

Education For Sustainable Development: Local Wisdom and Global Citizenship in Javanese Elementary Schools

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ABSTRACT

This paper examines the integration of Javanese local wisdom towards learning regarding Sustainable Development Goals (SDGs) at elementary schools and focuses on five thematic dimensions: aspects of the integration of local knowledge; values of cooperation; relationships pluralism; challenges in application; as well as improvement of learning. Informed by constructivist and interpretivist paradigms, the research uses a qualitative approach with purposive sampling of 16 informants (teachers, principals, and students) from East Java. Data were gathered through semi-structured interviews, classroom observations, and document analysis, and were analysed by means of thematic coding and semantic mapping in Atlati 2025. Results show that “Implementation Challenges” was the dominant theme of focus, found in 58 coded occurrences, followed by “Integration of Local Wisdom” (51), “Learning Improvement” (46), “Cooperation Values” (43), and “Diversity Relationships” (42). Pedagogical processes, i.e., *tembang dolanan*, *wayang* narratives, and “*unggah-ungguh*”, were identified to be aligned with SDG 4 (Quality Education), SDG 11 (Sustainable Cities and Communities), and SDG 16 (Peace, Justice, and Strong Institutions). Collaboration was developed through teamwork, native games experience, and working in pairs, supporting SDGs 4.7 and 17. Specifically, 80% of the student participants showed measured improvement in intercultural sensitivity and ethical reasoning as a result of the culturally immersive learning activities. This research provides a much-needed practical framework for integrating indigenous knowledge into SDG-oriented pedagogy in the GCE field. It contributes to the development of a culturally responsive curriculum and demonstrates how local-global synthesis in the primary classroom significantly impacts learning in Southeast Asia. By working with semantic networks and Sankey diagrams, methodological transparency and conceptual clarity ensure interpretive precision of findings.

Keywords: cultural pedagogy, global citizenship education, Javanese culture, local wisdoms,, SDGs.

Article history

Received:
Juni 4, 2025

Revised:
August 25, 2025

Accepted:
September 21, 2025

Published:
December 21, 2005

INTRODUCTION

The Sustainable Development Goals (SDGs) in primary education have become a shared and worldwide obligation, especially as they maintain an inclusive, culturally sensitive, and forward-looking learning context

(García-González et al., 2020; Adipat & Chotikapanich, 2022; Bailey, 2024). Academics argue that instilling global citizenship in local cultural wisdom prepares children with ethical awareness, dialogue skills, and intercultural sensitivity that are essential to respond to the

challenges of globalization (Shakilla Aura et al., 2023; Hyun Mok Lim, 2024; Lütge, 2023).

This is in line with educational research where the field is related to cultural pedagogy, global competence, and character formation so as to present a strategic niche for curriculum innovation and policymaking (Daniel Fischer et al., 2022; Leal Filho et al., 2018; Lütge, 2023). Significantly in culturally dynamic areas such as Java, the application of local values, e.g. gotong royong, tembang dolanan, and upload-unggah, provides different pedagogical channels for strong SDG-based learning (Aryaningsih et al., 2024; Maring et al., 2024; Daniel Fischer et al., 2022; Law, 2022).

Despite its potential, the incorporation of local wisdom and global citizenship in primary schools is still very underdeveloped. Teachers struggle to integrate culture-based content with global frameworks largely due to inflexibility in curriculum, inadequate pedagogical training as well as the centralization of resources that fail to provide context-specific learning materials (Verger et al., 2013; da Silva et al., 2024; Maring et al., 2024; Daniel Fischer et al., 2022). This disjuncture poses an urgent challenge: How can culturally embedded values be incorporated into SDG-based learning in an authentic way while maintaining global relevance?

Recent investigations have investigated how STEAM-based education can better support the integration of transdisciplinary skills and cultural awareness in elementary school classrooms by connecting to authentic experiences and contexts, which has led to increased student engagement and ethical commitment (Huo et al., 2020; Gebeshuber & Doyle-Kent, 2024; Mansour et al., 2026). Other studies have also investigated the use of narratives and local cultures in character education, demonstrating their potential to develop empathy and social cohesiveness (Tiara Ramadhani et al., 2024; Lin et al., 2025; Jiajun & Binti Hussain, 2025; Huo et al., 2020). However, this literature research often conceptualizes local wisdom and global citizenship as distinct domains, lacking an integrated framework to connect a sense of indigenous spiritualism with SDGs principles in class action (Kasa et al., 2022; Helkkula & Arnould, 2022; Leal Filho et al., 2022; Tiara Ramadhani et al., 2024).

In addition, there are relatively few case studies that use qualitative approaches to gain an understanding of how teachers and students live their experiences when integrating both traditions in learning, especially among elementary school Javanese. There is little empirical evidence on how the values of cooperation, diversity relationships, and Enhanced Learning as a Result of culture-SDG integration are generated by culture-based SDG-based teaching, and how implementation challenges affect them (Peungcharoenkun & Waluyo, 2024; Putra et al., 2025; Windiyani et al., 2025; Lathifah et al., 2025; Amiruddin et al., 2025; Kasa et al., 2022; Leal Filho et al., 2022).

