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# ENGLISH CURRICULUM INNOVATION FOR SUSTAINABILITY: EMBEDDING SDGS, DIGITAL CULTURE, AND GLOBAL HUMAN VALUES IN INDONESIAN SCHOOLS

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## ABSTRACT

*This study proposes an innovative English curriculum model for Indonesian secondary schools that integrates Sustainable Development Goals (SDGs), 21st-century skills, and character education within the broader context of digital culture and global human values. Using a Research and Development (R&D) approach with the ADDIE framework, the study combines systematic literature review, policy analysis, Focus Group Discussions, and classroom trials. Findings reveal that embedding SDG themes into English Language Teaching (ELT) enhances students' critical thinking, empathy, collaboration, and intercultural awareness, while also aligning with national reforms such as Kurikulum Merdeka and Profil Pelajar Pancasila. The model emphasizes thematic SDG units, reflective learning stages, collaborative projects, differentiated instruction, and formative assessment supported by digital tools. Classroom implementation confirmed its relevance, though challenges such as vocabulary scaffolding and time constraints remain. By situating ELT within the discourse of educational science and technology, this research demonstrates how language education can serve as a bridge between sustainability, digital culture, and global citizenship. The study contributes to interdisciplinary scholarship by offering a replicable case of curriculum innovation that advances both educational transformation and cultural sustainability.*

**KEYWORDS:** English Language Teaching, Curriculum Innovation, Sustainable Development Goals, 21st-Century Skills, Character Education, Digital Culture in Education, Global Human Values, Educational Science and Technology.

## 1. INTRODUCTION

Education is widely recognized as a transformative force in achieving the United Nations Sustainable Development Goals (SDGs), particularly Goal 4: Quality Education, which underpins the success of all other goals (UNESCO, 2020). Beyond its cognitive function, education is expected to cultivate values, critical awareness, and social responsibility, preparing future generations to address pressing challenges such as climate change, inequality, technological disruption, and sustainable development (OECD, 2018; Aljuaid, 2021; Pountney, 2025). Within this global agenda, English Language Teaching (ELT) holds a strategic role. As a global lingua franca, English is not only a medium of communication (Yu et al., 2024; Cordova, 2024) but also a vehicle for intercultural understanding, global citizenship, and the dissemination of sustainability-oriented values.

In Indonesia, however, ELT remains predominantly oriented toward academic achievement and linguistic proficiency, with classroom practices often limited to grammar drills, vocabulary memorization, and exam preparation (Sukma et al., 2022). While these elements are foundational, they restrict the broader educational potential of ELT as a transformative platform for cultivating global awareness, intercultural competence, and ethical responsibility (Fransiska, 2023). This narrow focus has created a gap between the skills students acquire in classrooms and the competencies required to navigate the realities of the 21st century. At the same time, the country faces pressing challenges related to character formation, including declining empathy, weak social responsibility, and insufficient awareness of ethical behavior in increasingly digitalized environments (Fransiska et al., 2023; Fransiska et al., 2024). These issues underscore the urgent need for pedagogical innovation that situates ELT within broader socio-technical transitions toward sustainability and responsible citizenship.

The framework of 21st century skills—critical thinking, communication, collaboration, and creativity—has been widely recognized as essential for preparing learners to thrive in a rapidly changing world (Trilling & Fadel, 2009; Kain et al., 2024; Yin et al., 2023). Yet, in many Indonesian classrooms, these competencies are not systematically embedded within language learning. Similarly, while SDGs have been adopted as a global agenda, their integration into school curricula, particularly in ELT, remains fragmented and underdeveloped (Mambu, 2022; UNESCO, 2023). Previous studies have

explored the incorporation of sustainability themes into education, but few have explicitly combined SDGs, 21st century skills, and character education into a coherent and contextualized ELT model (Sukarno & Riyadini, 2024). This gap highlights the need for a conceptual framework that bridges these dimensions in ways that are pedagogically sound, culturally relevant, and globally aligned.

