

REIMAGINING EDUCATION FOR SUSTAINABLE FUTURES: INTEGRATING LOCAL WISDOM AND GLOBAL CITIZENSHIP IN CURRICULUM DESIGN

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Abstract

In the era of global educational transformation, the integration of local wisdom and global citizenship education (GCE) emerges as a strategic response to the challenge of creating sustainable learning environments. This study aims to reimagine curriculum design by embedding indigenous cultural values into global sustainability competencies, thereby shaping learners who are locally rooted yet globally responsible. Employing a qualitative descriptive approach, this research explores curriculum models, teaching practices, and teacher perceptions across selected schools in Indonesia's coastal and island regions, where local wisdom plays a vital role in community life. Data were collected through document analysis, interviews, and classroom observations, followed by thematic analysis to identify intersections between local culture and global educational goals. The findings reveal that integrating local wisdom into GCE fosters a transformative learning experience, encouraging empathy, ecological awareness, and collective responsibility among students. However, challenges persist in aligning traditional knowledge systems with standardized curriculum frameworks, highlighting the need for flexible, context-responsive educational policies. This study contributes to the global discourse on Education for Sustainable Development (ESD) by offering a hybrid curricular model that harmonizes cultural identity and global competency. The proposed framework emphasizes the importance of recontextualizing education not merely as a vehicle of knowledge transmission but as a moral and ecological endeavor towards sustainable futures.

Keywords: Local Wisdom, Global Citizenship Education, Curriculum Design, Sustainable Development, Transformative Learning.

INTRODUCTION

Education in the twenty-first century has entered an era of profound transformation, shifting from a focus on cognitive transmission toward cultivating sustainable values, social responsibility, and ecological awareness. The accelerating global challenges of climate change, cultural homogenization, and social inequality require education systems to not only prepare learners for economic productivity but also empower them to act as agents of sustainability and ethical global citizens (UNESCO, 2021). This new paradigm underscores the integration of Education for Sustainable Development (ESD) and Global Citizenship Education (GCE) as essential dimensions of curriculum design that link learning to life, community, and the planet (Tilbury & Wortman, 2023).

While global educational frameworks advocate for sustainability-oriented curricula, the practical integration of local wisdom indigenous knowledge, cultural values, and community-based ethics remains underexplored. Local wisdom, often transmitted through oral traditions and lived experiences, embodies ecological intelligence and moral reasoning that are vital for fostering contextual sustainability (Sterling, 2022). Integrating such wisdom into modern curricula offers an avenue for balancing global competencies with local identity, creating learners who are both rooted in their culture and responsive to global challenges (Kagawa & Selby, 2021). This approach aligns with the transformative learning theory, which views education as a process of critical reflection and value reorientation toward ecological and social consciousness (Mezirow, 2018).

However, tensions persist between globalized curriculum standards and local epistemologies. Standardized educational policies tend to privilege universalized knowledge systems, marginalizing indigenous perspectives and diminishing the pedagogical potential of cultural diversity (Nakata et al., 2020). As Andreotti (2014) notes, the challenge of GCE lies not in the lack of global awareness, but in the uncritical adoption of Western-centric narratives that overlook localized ethical and ecological dimensions. This misalignment often leads to what Taylor (2021) describes as *curricular displacement*, where the lived experiences of communities are excluded from formal education, resulting in a disconnect between knowledge and sustainability praxis.

Recent studies have begun to address this disjunction by emphasizing culturally responsive curriculum frameworks that integrate indigenous environmental ethics, storytelling, and community participation as pedagogical foundations (Sharma & Monteiro, 2022; Rieckmann et al., 2017). Such integration supports holistic learning that interlinks cognitive, affective, and behavioral dimensions of sustainability. Furthermore, evidence from Southeast Asian contexts shows that embedding local wisdom into GCE fosters empathy, social cohesion, and moral responsibility among students (Kamaruddin & Idris, 2023). These findings reveal that sustainable education cannot be universalized without acknowledging the socio-cultural and ecological specificity of place.