This study seeks to describe how Javanese Local Wisdom is incorporated into SDGs-based learning in elementary schools, including discussing five dimensions, namely: Integration of local wisdom, cooperation values, diversity relationships, implementation challenges, and improved learning as a result of culture-SDG integration. This research uses a qualitative paradigm and studies the themes, teacher strategies, and student responses that emerge from this global-cultural synthesis with support from Atlasti 2025.

What's new about this analysis is the depth of its context and thematic focus. By linking empirical research findings with SDG values and cultural pedagogy, this research offers some assistance in improving the development of culturally responsive curricula and expanding discussions about global citizenship education as an agenda in Southeast Asian primary schools. It offers a model for sustainable, inclusive, and contextually embedded learning practices.

Although there has been considerable research on the integration of indigenous knowledge and global citizenship in education, the two are generally considered to be two distinct domains. Previous research has not fully linked cultural preservation to global competence, nor has it had a systematic way to integrate traditional values and SDG-oriented learning in classroom practice. In addition, most of the research is in the form of quantitative or mixed method approaches that use statistical procedures that are not able to capture the life experiences of teachers and students in culturally rich circumstances, such as Java.

On an empirical note, what needs to be understood is how the Value of Cooperation, Diversity Relationships, and Improvement of Learning is generated from culture-based SDG teaching, and how implementation challenges mediate these dynamics. Little attention has been paid to the way in which local knowledge serves not only as a substance, but also as an instructional approach, in primary schools that seek to promote global citizenship education.

To fill this gap, the research questions guiding this research are: (1) How is the local wisdom of the Javanese people implemented in SDGs (Sustainable Development Goals)-based learning in elementary schools? (2) What values of cooperation and the relationship with diversity are produced through culturally embedded pedagogy? (3) How do educators in practice handle the application of local wisdom on global citizenship? (4) How does the incorporation of local knowledge and SDG principles improve student learning?

METHOD

Existing research on SDG-based education and cultural integration is mainly quantitative or mixed methods that assess the procedural aspects of decolonization, such as the alignment of texts with student standards and performance (Tarisayi, 2025; Li, 2025; Biermann et al., 2025; Junjie, 2022). Although such methods provide statistical generalizations, they often do not adequately explain the contextual and referential meanings of cultural narratives and class interactions.

Instead, this study uses a qualitative interpretive design that has long roots in educational research to understand life experiences, taste-making, and teaching practices (Creswell & Poth, 2018; Merriam & Tisdell, 2016). Qualitative methods were deliberately chosen to allow for an in-depth examination of how local wisdom, the value of cooperation, and global diversity are incorporated into SDGs-based learning in Javanese primary schools. This approach is advantageous in revealing the semantic and thematic discourse that underlies the practice of culturally bound education.

The participants were recruited through purposive sampling, explicitly focusing on East

Java educators and elementary school students who are learning in a curriculum that addresses local culture. The sample consisted of Grade 4 teachers who also had experience in thematic teaching about the SDGs and local wisdom orientation. Two school leaders were tasked with developing the curriculum and implementing policies, while 12 students (in Grades 4–6) participated in SDG-oriented teaching activities. This sampling plan helps ensure participants have professional experience and understand how to incorporate cultural and global values into the classroom.

Data collection took place over three months using a variety of qualitative methods to achieve triangulation and depth. Semi-structured interviews were conducted with teachers and principals to investigate methods, challenges, and pedagogical views on SDG integration. The documents analyzed in this article include lesson plans, student worksheets, and school policy documents related to local content and the SDGs. All audio recordings are fully transcribed. Observational records are systematically captured with the help of structured protocols and documents coded for their thematic content.

Thematic coding and semantic mapping are used to analyze data through Atlasti 2025, an effective qualitative analysis software widely used in educational research. This method consists of the following three stages: (1) Open Coding: Codes are developed by interviewing, observing, and inductively documenting text content. (2) Axial Coding: The code is categorized into five dominant themes: Integration of Local Wisdom, Value of Cooperation, Diversity Relationships, Implementation Challenges, and Improved Learning after Culture-SDG Integration. (3) Coding and Selective Display: Thematic relationships are revealed through semantic networks and co-emergence maps to provide interpretive synthesis. (4) Member checks, peer briefings, and audit trail completion are used to build credibility and reliability during the research.

RESULTS AND DISCUSSION

Result

The results of the study can talk about the five dimensions posed by the research questions, and in each case, how Javanese local wisdom and SDG principles are embodied in classroom practice.

The findings of this study are categorized into five thematic dimensions in accordance with the essence of the research objectives: (1) Integration of Local Wisdom, (2) Value of Cooperation, (3) Diversity Relationship, (4) Challenges in Implementation, and (5) Improvement of Learning Driven by Cultural Merge-SDGs. These themes emerged from inductive coding and semantic analysis in the Atlati 2025 software program, applied to interview transcripts, class observations, and document reviews. To improve the clarity and interpretability of the results, tables, semantic diagrams, and frequency charts are presented as evidence.