Global frameworks such as UNESCO's Education for Sustainable Development (ESD) and Global Citizenship Education (GCED) (Gonsalves, 2024; Wulansari et al., 2020), alongside the OECD Global Competency Framework (Mohalla, 2024), emphasize the role of language learning in fostering intercultural competence, sustainability awareness, and ethical reflection. In parallel, the British Council's English for the Future and Languages for Resilience initiatives highlight the transformative potential of ELT in shaping learners' identities as active participants in global society (Adamson & Brown, 2024; British Council, 2021). These frameworks converge on the idea that language education must evolve beyond its conventional boundaries to prepare students not only as proficient communicators but also as responsible global citizens who embody empathy, collaboration, and critical thinking.

National curriculum reforms in Indonesia, such as the Kurikulum Merdeka, the 2025 Graduate Competency Standards (SKL), and updated Learning Outcomes (CP), emphasize project-based learning, contextual relevance, differentiated instruction, and character education (Bekteshi & Khaferi, 2020a, 2020b; Hendawy et al., 2024; Kemendikbudristek, 2022; Kemendikbudristek, 2025). Profil Pelajar Pancasila articulates six key dimensions—faith, global citizenship, independence, critical thinking, creativity, and collaboration—that align closely with both SDGs and 21st century competencies (Marshall, 2010). Yet, despite these policy directions, classroom practices often remain textbook-driven, with limited integration of sustainability themes or digital culture (Aljuaid, 2021; Khalid et al., 2021). Teachers frequently struggle to translate policy aspirations into meaningful classroom experiences, highlighting the need for operational models that bridge theory, policy, and practice (Oates & Johnson, 2025).

This study responds to that need by designing and validating an innovative conceptual model of ELT that integrates SDGs and 21st century skills to strengthen character education in Indonesian schools. Grounded in a Research and Development (R&D) approach and guided by the ADDIE framework, the study combines systematic literature

review, focus group discussions with educators and curriculum experts, and limited classroom trials to ensure both theoretical robustness and practical applicability (Nahdi et al., 2024; Yu et al., 2024). By embedding sustainability-oriented themes into English learning activities, the model positions ELT as a platform for cultivating reflective, responsible learners who are capable of addressing both local and global challenges.

The contribution of this research is twofold. First, it advances pedagogical innovation by reframing ELT as a socio-technical instrument for sustainable development, thereby extending its role beyond linguistic competence. Second, it demonstrates how curriculum design can generate tangible societal impact by fostering character education, global awareness, and interdisciplinary collaboration among students. In this way, the study offers a replicable case of curriculum innovation that supports holistic student growth and contributes to the shaping of scientific culture in the digital age.

**Based on these gaps and objectives, the study is guided by the following research questions:**

- 1) What are the key components of an SDG-integrated English language teaching (ELT) model that embeds 21st century skills?
- 2) How can such a model be designed to be contextual and applicable within Indonesian schools?
- 3) To what extent do teachers and students perceive and respond to the implementation of this model in fostering character education?

These questions provide the analytical framework for the study, ensuring that the model is not only theoretically grounded but also practically validated through literature review, focus group discussions, and classroom trials (Nahdi et al., 2024; Yu et al., 2024; Sukarno & Riyadini, 2024).

## 2. LITERATURE REVIEW

### 2.1. *English Language Teaching and Its Expanding Role*

Traditionally, English Language Teaching (ELT) has focused on linguistic proficiency—grammar, vocabulary, and reading comprehension (Sukma et al., 2022). While these elements remain foundational, recent scholarship has expanded the role of ELT to include the development of critical thinking, intercultural competence, and global awareness (Wang & Seepho, 2017; Aure & Cuenca, 2024; Palmquist et al., 2025). Scholars argue that ELT should evolve beyond language mechanics to foster reflective and socially engaged learners, aligning with broader educational goals of preparing students

for complex global realities (Saritepeci & Yildiz Durak, 2024).

In Indonesia, however, ELT practices remain largely textbook-driven, with limited integration of real-world issues or character education. While communicative approaches are gaining traction, thematic content often lacks relevance to students' lived experiences (Adamson & Brown, 2024; Hendawy et al., 2024). This disconnect underscores the need for curriculum innovation that embeds global themes and values into language instruction, situating ELT within the discourse of digital culture in modern education.

