Rasulan*-related activities contributed to a strengthening of environmental awareness grounded in lived experience rather than abstract instruction. Interviews revealed that students frequently described *Rasulan* as an “eye-opening” experience that prompted reflection on everyday habits and responsibilities toward the environment.

As illustrated in Table 4, students involved in Science-related activities reported that participating in village cleaning and waste sorting helped them understand the ecological logic of sanitation. One student stated, “When we joined the village cleaning during *Rasulan*, I understood why keeping the river and streets clean matters for everyone’s health.” Another student similarly reflected, “After participating in *Rasulan*, I became more careful about disposing of waste because I felt it was a shared responsibility.” Together, these reflections illustrate a shift from environmental cognition to environmental affect—moving from knowing about the environment to caring for it.

Evidence of behavioral change, however, is based primarily on self-reported interviews, teacher observations, and short-term engagement following *Rasulan* activities. Teachers observed that many students became more proactive in maintaining school cleanliness, reducing littering, and initiating small-scale environmental projects such as recycling bins and plant cultivation around the schoolyard. These actions align with the objectives of Indonesia’s Adiwiyata program, which emphasizes the embodiment of ecological values in school culture. Nevertheless, in the absence of longitudinal tracking or objective behavioral measurement tools, claims regarding sustained behavioral change should be interpreted cautiously.

Table 4. Students’ Perceptions of *Rasulan* and Environmental Awareness

Subject Area	Integration Strategy	Learning Activity Example	Students’ Perspective
Science	Linking <i>Rasulan</i> cleaning to environmental science	Students observe waste sorting during <i>Rasulan</i>	“When we joined the village cleaning during <i>Rasulan</i> , I understood why keeping the river and streets clean matters for everyone’s health.”
Social Studies	Local tradition as social capital	Group project on village rituals	“Working with neighbors in preparing <i>Rasulan</i> made me feel proud of my culture and learn how important cooperation is.” I learned that culture is not just about the past, but about how we work together to care for the village today.”
Civics	Value of collective responsibility	Reflection essay on civic duties	“Through <i>Rasulan</i> , I realized that taking care of the environment and welcoming guests is also part of my duty as a young citizen.” “I felt responsible not only as a student, but as part of the community.”

Beyond environmental awareness, *Rasulan* also shaped students' cultural identity and cooperative values. Participation in communal rituals and preparations fostered pride in local heritage and reinforced gotong royong (mutual cooperation) and *rasa syukur* (gratitude). As one student expressed, "Working with neighbors in preparing *Rasulan* made me feel proud of my culture and learn how important cooperation is," while another added, "While working together during *Rasulan*, I learned to listen to others and help each other without being told." These accounts highlight how environmental learning was intertwined with social solidarity and moral formation.

From a socio-cultural perspective, these experiences reflect social constructivist learning processes, where meaning is constructed through interaction and shared cultural practice [41], [42]. Students learned alongside elders, teachers, and peers in authentic settings, transforming environmental care into a collective and intergenerational endeavor. Teachers further noted improvements in students' interpersonal relationships and a stronger sense of shared purpose, resonating with civic education goals embedded in Pancasila values, particularly unity and social justice.

The depth of students' understanding varied according to their level of participation. Those actively involved in *Rasulan* preparations demonstrated more internalized comprehension of environmental and cultural values, while those with limited participation tended to offer more superficial interpretations. This pattern supports Dewey's notion of reflective experience, in which learning emerges through the integration of action and reflection [43], as well as Lave and Wenger's concept of legitimate peripheral participation within a community of practice [44].

Overall, *Rasulan* functioned as an experiential and transformative learning context in which environmental knowledge, moral reasoning, and cultural identity converged. Consistent with experiential and transformative learning theories [45], students' perceptions evolved from passive awareness toward a sense of environmental stewardship grounded in emotional, cultural, and spiritual engagement. Through *Rasulan*, environmental care was reframed not merely as a school subject, but as a shared moral and civic responsibility embedded in community life.