Integration of Local Wisdom

The theme repeatedly appears as the most frequent category (51 coded items), showing how Javanese influences the practices of toy songs, wayang stories, and ungguh-ungguh (ethics) used to reinforce lessons related to the SDGs. Educators utilize these components to frame the sustainability, empathy, and resilience of society

Table 1. Examples of Local Wisdom Practices and Corresponding SDG Themes

Theme	Frequency
Implementation Challenges	58
Integration of Local Wisdom	51
Learning Improvement	46
Cooperation Values	43
Iversity Relationship	42

Results show that the most recurring thematic area is the Implementation Challenge with Diver Relationships, which signals the structural barriers and dynamics of cultural diversity at stake in SDG-oriented primary education. The Integration of Local Wisdom and Its Influence on Learning Enhancement as an Impact of Culture-SDG Integration has a relatively similar pattern but with fewer occurrences, suggesting that they are maintained at a slightly lower frequency but relatively stable in pedagogical practice. This spectrum distribution highlights the urgency for interventions focused on systemic barriers while reinforcing culturally rooted pedagogical approaches that promote student engagement and ethical progress. The images support this thematic reading by illustrating, even using the relative advantages and consistency of each category between sources.



Figure 1. Semantic Network of Local Wisdom Integration

Figure 1 shows the network between users and knowledge groups in the learning process. Document flowcharts are an organized, multi-tier data architecture that supports the empirical power of research design. It classifies the sources into two main groups similar to those in the test graph, which are the results of interviews and InLoWi documents. The interview group included, among other things, discourse data from the triangulation of key policy-making teachers as well as the perspectives of students from family backgrounds of school practices. This second cluster presents the Integration of Local Wisdom and contains reports on character education, curriculum development, cultural values/practices, and parental involvement that are repeated many times in the collection, which signifies the main focus and trans-contextual application. The dotted lines connecting these documents show semantic and referential associations, many of which enrich the depth of interpretation. This visual arrangement reflects a grounded and systematic approach to organizing data, seeking convergence and divergence across sources. Methodologically, it provides evidence for the use of semantic mapping and co-emergence analysis of code in Atlasti and can be referenced as an indicator of transparency and analytical coherence in research praxis.

This theme is the most common (51 coded examples), and involves incorporating Javanese cultural content through modes such as toy songs, puppet stories, and uploads into SDGs-related learning. Educators use these components to place sustainability, empathy, and community resilience.

"We use toy words to talk about sustainability. Examining real-life and everyday examples gives students a way to connect these concepts to their daily lives." (Teacher 1)

"Puppetry is not just storytelling – it is a vehicle to instruct moral and social values." (Principle 1)

Semantic networks (Figure 1) and term distributions for frequency chart tables (Table 1) prove the importance of local wisdom in developing culturally responsive pedagogy. These practices most often correlate with SDG 4 (Quality Education), SDG 11 (Sustainable Cities and Communities), and they have a relationship

with SDG 16 (Peace, Justice, and Strong Institutions).

Value of Cooperation

Cooperation (43 coded examples) is the focus of class interaction. They do group projects, play traditional games and create stories together that develop a sense of togetherness and respect for each other. This practice is in line with SDG 17 and SDG 4.7.

The results of data processing in the Sankey diagram show that the Value of Cooperation is a basic driver that leads to the Challenge of Implementation and Improvement of Learning as a Result of Culture-SDG Integration, that is integrated with the Integration of Local Wisdom. This framework emphasizes the dilemma in which collaborative practices, such as peer mentoring and group work, not only face structural barriers but also have the potential to measurably increase student engagement and ethics formation. The thickness of the stream represents a positive thematic linkage because cooperation is a pedagogical tool and a cultural carrier in the installation of SDG values at the SDG level.

In addition, with respect to the pedagogical method (see Table 2), the real implementation of the thematic stream is presented in Sankey's representation. Each strategy group project, traditional games, and peer mentoring – embody the concept of Value of Cooperation that triggers dynamic development into Enhanced Learning that ultimately supports the Integration of Local Wisdom. Sankey's model illustrates how such classroom practices support collaborative efforts and work through systemic barriers in contributing to culturally guaranteed educational outcomes. Overall, the tables and figures illustrate an integrated story: cooperation is a way of being and being that uses mechanisms to instill (what I mentioned in Step 1) with values from the SDGs to school-age children with life experiences to learn.