### 2.2. *Sustainable Development Goals (Sdgs) In Language Education*

The United Nations' Sustainable Development Goals (SDGs) provide a global framework for addressing pressing social, environmental, and economic challenges (Alimehmeti et al., 2024; Underwood et al., 2025). Education plays a central role in achieving these goals, particularly through SDG 4, which emphasizes inclusive, equitable, and quality education that promotes lifelong learning (UNESCO, 2020).

In ELT, SDGs offer rich thematic content that can be embedded into lessons to foster global awareness and ethical reflection. Topics such as climate change, gender equality, and responsible consumption provide authentic contexts for language use while promoting values aligned with sustainability (Yu et al., 2024; Cordova, 2024). Methodologically, this integration often involves project-based learning, critical pedagogy, and multimodal literacy. Students exposed to SDG-based ELT activities demonstrate increased empathy, collaboration, and agency, confirming the potential of language education as a platform for civic engagement (Bekteshi & Xhaferi, 2020a).

Despite these promising developments, challenges remain. Many ELT materials lack explicit references to SDGs, and teachers often require additional support to design lessons that align with both language objectives and sustainability goals (Khalid et al., 2021). This highlights the need for operational models that guide educators in embedding SDGs into ELT in a structured and pedagogically sound manner.

### 2.3. *21st Century Skills and Character Education In ELT*

The integration of 21st century skills into education has become a global priority, with frameworks from organizations such as the World

Economic Forum and Partnership for 21st Century Learning (P21) emphasizing critical thinking, creativity, collaboration, and communication as essential competencies (Trilling & Fadel, 2009). Language classrooms are particularly well-suited to cultivating these competencies, especially when instruction moves beyond rote learning to include project-based tasks, peer collaboration, and digital literacy (Czerkowski & Berti, 2020).

In Indonesia, the 2025 Graduate Competency Standards (SKL) and Kurikulum Merdeka explicitly promote these skills, positioning them as core outcomes of secondary education (Hendawy et al., 2024). Character education has also gained renewed attention, with Profil Pelajar Pancasila outlining six key dimensions—faith, global citizenship, independence, critical thinking, creativity, and collaboration—that reflect both national values and global competencies (Marshall, 2010). Embedding these dimensions into ELT requires a shift from traditional grammar-focused instruction to thematic, reflective, and socially engaged pedagogy (Arthur, 2024; Kristjánsson et al., 2024).

Research shows that when students engage with real-world issues in English class—such as gender equality or climate action—they demonstrate greater empathy, resilience, and civic awareness (Bekteshi & Khaferi, 2020b). However, many teachers lack the pedagogical tools to integrate character education meaningfully into language instruction, reinforcing the need for models that provide clear strategies for embedding values and competencies into ELT (Oates & Johnson, 2025).

#### **2.4. International Policy and Pedagogical Guidelines**

International organizations have played a pivotal role in shaping the discourse on education for sustainable development (ESD) and global citizenship education (GCED). UNESCO's ESD for 2030 Roadmap (UNESCO, 2020) outlines five priority action areas—policy, capacity building, learning environment transformation, youth empowerment, and global collaboration. For ELT, this implies embedding sustainability-oriented themes into language learning activities, thereby linking linguistic competence with ethical and social responsibility.

The UNESCO Institute for Statistics (UIS) developed the SDG 4.7.1 Measurement Strategy (UIS, 2019) and complementary indicators (UIS, 2020) to assess the integration of sustainability into curricula, teacher training, and student assessment. These documents highlight the critical role of teachers as

mediators of global values in classroom practice. The Teachers Have Their Say report (UNESCO, 2021) adds empirical evidence, revealing that while policy frameworks are advancing, many teachers face challenges such as limited resources, insufficient training, and institutional constraints.

The OECD's Global Competency for an Inclusive World (OECD, 2018) reinforces the idea that language learning is inseparable from global citizenship, positioning English as a medium for intercultural dialogue and ethical participation. Similarly, the British Council's Languages for Resilience report (British Council, 2021) emphasizes the role of language education in building community resilience in contexts of crisis, conflict, and displacement. Together, these frameworks converge on the principle that ELT must evolve into a transformative practice that fosters sustainability, intercultural competence, and ethical reflection.