4.4. Synthesis: From Local Wisdom to Sustainable Education

This study synthesizes its findings by positioning *Rasulan* as a form of ecological pedagogy rooted in local wisdom, where environmental education emerges from lived cultural practice rather than formalized instruction alone. Core elements of *Rasulan*—such as village cleaning (*bersih dusun*), water source maintenance, ritual offerings, and communal meals—embody long-standing principles of sustainability, including collective resource management, respect for natural cycles, and gratitude for environmental abundance. These practices function as a *cultural*

curriculum: a lived syllabus through which ecological ethics are transmitted intergenerationally through participation, ritual, and social interaction.

By conceptualizing *Rasulan* as an ecological pedagogy, this study extends understandings of sustainability education beyond textbook-based approaches. Environmental care is not framed as an abstract moral injunction but as a communal responsibility enacted through shared practice. This was evident in students' narratives, where those who actively participated described *Rasulan* as a personal obligation rather than a ceremonial event. Such differentiation underscores the pedagogical significance of participation intensity in shaping value internalization. Learning occurred not through observation alone, but through embodied engagement that integrated action and reflection, consistent with critical and experiential pedagogical traditions [46], [47].

Within this framework, schools emerged as key mediating institutions that translated cultural wisdom into structured educational experiences. Teachers and school leaders played a pivotal role in formalizing *Rasulan* within curriculum design, integrating it across Science, Social Studies, and Civics subjects. This process transformed a community tradition into a pedagogical innovation aligned with national initiatives such as *Adiwiyata* and global sustainability frameworks. Through the *Muatan Lokal* curriculum, indigenous knowledge gained institutional legitimacy, allowing local ecological practices to function as valid educational resources rather than informal supplements.

This school-mediated integration aligns closely with principles of place-based education, which emphasize learning *through* local culture, history, and ecology rather than merely *about* sustainability [48]. Students' emotional engagement and moral commitment were strengthened because learning was situated within familiar social and environmental contexts. *Rasulan* thus functioned as an annual pedagogical anchor, around which sustainability projects such as waste reduction campaigns, tree planting, and documentation of traditional ecological knowledge were organized. Over time, these practices contributed to the formation of a school culture of care, where environmental responsibility became embedded in institutional identity.

A central outcome of this synthesis is the identification of a tripartite collaboration among community, school, and village government. Each actor contributed complementary functions: the community preserved cultural authenticity and embodied ecological knowledge; the school structured learning and reflection; and the village government provided policy support and institutional continuity. This collaboration transformed *Rasulan*-based learning from a seasonal cultural event into a sustainable educational ecosystem. Environmental initiatives within schools were reinforced by community practices, while community traditions were revitalized through student participation and formal recognition.

From a systems perspective, this arrangement reflects the operation of sustainability education across multiple ecological levels, as articulated in Bronfenbrenner’s ecological systems theory [49]. *Rasulan*-based education operates simultaneously within the microsystem (student learning experiences), mesosystem (school–community interaction), and exosystem (local governance and policy support). The alignment of these levels creates a reinforcing loop in which environmental values are continuously cultivated through social, cultural, and institutional mechanisms.

This synthesis demonstrates that sustainable education is most effective when it is culturally grounded, experientially enacted, and institutionally supported. *Rasulan* illustrates how indigenous wisdom can be mobilized as a transformative pedagogical resource, bridging environmental literacy, moral education, and cultural continuity. Rather than positioning sustainability as an externally imposed agenda, *Rasulan* reframes it as an inherited responsibility renewed through education. In this sense, sustainable development begins not with global prescriptions, but with locally rooted learning ecosystems that cultivate care for both culture and nature.

In terms of policy relevance (as summarized in Table 5), the findings highlight that supporting community-based learning can enrich local curricula, enhance teacher capacity, and strengthen school-community networks.

Local governments can play a strategic role by institutionalizing cultural-ecological education through regulations that encourage schools to integrate indigenous knowledge into formal learning.

The educational implications are equally profound. The *Rasulan* model shows that sustainability education need not rely solely on imported frameworks. It can grow organically from local wisdom, provided there is collaborative governance and reflective pedagogy. This has potential for replication in other cultural contexts across Indonesia and beyond, where indigenous traditions contain

untapped ecological insights.