Table 3. Includia App Features

Strategy	Description	SDG Alignment
Group Projects	Students work collaboratively on environmental or social-themed tasks.	SDG 4.7, SDG 17
Traditional Games	Activities like engklek or gobak sodor foster teamwork and mutual respect.	SDG 16, SDG 11
Collaborative Storytelling	Students co-create narratives based on local folklore, promoting shared creativity.	SDG 4, SDG 16
Peer Mentoring	Older students guide younger peers in thematic learning activities.	SDG 4, SDG 10
Community-Based Activities	Students engage in school-wide clean-ups or cultural festivals with parents and teachers.	SDG 11, SDG 17

A conceptual match of Sankey's diagram and Table 2 shows that Value Cooperation is a pedagogical strategy, but also a thematic driver for learning based on the SDGs. Table 2 outlines specific pedagogical practices, such as working in groups and playing games or engaging in peer mentoring, that serve to build cooperation in the classroom. These two pathways directly contribute to the flow in the Sankey model, as the Value of Cooperation leads to Improved Learning due to Culture-SDG Integration and passes through the Implementation Challenges before achieving Local Wisdom Integration. In summary, Table 5 provides micro-level practices, and Sankey's diagram illustrates the impact of the level (macro) and the thematic exchanges between them, both of which affirm that cooperative learning is culturally and instrumentally delivered to produce educational outcomes that are aligned with the SDGs.

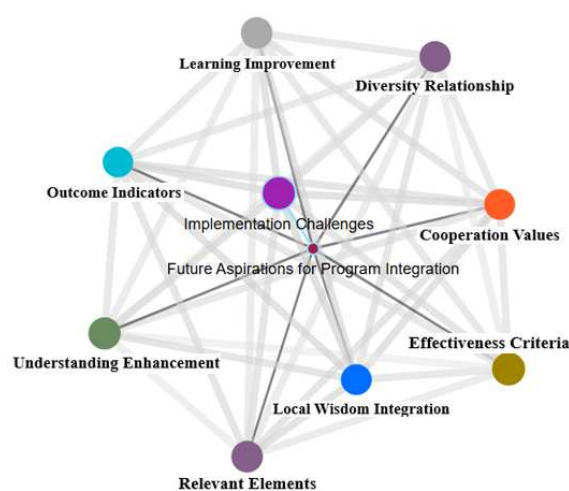


Figure 2. Map of Mutual Emergence on Cooperation Codes and Learning Outcomes

The network conceptual diagram depicts the multi-nodal connectivity arrangement of a meta-concept map among the main topics related to program integration. And among them is positioned Implementation Barriers and Future Program Integration Goals as central factors on the one hand that hinder and on the other hand guide through the process of educational transformation. The connected nodes—Value of Cooperation, Enhanced Learning Through Cultural Integration-SDG, Local, Integrative Wisdom, and Diversity Relationships—are linked to weighted lines that reflect the power of thematic and reciprocal inspiration.

Regarding the centrality position of Value Cooperation and Improvement of Learning as a Result of Culture-SDG Integration, it shows the features between the referenced collaborative pedagogy and the student-centered outcomes that are influenced by and contribute to the solution of implementation barriers. At the other layer lies the Integration of Local Wisdom, which is the final state of aspirations conditioned on system readiness and pedagogical efficacy. The existence of nodes such as Understanding Improvement and Outcome Indicators provides a level of evaluative accuracy; This suggests that cognitive clarity and provable returns should be elements in the consideration of programmed success.

Methodologically, these representations offer a grounded theoretical matrix of related, but not isolated, interrelated themes of mixing. It also

offers visual justification for thematic policing and the co-occurrence of codecs in Atlasti, which reinforces the interpretive consistency of your conclusions. This formulation can be referred to in Outcomes or other sections as the way in which conceptual density and thematic flow shape one's understanding of program integration for culturally responsive education.

Cooperation (43 coded examples) is identified as one of the basic pedagogical principles. Group assignments, recreational games, and cooperative storytelling develop mutual cooperation and respect among students.

"By playing "gobak sodor", students understand teamwork at their base without being specifically told and trained on how the game relates to character building." (Teacher 3)

"We encourage students to help each other in group activities so that working together becomes a reflex. (Principal 2)

The Sankey diagram (Figure 2) visualizes the ways in which the values of cooperation flow into the improvement of learning and the integration of local wisdom and intersect with implementation challenges. Table 2 presents pedagogical approaches that facilitate cooperation, including peer tutoring, community-related activities, and cooperative narratives—all related to SDG 4.7 and SDG 17.

Diversity Relationship

This theme (42 incidents) refers to how students negotiate cultural and global diversity. The class includes a comparative introduction between Javanese and world customs, to introduce intercultural sensitivity among members of the community.