#### **2.5. National Policy and Practical Teaching Documents**

National curriculum reforms in Indonesia provide the normative and operational foundation for embedding SDGs and 21st century skills into ELT. The Kurikulum Merdeka (Kemendikbudristek, 2022) emphasizes student-centered learning, project-based approaches, and contextual relevance, encouraging teachers to design learning experiences that connect classroom content with real-world issues.

The Standar Kompetensi Lulusan (SKL) introduced in 2025 defines eight dimensions of graduate profiles, including critical reasoning, creativity, collaboration, independence, communication, citizenship, and faith (Kemendikbudristek, 2025). This policy strengthens the orientation toward deep learning and 21st century skills, providing a normative basis for integrating language learning with character formation and sustainability values. Complementing this, the updated Capaian Pembelajaran (CP) for English outlines communicative and functional competencies aligned with global contexts, serving as a technical guide for teachers to embed SDGs into ELT.

Practical teaching documents such as official textbooks (Work in Progress, English for Change, Life Today) provide thematic content for senior high school English classes. While these texts present global themes, analyses reveal that they do not explicitly embed SDGs, leaving room for teachers to adapt and enrich materials with sustainability-oriented content (Pusat Perbukuan, 2022). Informal interviews with teachers highlight both enthusiasm

and challenges in integrating SDGs into lessons, echoing global findings that emphasize the gap between policy aspirations and classroom realities (UNESCO, 2021).

### **2.6. Methodological Contributions and Gaps In SDG-Based ELT Research**

While the conceptual integration of SDGs into ELT has gained momentum globally, methodological clarity remains a challenge. Much of the existing literature emphasizes theoretical potential but lacks detailed instructional models or empirical validation (Deo et al., 2024; Hariyani et al., 2025). Some researchers have begun to address this gap through action research and case studies. For example, Cordova (2024) conducted classroom-based interventions linking SDG themes to multimodal projects, demonstrating measurable gains in student engagement and empathy. Similarly, Yu et al. (2024) employed reflective journaling and group discussions to assess the impact of SDG-infused ELT on students' critical thinking.

These studies contribute valuable methodological insights, particularly in terms of formative assessment and student-centered learning. However, in the Indonesian context, empirical studies remain scarce. Most research focuses on curriculum analysis or teacher perceptions, without offering operational frameworks that connect policy mandates to classroom practice (Asmayawati et al., 2024).

This study responds to that need by developing and validating a conceptual model through a structured R&D approach. By combining literature review, policy analysis, focus group discussions, and classroom trials, the research offers a comprehensive methodology that bridges theory and practice. It demonstrates how SDGs, character education, and 21st century skills can be systematically embedded into ELT in a way that is pedagogically robust, contextually relevant, and aligned with both educational science and technology and the shaping of scientific culture in the digital age.

## **3. METHODOLOGY**

This study employed a Research and Development (R&D) design guided by the ADDIE framework (Analysis, Design, Development, Implementation, Evaluation). The R&D approach was selected to ensure that the proposed curriculum model was not only theoretically robust but also empirically validated and contextually relevant (Deo et al., 2024). The ADDIE framework provided a systematic pathway for integrating global frameworks such as UNESCO, OECD, and the British

Council, alongside national policies including Kurikulum Merdeka, SKL 2025, and CP 2025, into a coherent instructional model. To achieve this, the research combined three main strategies: a systematic literature review to identify theoretical foundations and best practices in integrating SDGs and 21st century skills into ELT (Nahdi et al., 2024; Yu et al., 2024), focus group discussions (FGDs) with English teachers, curriculum experts, and practitioners to validate and refine the draft model, and limited classroom trials in partner schools to gather initial responses from teachers and students regarding the applicability of the model.

The participants were selected through purposive sampling to ensure relevance to the study's objectives. Expert validators included university lecturers specializing in English education and curriculum design, as well as a senior high school supervisor with expertise in character education and SDG integration. The FGDs involved thirty stakeholders, comprising English teachers, school principals, teacher candidates, and education practitioners from secondary schools in Medan. For the classroom trials, two English teachers and sixty students from grades XI and XII at SMA Muhammadiyah 1 Medan participated. All participants provided informed consent, and ethical considerations such as confidentiality and voluntary participation were strictly observed.