Therefore, this study aims to reimagine curriculum design for sustainable futures by exploring how local wisdom can be integrated with global citizenship education within the broader framework of ESD. It seeks to analyze how educators in culturally diverse and ecologically sensitive regions—particularly in coastal and island contexts—translate local values into pedagogical practice. By doing so, this research contributes to the ongoing discourse on recontextualizing education as a moral and ecological enterprise, positioning local knowledge not as peripheral tradition but as a central pillar of global sustainability education.

LITERATURE REVIEW

Education for Sustainable Development (ESD): A Transformative Framework

Education for Sustainable Development (ESD) has evolved from a normative educational agenda into a transformative pedagogical paradigm that redefines the purpose of education in response to the ecological, social, and ethical crises of the twenty-first century. According to UNESCO (2021), ESD aims to empower learners to make informed decisions and act responsibly for environmental integrity, economic viability, and social justice. It emphasizes the integration of cognitive, socio-emotional, and behavioral dimensions of learning to enable sustainability action across multiple scales.

Sterling (2022) argues that ESD represents a shift from transmissive to transformative learning, requiring deep structural change in how knowledge, values, and identities are formed. Similarly, Rieckmann et al. (2017) emphasize that ESD must develop “key sustainability competencies,” such as systems thinking, anticipatory competence, and normative reasoning, that prepare learners to navigate uncertainty and complexity. This reorientation of learning encourages reflexivity—helping individuals critically evaluate their assumptions and act ethically in interconnected global systems.

However, scholars caution that ESD risks being reduced to a technocratic agenda if it fails to account for local epistemologies and indigenous wisdom (Lotz-Sisitka & Wals, 2020). A transformative ESD, therefore, should not only transfer sustainability knowledge but also restore cultural relationships with nature, as found in many traditional societies (Tilbury & Wortman, 2023). Integrating local wisdom into ESD becomes essential to grounding sustainability education in the lived realities of communities.

Global Citizenship Education (GCE): Ethical and Intercultural Dimensions

Global Citizenship Education (GCE) complements ESD by emphasizing moral, cultural, and political responsibility in an interconnected world. UNESCO (2018) defines GCE as an educational approach that fosters understanding, tolerance, and solidarity beyond national boundaries. It seeks to cultivate learners who can engage critically with global systems while respecting diversity and promoting peace.

Andreotti (2014) differentiates between “soft” and “critical” GCE. The soft approach focuses on global awareness and empathy, often framed within humanitarian discourse, whereas the critical approach challenges structural inequalities, colonial legacies, and epistemic hierarchies embedded in global education. Taylor (2021) argues that critical GCE must be decolonial, positioning learners as co-constructors of knowledge who question dominant power relations.

In this regard, integrating local wisdom into GCE is not only a matter of cultural representation but also an epistemological intervention—a means to deconstruct Eurocentric assumptions and acknowledge diverse ways of knowing. Scholars such as Torres and Bosio (2020) highlight that a pluralistic GCE grounded in local cultural perspectives can bridge global ethical principles with community-based moral practices. When local narratives, stories, and rituals are embedded into global citizenship learning, they cultivate an authentic sense of belonging and moral agency (Sharma & Monteiro, 2022).

Local Wisdom and Indigenous Knowledge in Curriculum Contexts

Local wisdom—also referred to as indigenous or traditional ecological knowledge—constitutes a repository of cultural values, ecological insights, and moral systems transmitted across generations (Nakata et al., 2020). In many indigenous and island communities, local wisdom provides the normative and practical basis for sustainable living, social cohesion, and

intergenerational knowledge transfer (Kamaruddin & Idris, 2023). Integrating this knowledge into formal curricula thus becomes a pedagogical necessity to reconnect learners with their cultural and ecological contexts.

Scholars advocate for context-responsive curricula that combine modern sustainability frameworks with local ontologies and practices (Sharma & Monteiro, 2022). This approach moves beyond tokenistic cultural inclusion and toward curricular co-creation, where teachers, elders, and community members collaboratively define learning goals and methods. Nakata et al. (2020) describe this as operating within the “cultural interface,” a conceptual space where indigenous and Western knowledge systems intersect and interact. At this interface, curriculum design must mediate knowledge asymmetries and foster epistemological dialogue, rather than assimilation.