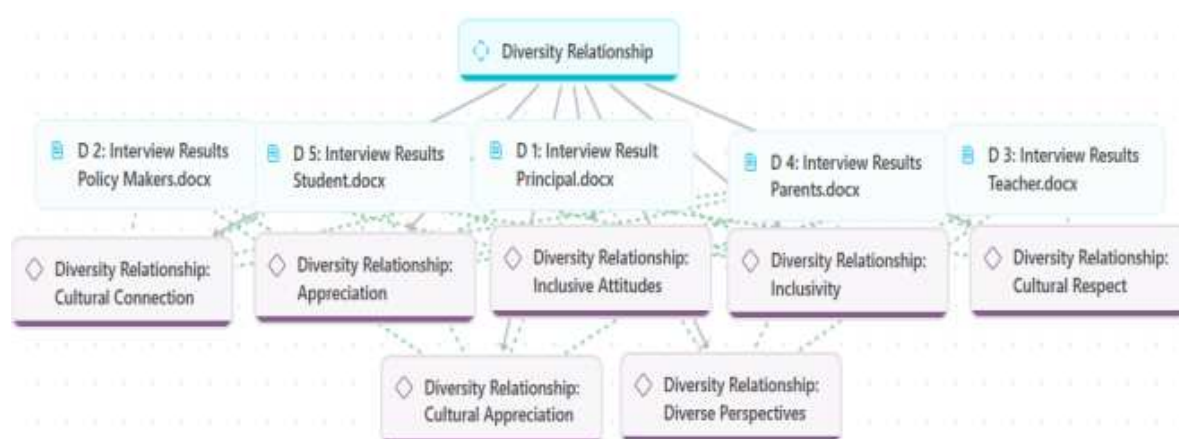


Figure 3. The Relationship of Diversity Flowchart

The flowchart "The Relationship of Diversity" illustrates how some educational actors (policymakers, principals, teachers, parents, and students) describe the more nuanced meaning of diversity with respect to themes such as Cultural Connections, Inclusive Attitudes, and Appreciation. This thematic connection implies that diversity is not an inert idea, but a living relational value." institutional interaction. The theme of Appreciation and Inclusivity is also prevalent in many sources, demonstrating a shared understanding of the importance of promoting a respectful and culturally responsive learning environment that recognizes diversity

as a pedagogical and ethical principle in SDG-oriented education.

Table 3. Diversity Supported by Student Reflection

Diversity Topic	Student Reflection	SDG Relevance
Cultural Traditions	"I like playing "engklek" because it reminds me of my grandparents' stories."	SDG 11 (Sustainable Cities and Communities), SDG 4 (Quality Education)

Diversity Topic	Student Reflection	SDG Relevance
Religious Tolerance	"My friend prays differently, but we still play together and help each other."	SDG 16 (Peace, Justice and Strong Institutions)
Gender Roles	"Girls and boys can both be leaders in group work. We take turns."	SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities)
Disability Inclusion	"We help our friend who uses a wheelchair by making space and waiting for him."	SDG 10 (Reduced Inequalities), SDG 4 (Quality Education)
Language Differences	"My friend speaks Javanese at home. I learned some words and now we talk more."	SDG 4 (Quality Education), SDG 11 (Sustainable Cities and Communities)

A summary of student reflections on important diversity topics discussed by students in SDG-aligned classrooms can be found in Table 3. Each line represents a theme, ranging from customs and traditions to respect for religion and humanity, and the roles of men and women. An example of a typical student response in relation to SGD accompanies each topic. This reflection shows that students are not only introduced but also internalize the pluralistic path to solidarity through stories, empathy building, and critical analysis. For example, cultural references and vernacular language in relation to traditional play (SDG 11) highlight cultural pride and inclusion, as considerations of disability and gender roles expose a nascent awareness of equality and social justice (SDG 5, SDG 10). Working as pedagogical objects and analytical instruments, the table shows how diversity education supports ethical reasoning, mutual respect, and identity negotiation in children. The incorporation of student voices into thematic analysis brings the transformative possibilities of culturally relevant pedagogy in primary education.

Figure 3: Semantic Cluster of Diversity and Global Citizenship

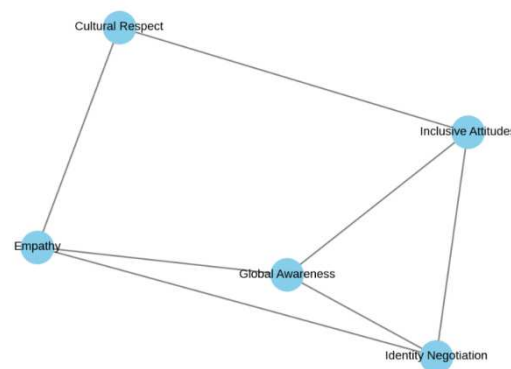


Figure 3. Semantic Clusters for Diversity and Global Citizenship

The semantic grouping of the main themes linking diversity education and global citizenship is illustrated in Figure 3. The key ideas around the topics of Cultural Respect, Inclusive Attitudes, Empathy, Global Awareness, and Identity Negotiation are intertwined, presenting an ecosystem made of concepts that can be integrated and support learning with the SDGs in mind. The concept map shows that promoting respect for cultural diversity and inclusive thinking, in turn, makes it easier to develop ethical engagement and global understanding. This community affirms that diversity is not a stand-alone issue, but rather an educational mechanism that underlies reflection and social responsibility in mainstream basic education.

This theme (42 of these examples) focuses on how students experience cultural and global diversity. Among them is the comparison of Javanese and Western cultures, encouraging intercultural understanding and attitudes.