The synthesis of findings culminates in a model of sustainable education rooted in local wisdom. It can be conceptualized as a dynamic cycle:

1. Cultural Practice (*Rasulan*): functions as the experiential and value-based foundation of ecological ethics.
2. Educational Translation (School Integration): operationalizes these values through formal teaching, reflection, and project-based learning.
3. Learner Transformation (Student Awareness): manifests as increased environmental responsibility, cultural pride, and civic engagement.
4. Collaborative Reinforcement (Community–School–Government Partnership): sustains the ecosystem through ongoing participation, resource sharing, and policy support.

This cyclical model creates an education for sustainability ecosystem, ensuring that environmental care values are continuously regenerated through culture, education, and governance. Figure 2 conceptualizes this process as a “Model of Local Wisdom-Based Sustainable Education through *Rasulan*.”

The model illustrates a triangular relationship among Community (Local Wisdom), School (Pedagogical Integration), and Students (Environmental Awareness), encircled by Government Support (Policy Framework). Arrows between these entities represent reciprocal exchanges (knowledge, participation, and values) forming a continuous feedback loop. The center of the model symbolizes Sustainable Education Outcomes, encompassing ecological literacy, cultural preservation, and civic responsibility.

The *Rasulan*-based model of sustainable education presents an innovative approach that harmonizes indigenous ecological knowledge, formal educational structures, and community collaboration.

Table 5. Synthesis of *Rasulan* Tradition, School Practices, and Student Awareness

Dimension	Key Findings	Educational Implications	Policy Relevance
Cultural tradition	<i>Rasulan</i> functions as a lived ecological pedagogy that reinforces environmental awareness and social cohesion	Can be integrated into formal education as local wisdom-based learning	Supports contextualized local curriculum enrichment
School practices	Teachers translate cultural practices into curricular and pedagogical strategies	Enhances experiential and culturally responsive learning	Aligns with ESD principles and the Adiwiyata program
Student awareness	Students develop environmental awareness, responsibility, and cultural identity	Builds value-based and participatory environmental behavior	Strengthens school–community collaboration frameworks