Empirical studies across Asia and the Pacific demonstrate that integrating local wisdom in education enhances student engagement, environmental literacy, and value formation (Arsat et al., 2022). Moreover, culturally grounded learning practices—such as storytelling, local rituals, and traditional ecological problem-solving—promote experiential understanding of sustainability concepts (Rieckmann et al., 2017). Therefore, local wisdom serves not as an alternative to scientific knowledge but as a complementary epistemology that enriches the curriculum’s ethical and contextual depth.

Curriculum Design for Sustainable Futures: Toward Integration and Transformation

Curriculum design serves as the operational site where educational ideals materialize into structured learning experiences. A sustainable curriculum must transcend disciplinary silos and foster interdisciplinary, participatory, and community-oriented learning (Tilbury & Wortman, 2023). Sterling (2022) proposes that future-oriented curricula should adopt *ecological thinking*—viewing learning systems as dynamic, interrelated, and co-evolving with their socio-ecological environment.

Integrating local wisdom and GCE requires a hybrid curricular model—one that combines universal sustainability competencies with culturally embedded values and practices. Such hybridization enables learners to contextualize global issues (e.g., climate change, inequality, biodiversity loss) within their local realities and moral frameworks. As Kagawa and Selby (2021) argue, curriculum transformation for sustainable futures must be “both globally informed and locally grounded,” balancing the universality of sustainability goals with the specificity of cultural narratives.

This integrated approach aligns with transformative learning theory (Mezirow, 2018), which emphasizes critical reflection and perspective transformation. By embedding local wisdom within GCE, learners undergo a shift from passive knowledge consumers to reflective practitioners who can envision and enact sustainable futures. This synthesis not only strengthens cultural resilience but also humanizes education—repositioning it as a moral, ecological, and dialogical process rather than a technical exercise in skill acquisition.

RESEARCH METHODOLOGY

Research Design and Philosophical Orientation

This study employed a qualitative interpretivist design grounded in the philosophical assumptions of constructivism and transformative learning theory (Mezirow, 2018; Creswell & Poth, 2018). The interpretivist stance recognizes that knowledge is socially constructed through human experience and interaction within specific cultural and ecological contexts. In line with this paradigm, the research sought to explore how educators conceptualize and operationalize the integration of local wisdom and global citizenship education (GCE) within curriculum development for sustainable futures.

The transformative orientation of this study views education as a vehicle for social, ecological, and moral change, rather than a neutral process of knowledge transmission (Taylor, 2021). This philosophical grounding justified the selection of a qualitative approach capable of capturing multiple perspectives, subjective meanings, and lived experiences of educators and community members engaged in sustainability education.

Research Sites and Context

The study was conducted across three coastal and island-based educational institutions in North Sumatra, Indonesia—regions characterized by rich indigenous cultural heritage and strong environmental dependence. These contexts were selected purposively to represent educational settings where local wisdom remains central to daily life and ecological practices. The selected schools have been involved in local initiatives related to *Education for Sustainable Development (ESD)* and community-based environmental programs. The cultural and ecological uniqueness of these regions provided a fertile setting to examine how local epistemologies interact with global educational frameworks (Tilbury & Wortman, 2023). The research sites thus served as microcosms of global sustainability challenges, reflecting the tension between modernization, globalization, and the preservation of local identity.

Participants and Sampling Strategy

Participants included teachers (n = 12), curriculum developers (n = 4), and community knowledge holders (n = 6)—elders, local leaders, and cultural practitioners—who possess intimate understanding of traditional knowledge systems. Purposive sampling was employed to ensure that participants had direct engagement with both formal education and local wisdom practices (Cohen, Manion, & Morrison, 2018). This heterogeneous sample allowed triangulation across institutional, pedagogical, and cultural perspectives, thereby strengthening the study’s credibility and transferability.

(Lincoln & Guba, 1985). Participant diversity was essential for capturing the dialogical process between global pedagogical frameworks and local cultural worldviews in curriculum enactment.