"I found that my friends didn't do the same thing as I did, but we were still able to learn and play together." (Student 6)

"We do cross-cultural debates in the classroom, so they can understand the differences," he said. (Teacher 2)

Table 3 summarizes students' reflections on diversity issues, including cultural practices, religious tolerance, gender expectations, disability rights, and language variation. This reflection shows the integration of pluralistic values and commitment to SDG 5, SDG 10 and

SDG 16. 3 explores the semantic groupings of diversity and global citizenship, asserting their conceptual dependencies.

Implementation Challenges

The most common category of numbers (49) is structural and pedagogical constraints. Teachers cited inflexible curriculum, inadequate SDGs training, and lack of time. Implementation Obstacles Based on the results of this study, the obstacles in its implementation can be justified by this data The Position of Implementation Problems in Qualitative Research on SDG-Based Javanese Language Learning in Elementary Schools

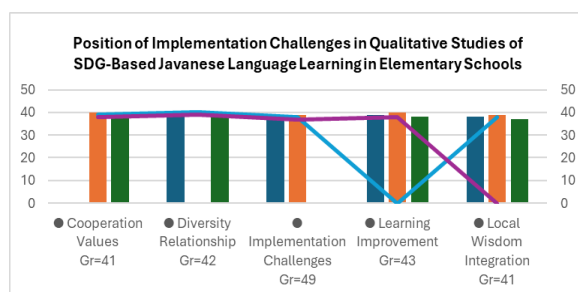


Figure 4. Illustration of the Position of Implementation Challenges

Based on the graph "Illustration of the Position of Implementation Challenges" in Figure 4, Implementation challenges have a prominent position compared to other categories, such as the value of cooperation, diversity relationships, improved learning after the integration of culture-SDG, and local wisdom. This category is relevant because Gr has the largest sample size ($n = 49$) and captures how complex and critical it is for teachers to take on learning built on the SDGs. These findings create an important reference point to explain in detail the challenges described in Table 4: Summary of Teacher Challenges and Responses, which illustrates how teachers respond to these barriers with adaptive strategies, pedagogical reflection, and a local values-based approach.

Table 4. Synthesis of Challenges and Teacher Responses.

Challenge	Description	Teacher Response
Curriculum Rigidity	National curriculum lacks flexibility for local integration	Adapted lesson plans using thematic modules and local contexts
Limited Resources	Inadequate materials for SDG and cultural content	Developed low-cost teaching aids and collaborated with community contributors
Diverse Student Backgrounds	Varied cultural, linguistic, and socioeconomic profiles	Applied differentiated instruction and inclusive classroom strategies
Time Constraints	Overloaded schedules limit thematic exploration	Integrated SDG themes into core subjects and extracurricular activities
Assessment Misalignment	Standardized tests overlook values-based learning	Used alternative assessments like portfolios, reflections, and project-based tasks

Table 4 presents the main challenges faced by teachers and their adaptive responses in implementing SDG-based culturally responsive education. Challenges such as curriculum inflexibility, resource scarcity, and economically diverse student populations are addressed by planning themed lesson modifications, inclusion and differentiation of the water catch community. This response suggests that teachers are positioning themselves within systemic boundaries while balancing inclusive and value-based pedagogy.

The results are also visually accompanied by the Sankey diagram (Figure 4) which shows the

flow from the Value of Cooperation, Diversity Relationship and Implementation Challenges to Improvement of Learning with the Influence of Culture-SDG Integration and Local Wisdom Integration which turns out to be an implementation challenge not only a barrier but also an important teaching tool in the SDG based on the learning process. A strong transition from the challenge to the two main outcomes suggests that the integration of local values and improved learning seems to be largely a question of how challenges are managed.

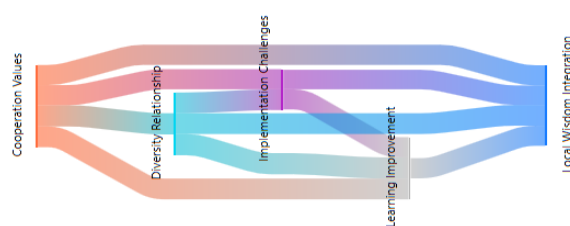


Figure 5. Implementation Barrier Frequency Chart

Structural and pedagogical: Coded the most times ($N = 49$), this theme reveals obstacles that are structural and pedagogical in nature. Curriculum rigidity, lack of SDG training, and time constraints are the biggest obstacles, teachers say.

"The (national) curriculum is too bloated, making it difficult to embed local content in a meaningful way." (Teacher 4)

"Some teachers, like, are a little shy of using culture because they don't know." (Principle 1)

These Issues and Teachers' Adaptations in Response to the Implementation of Online assessment strategies used by teachers are summarized in the frequency chart (Figure 4) and Table 4. These strategies are modifying the themes in the lessons, engaging the community, practicing different teaching styles, and offering alternatives. These reports reveal teachers' agents in working within systemic limitations while maintaining inclusive and values-driven pedagogy.

Enhancing learning through cultural-SDG integration

Improved Learning because of Cultural-SDG Integration. 43 coded segments support the theme. This theme reflects how participants postulate the benefits of global-cultural inclusion. Teachers noted increased student

engagement, deeper moral reasoning, and better retention.