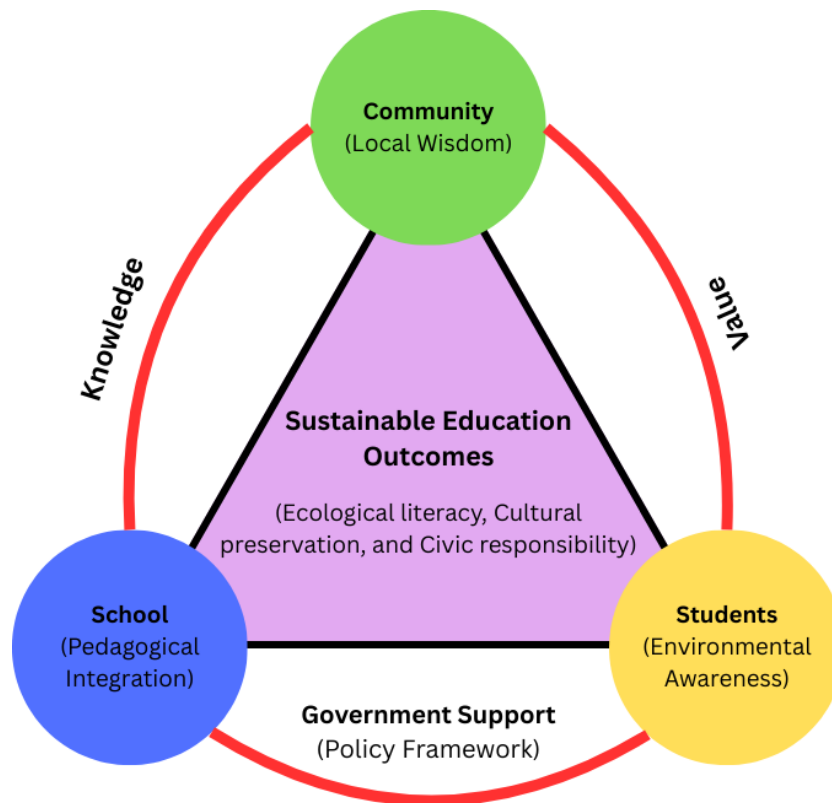


Figure 2. Model of Local Wisdom-Based Sustainable Education through *Rasulan*

It demonstrates that sustainability is not solely a scientific or policy issue but a cultural and moral endeavor rooted in local wisdom. When schools recognize and integrate these traditions, they transform education from an abstract exercise into a living dialogue between heritage and the future. By embedding *Rasulan* into the fabric of schooling, communities do more than preserve culture—they cultivate a generation capable of sustaining both the environment and the values that give it meaning.

5. Conclusions

This study concludes that the *Rasulan* tradition serves as an effective model for integrating local wisdom into sustainable education, fostering environmental awareness, civic responsibility, and cultural pride among students. The process of internalizing environmental care values through *Rasulan* demonstrates that local cultural practices can function as powerful pedagogical tools when meaningfully connected to the school curriculum. Through the coordinated collaboration among community members, schools, and government institutions, this tradition not only preserves cultural heritage but also reinforces students' ecological literacy and pro-environmental behaviors.

At the community level, *Rasulan* embodies an authentic expression of environmental stewardship, manifested through collective activities such as village cleaning, water conservation, and resource-sharing rituals. These practices

are deeply rooted in values of *gotong royong* (mutual cooperation), *syukur* (gratitude), and *solidaritas sosial* (social solidarity), which strengthen the community's social fabric while maintaining ecological balance. When these values are translated into formal education, they create a contextually grounded learning experience that allows students to see environmental care as both a moral and cultural duty.

At the school level, educators play a transformative role by linking *Rasulan* to multiple subjects from Science and Social Studies to Civics and local content learning. This cross-curricular approach aligns well with the ESD framework and the *Adiwiyata* (eco-school) program, ensuring that sustainability education is not limited to theory but becomes an active and reflective practice. The implementation of *Rasulan*-based projects, reflective essays, and participatory field activities demonstrates how schools can move beyond conventional teaching methods to embed environmental values within real cultural contexts.

For students, the engagement with *Rasulan* has led to measurable changes in attitudes and behaviors. The study found that students who participated directly in community rituals and environmental activities developed a stronger sense of environmental responsibility, cooperation, and cultural pride. This indicates that experiential learning grounded in local wisdom is more effective in cultivating long-term behavioral change than abstract environmental education. Moreover, students perceive the environment as

a shared heritage and moral responsibility, linking ecological awareness to their identity as young citizens and members of a cultural community.

Finally, at the systemic level, the success of this integration is sustained by policy alignment and institutional collaboration. The involvement of local government ensures that educational innovations rooted in local wisdom receive legitimacy and support, creating a replicable model for other regions seeking to align cultural education with sustainability goals. This synergy between community, school, and government represents a tripartite partnership that transforms local wisdom from a static tradition into a living educational framework for the future.

In essence, the Model of Local Wisdom-Based Sustainable Education through *Rasulan* illustrates how indigenous cultural values, when synergized with formal education and supported by policy, can nurture a generation that is culturally rooted, environmentally conscious, and socially responsible. This model offers an alternative paradigm for sustainable education.

6. Limitations

Despite its contributions, this study has several limitations that should be acknowledged. First, the findings are based on a single-region qualitative case study embedded in the specific cultural context of Gunungkidul, which limits generalizability. Second, evidence of behavioral change relies on self-reported data, teacher observations, and short-term post-activity engagement, without longitudinal follow-up or objective behavioral measurement tools. Third, as with most qualitative research, the interpretation of data is shaped by the researcher's positionality, although triangulation and reflexive strategies were employed to mitigate bias. Future research may address these limitations by incorporating longitudinal designs, mixed-method approaches, and comparative studies across different cultural settings.

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