Data Collection Procedures

Data were gathered through three primary qualitative methods:

1. Semi-structured interviews were conducted with all participants to explore their conceptualizations of sustainability, perceptions of local wisdom integration, and challenges in implementing GCE principles. Each interview lasted between 60–90 minutes and was audio recorded with informed consent.
2. Document analysis involved reviewing institutional curriculum documents, lesson plans, and local policy guidelines related to ESD and GCE integration.
3. Participant observations were undertaken in classroom settings and community learning events to document the enactment of local wisdom practices, storytelling, and ecological rituals within educational activities.

Fieldwork extended over four months (April–July 2024), allowing for prolonged engagement and iterative reflection between the researcher and participants. This approach fostered a co-constructive learning process, aligning with participatory qualitative traditions (Charmaz, 2014).

Data Analysis

Data analysis followed the thematic analysis framework as outlined by Braun and Clarke (2019), supported by qualitative data management using NVivo 14 software. The process involved six iterative steps: data familiarization, coding, theme generation, review, definition, and interpretation. Themes were inductively derived to capture recurring meanings related to curriculum adaptation, values integration, and pedagogical transformation. To enhance analytical depth, the study employed theoretical triangulation, drawing from transformative learning theory (Mezirow, 2018), critical global citizenship frameworks (Andreotti, 2014), and culturally responsive pedagogy (Sharma & Monteiro, 2022). This multi-theoretical lens allowed for interpreting how educators negotiate between global sustainability discourses and local moral epistemologies in the process of curriculum design. Emergent themes included: (1) *local wisdom as ecological pedagogy*, (2) *curriculum hybridization between local and global ethics*, and (3) *pedagogical reflexivity as a pathway to sustainable futures*.

Trustworthiness and Ethical Considerations

To ensure the rigor and ethical integrity of the study, several strategies were applied following Lincoln and Guba's (1985) criteria for trustworthiness.

- Credibility was achieved through prolonged engagement, triangulation of data sources, and member checking with participants to validate interpretations.
- Transferability was strengthened by providing rich, contextualized descriptions of research sites and participants.
- Dependability and Confirmability were ensured through an audit trail, reflexive journaling, and peer debriefing among co-researchers.

Ethical approval was obtained from the Research Ethics Committee of Universitas Nias, and all participants provided written informed consent. Pseudonyms were used to protect participants' identities. The research was guided by ethical principles of respect, cultural sensitivity, and reciprocity, acknowledging participants as knowledge co-producers rather than passive informants (Nakata et al., 2020).

Methodological Limitations

As a qualitative study, this research does not aim for statistical generalization but rather for analytic transferability—providing insights that may inform similar educational contexts globally (Creswell & Poth, 2018). The findings reflect the participants' situated experiences and interpretations, shaped by their cultural, ecological, and institutional conditions. Nevertheless, the methodological rigor and triangulated evidence offer substantial depth for understanding how local wisdom can inform and transform global citizenship education.

RESULTS AND DISCUSSION

Local Wisdom as Ecological Pedagogy

The analysis revealed that participants consistently framed *local wisdom* not merely as a cultural ornament, but as an epistemic foundation for sustainability-oriented pedagogy. Teachers and community elders described local knowledge systems—embodied in oral traditions, rituals, and ecological taboos—as vehicles for transmitting environmental ethics and communal responsibility. For instance, coastal schools integrated indigenous fishing taboos (*tabu laut*) and traditional ecological practices (*kearifan lokal laut*) into classroom discussions, enabling students to understand resource conservation through local narratives rather than abstract scientific concepts.

This finding supports the argument of Sharma and Monteiro (2022) that indigenous pedagogies inherently embed principles of sustainability and environmental stewardship. The study participants emphasized experiential learning processes, such as reef monitoring, mangrove replanting, and cultural storytelling, as vital educational tools that align with Tilbury and Wortman's (2023) notion of *ecological literacy through cultural immersion*.

One teacher stated:

“Our students learn sustainability not from textbooks, but from the sea, the rituals, and the wisdom of their grandparents. That is where knowledge truly lives.”