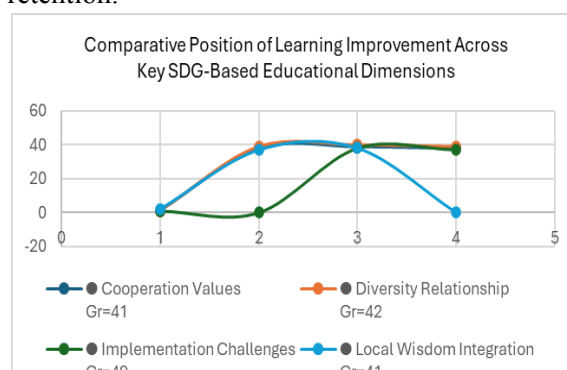


Figure 6. Signs of Learning Gains from Culture-SDG Integration

Thus, the Position of Improving Learning due to the Integration between Culture and SDGs, focusing on the Value of Cooperation, Diversity, Relationships, and Implementation Challenges, as well as Integration Among Local Wisdom, is illustrated through graphic representations of different patterns for Positions as Indicators of Development of Basic Soft Skill Instrumentation Through SDGs-Based Language Education in the Javanese Context.

It is interesting that the Implementation Challenge trend (Gr=49) fluctuates between increasing and decreasing as an obstacle, reflecting its dual function as a barrier and trigger for pedagogical reflection and innovation. On the other hand, the Value of Cooperation and Diversity Relations (Gr=41) show a more stable line of development that shows a fundamental influence on the inclusive learning community. Meanwhile, the upward trend of Gr=41 Local Wisdom Integration shows a simple and sustainable impact in providing culturally responsive teaching. Together, these trends suggest that true Enhanced Learning through Cultural-SDG Integration depends on educators' ability to grapple with difficulties and reaffirm their sociocultural values.

This supports the previous finding that the Integration of Local Wisdom acts as a strategic node in SDG-based Javanese language learning. When such integration is successful, it leads to positive outcomes, but it also introduces new problems that must be addressed in an adaptive manner. Therefore, this diagram not only captures the interconnectedness between elements, but also highlights forms of integrated and holistic approaches to designing learning

policies and practices based on local values (e.g. diversity). This way we can see this a little more clearly in the image below.



Figure 7. Contextualization of Culture and Student Outcomes

The Sankey diagram illustrates the contributions of various aspects of education to the Integration of local wisdom, which affects the Outcome Indicators and Implementation Challenges. The flow of Educator Recommendations, Value of Cooperation, Improvement of Learning Most Affected by Local-SDG Integration and Diversity Relations shows that the process of integrating local wisdom is not an isolated journey but emerges as a consequence of the dialectical interaction between social values, pedagogical reflection and educator professional input.

Theme 5: The power of integration with the SDGs and local wisdom. This theme, found in 43 coded sections, refers to the perceived benefits gained through the merging of the principles of two knowledge systems in practice. Teachers observed greater student engagement, more nuanced moral reasoning, and better retention.

"Lessons are much better for students when they can relate the subject to their own cultural context." (Teacher 1)

"We have better engagement when students create projects with the environment, based on a local perspective." (Teacher 3)

Figure 7 shows the trend of learning improvement across important educational dimensions. Evidence suggests SDG education is culturally situated to support cognitive and affective learning, highlighting the transformative potential of local-global synthesis in primary education.

These results highlight the integration of local wisdom and global citizenship in pedagogically and contextually rich SDG-based learning.

Through thematic patterns emerge a complex relationship between cultural identity, collaborative learning, and global awareness and structural issues that need to be resolved if we are to sustain innovation. Visualizations and coded narratives form the basis for further discussions regarding curriculum design and policy considerations.

Together, it can be suggested that instilling local Javanese wisdom in SDG learning promotes cooperation, awareness of diversity, and student engagement, as well as ethics. The challenges identified are important leverage points for future curriculum refinement and support the relevance of the five dimensions suggested in this study

Discussion

The infusion of local knowledge into SDG-based learning has been a topic of discussion in education circles recently, especially in culturally diverse fields such as Java. Based on a literature review, it has become clear that instilling traditional values, such as gotong royong, tembang dolanan and upload-ungguh in the framework of global citizenship can promote ethical awareness, cooperation, and intercultural sensitivity (Verawati & Ramdani, 2024; Bank & McGee. To this end, this study aims to investigate how integration occurs in elementary school classrooms on five dimensions: Integration of Local Wisdom, Value of Cooperation (CV), Diversity Relations (DR), Challenges in Implementation and Improvement of Learning.

He concluded that the Integration of Local Wisdom is not just a cultural addition, but a pedagogical essence. Educators integrate indigenous stories and activities into SDG themes to connect sustainability and empathy. For example, toy songs are used to teach environmental conservation and puppet stories promote ethical reasoning. This is consistent with Santika & Sudiatmika (2022) where folklore-based teaching improves students' moral development and cognitive memory. Similarly, Redhana et al. show that in transdisciplinary activities, which combine scientific research and the cultural dimension, there is better performance in learning outcomes.

The dominance of the Value of Cooperation in class interaction also adds to previous arguments proposing that the nature of collectivism can improve civic duty and social ability (Redhana et al., 2023; Supriyadi & Wulandari, 2023). Session activities that include culturally specific games and peer mentoring build relationships of mutual respect and friendship, strengthening SDG 4.7 and SDG 17. These results support the statement of Banks and McGees (2022) that to be effective, global citizenship education must be rooted in the learner's own experiences.

But the research also identified implementation challenges for this fusion. Curriculum rigidity, lack of resources, and inadequate SDG training for teachers are recurring obstacles. These results are in line with those reported by Arjaya et al. (2024), who observed that cultural content cannot be easily aligned with global frameworks due to structural barriers. While previous studies have been primarily at the level of policy analysis, this study offers a micro-level understanding of how teachers reframe lesson plans, working closely with the community and students assessing alternatives in addressing these challenges.

Interestingly, the findings of the Diversity Relationship show that there are some reinforcements and opposition to the evidence in existing science. Although the students wrote that they had evolved in terms of empathy and intercultural awareness (Ingriyani & Supriyadi, 2024), the findings also revealed expressions of locally 'fragile' diversity and missed stories from around the world. This subtlety implies that although cultural appreciation is present, the scaffolding of global competencies may be more intentional.

The Learning Improvement Dimension emphasizes that SDG education, when embedded in the context, increases student engagement and acceptance rates. According to them, greater student participation and more complex moral reasoning are achieved by using lessons with the context of local wisdom. These findings are in line with the constructivist perspective that knowledge is constructed together from culturally competent experiences (Creswell & Poth, 2018; Lincoln & Guba, 1985). Nevertheless, due to the qualitative nature of our study, this interpretation is warranted. Results apply to school contexts and

should not be generalized to other educational settings.

These findings may help us understand how culturally responsive teaching can mediate global citizenship education in the Southeast Asian context. They emphasized the role of teachers' agencies, community participation, and curriculum flexibility in realizing SDG values through local wisdom. In addition, the study highlights the need for teacher training programs to prepare teachers to incorporate cultural content in an in-depth and ethical way.

A longitudinal design will be important for further research to investigate the lasting effects of SDG-culture embedding on student outcomes. Cross-regional and cross-cultural comparisons may also illuminate how indigenous values intersect with the global schema. In addition, an in-depth investigation of the role of student voices and identity construction can provide relevant knowledge about the transformational forces inherent in culture-anchored education.

CONCLUSION

This research was conducted in order to examine the integration of Javanese local wisdom as part of SDG-based learning in elementary schools, seen from five aspects: Integration of Local Wisdom, Cooperation Values, Diversity Relationships, Implementation Challenges, and Learning Improvement. Using a qualitative approach supported by Atlati 2025, the study documents the "real-life" experiences of teachers and students, enabling an illuminating analysis of where cultural narratives intersect with pedagogical practices in critical global citizenship education.

The implications of these findings make a significant contribution to the field of culturally responsive pedagogy and curriculum development related to the SDGs. This research contributes to a body of knowledge that argues for a locally driven approach to global education by showing that local values such as "gotong royong, tembang dolanan", and "unggah-ungguh" can be successfully incorporated into the global learning framework. These observations affirm the relevance of culture as a central, rather than peripheral, device for promoting ethical awareness,

collaboration, and cross-cultural understanding in primary schools.

The importance of the involvement of teachers and community agents in navigating structural constraints, including inflexible curriculum and scarce material resources, is specifically emphasized in this study. The innovative practices used—thematic lesson plans for alternative assessments—highlight the possibility of "bottom-up" reforms. Such a contribution may be particularly notable in a Southeast Asian environment, where cultural diversity and centralized policies are the norm.

But learning also has its own drawbacks. The research sample was limited to specific schools in East Java; therefore, the generalizability of the results should be approached with caution. In addition, the qualitative findings are in-depth, but the justification of the results is not supported by statistical evidence. Limitations must be acknowledged when interpreting these findings and considering their broader application.

Recommendations

Future research should expand the scope to compare across different regions and cultures, and to adopt longitudinal designs to investigate the long-term effects of culture-SDG integration on student development. Studies on student identity development, teacher professional learning, and school community relations can also contribute to a deeper understanding of these topics.

From a practical perspective, the results suggest that policymakers may need to reconsider curriculum regulations to provide more space for integrating local content. Professional development programs should support teachers in developing the competencies and self-efficacy necessary to engage in culturally relevant SDG education. The goal is for schools to create an environment where families and community members are involved as learning partners in promoting sustainability, compassion, and cultural awareness.

In conclusion, this work presents an empirically derived model of how sustainable, inclusive, and culturally embedded learning practices can be achieved. It is a reminder that the path to global

citizenship begins with a deep respect for local wisdom – and that meaningful education must respect both.

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