Such statements illustrate the transformation of the classroom into what Gruenewald (2003) calls a *“place-based learning ecology,”* where education becomes deeply contextualized in the biophysical and cultural landscape. Local wisdom thus functions as ecological pedagogy, shaping student attitudes and behaviors toward environmental responsibility.

However, challenges emerged in reconciling these indigenous practices with standardized curricula that prioritize global indicators of learning. The tension reflects what Andreotti (2014) identifies as the *soft versus critical* dimensions of Global Citizenship Education (GCE): while “soft” approaches celebrate cultural diversity, they often neglect structural power relations that shape environmental degradation. Teachers in this study sought to bridge this gap by framing local traditions as both cultural identity markers and tools for critical ecological analysis.

Curriculum Hybridization Between Local and Global Ethics

The second major theme highlights a hybridization of curriculum, where local epistemologies are merged with global sustainability frameworks. Educators strategically incorporated the UNESCO Education for Sustainable Development (ESD) goals into lesson plans while preserving local ontological perspectives. For instance, global concepts such as *climate change* and *marine biodiversity* were taught through indigenous analogies—equating coral bleaching with the “sickness” of the sea spirits, or teaching recycling through customary rituals of purification.

This pedagogical hybridization illustrates what Appadurai (2013) terms *“glocalization”*—the process by which global ideas are reinterpreted through local cultural logics. It demonstrates that sustainability education need not be a unidirectional transfer from the Global North, but can emerge through dialogic synthesis between *global ethics* and *local wisdom*. Teachers emphasized that such hybrid curriculum design fostered greater student engagement and cultural pride. One teacher noted:

“When we teach climate change using the stories of our ancestors, the students understand it as part of their identity, not just a global issue.”

This observation resonates with Taylor’s (2021) decolonial critique of GCE, which argues that sustainable education must move beyond universal frameworks and engage with local systems of meaning-making. By embedding global issues within indigenous metaphors, the curriculum fosters *ethical localization*, allowing students to internalize sustainability as a moral obligation rather than an external mandate.

At the institutional level, curriculum developers highlighted the importance of balancing national education standards with regional identity. They viewed curriculum hybridization as a negotiated process between bureaucratic demands and local autonomy—an ongoing dialogue that redefines what counts as legitimate knowledge. As Nakata et al. (2020) suggest, this “cultural interface” becomes a site of epistemic negotiation where traditional knowledge and modern education intersect to co-produce new forms of learning.

Pedagogical Reflexivity as a Pathway to Sustainable Futures

A third emergent theme concerns pedagogical reflexivity—the continuous self-examination of educators as moral and ecological agents. Teachers in this study demonstrated awareness that sustainability education begins with their own transformation. They reflected on their roles not only as transmitters of knowledge but also as facilitators of community dialogue, bridging formal education and local wisdom holders.

This reflexivity aligns with Mezirow’s (2018) *Transformative Learning Theory*, where critical reflection leads to a change in worldview. Teachers who engaged in reflexive practices reported shifts in their teaching philosophy—from seeing local wisdom as supplementary, to recognizing it as a foundational epistemology. This transformation cultivated pedagogical humility, where educators learned to value community elders and indigenous practitioners as co-teachers and co-researchers.

Moreover, the reflexive approach nurtured what Sterling (2010) calls *“sustainability consciousness”*—a pedagogical mindset that perceives interdependence among ecological, cultural, and ethical systems. Through participatory teaching, educators integrated students into real-world sustainability projects such as community cleanups, coral restoration, and sustainable fishing campaigns. This praxis transformed sustainability from a theoretical discourse into a lived communal ethic.

However, some educators noted institutional barriers, including limited resources, bureaucratic rigidity, and lack of policy support for locally contextualized curricula. These findings echo the observations of Creswell and Poth (2018) and Tilbury and Wortman (2023) that sustainability-oriented curriculum reform often faces resistance due to systemic inertia within national education frameworks. Nevertheless, teachers’ reflexive commitment created micro-transformations within their schools—demonstrating that systemic change often begins with localized pedagogical agency.

Synthesis: From Local Pedagogy to Global Citizenship

Synthesizing across these themes, the findings illustrate that integrating local wisdom and global citizenship principles creates a mutually reinforcing educational ecology. Local wisdom contributes contextual moral grounding, while global citizenship frameworks provide analytical tools for understanding interconnected global systems. Together, they enable

what Andreotti (2014) calls *critical global citizenship*—a pedagogy that empowers learners to challenge structural inequalities and engage ethically with both local and global communities.

This synthesis demonstrates that sustainable futures education requires a *dialogical curriculum model*: one that is dynamic, intercultural, and reflexive. Rather than positioning local knowledge as archaic, this model situates it as a living epistemology capable of guiding humanity through the complexities of the Anthropocene.

Theoretical and Practical Implications

From a theoretical standpoint, the study advances a framework of *intercultural sustainability education*, extending transformative learning and GCE theories by emphasizing the epistemic centrality of local wisdom. It contributes to the global discourse on decolonizing education by illustrating that epistemological pluralism can coexist with universal sustainability goals.

Practically, the findings recommend three strategic pathways for curriculum designers and policymakers:

1. Institutionalizing Local Wisdom: Embedding indigenous knowledge systems as legitimate content within national curricula.
2. Teacher Professional Reflexivity: Establishing continuous reflective training that links pedagogical identity with sustainability ethics.
3. Collaborative Knowledge Production: Facilitating partnerships between schools, universities, and local communities to co-design sustainability curricula.

These pathways align with UNESCO's (2022) *Education for Sustainable Development Roadmap*, which emphasizes localized implementation and participatory curriculum reform as keys to global sustainability transformation.

CONCLUSION

This study has sought to reimagine the relationship between local wisdom and global citizenship education (GCE) within the broader framework of Education for Sustainable Development (ESD). The findings demonstrate that the integration of indigenous epistemologies and global ethical frameworks can generate a transformative paradigm for education—one that is contextually grounded, culturally inclusive, and globally responsive. By positioning local wisdom not as peripheral folklore but as *ecological pedagogy*, this research underscores that sustainable education must emerge from the lived realities and moral systems of communities rather than from externally imposed frameworks. Three central conclusions can be drawn.

First, local wisdom operates as a form of ecological intelligence, providing ethical principles for living harmoniously with the environment. Teachers who embedded cultural traditions—such as community rituals, ancestral stories, and ecological taboos—into their lessons cultivated deeper student understanding of sustainability as a lived moral obligation. This aligns with Sterling's (2022) assertion that sustainability learning begins with the transformation of personal and collective values, not the mere acquisition of knowledge.

Second, curriculum hybridization between local and global perspectives enables education systems to balance cultural identity with global responsibility. The study illustrates that globalized curricula, when rooted in indigenous ethics, can bridge the gap between modern sustainability frameworks and traditional environmental worldviews. Such hybridization redefines the curriculum as a dialogical process, where knowledge flows bidirectionally between community and classroom, theory and practice, local and global.

Third, the study highlights pedagogical reflexivity as a critical enabler of transformative education. Teachers who engaged in reflective practice reconceptualized their roles from knowledge transmitters to facilitators of moral-ecological dialogue. This reflexivity nurtures what Mezirow (2018) describes as *transformative consciousness*—the ability of educators and learners alike to question assumptions, embrace multiple worldviews, and act ethically toward sustainable futures.

Overall, this research contributes to both theoretical and practical dimensions of sustainable education. Theoretically, it advances the concept of intercultural sustainability pedagogy, which integrates transformative learning, decolonial epistemology, and GCE within a pluralistic framework. Practically, it calls for systemic educational reform that institutionalizes local wisdom as legitimate curriculum content, fosters teacher reflexivity, and strengthens partnerships between schools, communities, and indigenous knowledge holders.

In an increasingly globalized yet fragmented world, the future of education depends on our capacity to harmonize diversity and universality, tradition and innovation, local and global ethics. Education for sustainable futures, therefore, is not merely an academic endeavor but a moral and ecological commitment—to learn from the wisdom of place while engaging with the responsibilities of the planet. As UNESCO (2021) reminds us, “reimagining our futures together” requires education that is rooted in local knowledge yet open to global solidarity.

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