A range of qualitative instruments was employed to ensure comprehensive data collection and model validation. A literature review matrix was developed to map key themes, theoretical frameworks, and methodological gaps from sources published between 2022 and 2025. The FGDs were guided by semi-structured prompts focusing on curriculum relevance, pedagogical feasibility, and model refinement. Classroom observations were documented using structured sheets that captured student engagement, teacher facilitation, and the integration of SDG themes. Interviews with teachers and students provided deeper insights into curriculum alignment, instructional challenges, and learning experiences. Finally, a validation rubric using a four-point Likert scale assessed the clarity, relevance, and applicability of the model, supplemented with qualitative feedback. All instruments were reviewed by educational experts to ensure validity and contextual appropriateness.

Data collection was conducted in three sequential phases aligned with the ADDIE model. In the analysis phase, a systematic review of academic literature and global frameworks was carried out alongside an examination of national policy

documents, confirming opportunities for embedding SDGs and 21st century skills into ELT. The design and development phase involved drafting a model centered on thematic SDG units such as climate change, gender equality, and sustainable consumption. This draft emphasized project-based learning, reflective pedagogy, and multimodal resources. Validation through FGDs refined the model, ensuring alignment with national curriculum standards and pedagogical feasibility. In the implementation and evaluation phase, limited classroom trials were conducted in partner schools. Teachers introduced thematic units, integrating SDGs into English lessons, while observations and interviews captured student engagement, language skill development, and character formation. Evaluation triangulated observation notes, interview transcripts, and feedback from dissemination forums to confirm applicability and identify challenges.

Data analysis followed a qualitative descriptive approach with thematic coding and triangulation. Literature and policy reviews were categorized into conceptual relevance, pedagogical strategies, and alignment with SDGs and competencies. FGD transcripts were analyzed thematically, focusing on curriculum alignment, feasibility, assessment, and refinement. Classroom observations were summarized descriptively to capture frequency of active participation, clarity of instruction, and quality of student output. Interviews were coded inductively to identify themes of motivation, skill development, and instructional challenges. Validation rubric scores were analyzed alongside qualitative comments to assess clarity and applicability. Analytical rigor was maintained through peer debriefing and member checking, ensuring credibility and trustworthiness of findings.

Finally, the study adhered to ethical standards in educational research. Participants were informed of the study's purpose, and consent was obtained prior to participation. Confidentiality was preserved throughout the process, and all data were anonymized during analysis and reporting.

## 4. FINDINGS

### 4.1. Insights From Literature and Policy Analysis

The initial phase of the study, which involved a systematic review of academic literature and policy documents, revealed a strong conceptual alignment between global educational frameworks and Indonesian national reforms. International initiatives such as UNESCO's Education for Sustainable Development (ESD) and Global Citizenship

Education (GCED), the OECD Global Competency Framework, and the British Council's English for the Future consistently emphasize the role of education in fostering sustainability, intercultural competence, and ethical reflection (Gonsalves, 2024; Mohalla, 2024; Adamson & Brown, 2024). These frameworks highlight language education as a transformative space where learners can develop empathy, critical thinking, and collaborative skills while engaging with global challenges.

At the national level, Indonesian policies such as Kurikulum Merdeka, the 2025 Graduate Competency Standards (SKL), and the updated Learning Outcomes (CP) advocate for differentiated instruction, project-based learning, and character education (Bekteshi & Xhaferi, 2020a; Hendawy et al., 2024). Profil Pelajar Pancasila further reinforces these priorities by articulating six dimensions—faith, global citizenship, independence, critical thinking, creativity, and collaboration—that resonate with both global and local educational aspirations. Despite this alignment, however, the review revealed significant curriculum gaps. Existing English textbooks and lesson plans remain heavily focused on linguistic mechanics, with limited integration of sustainability themes or reflective pedagogy (Aljuaid, 2021; Khalid et al., 2021). This finding underscores the urgency of developing operational models that bridge policy mandates with classroom realities, situating ELT as a platform for sustainability and digital culture.

### 4.2. Findings from Focus Group Discussion (FGD)

The Focus Group Discussions, conducted in Medan with thirty stakeholders including teachers, principals, and education practitioners, provided critical insights into the relevance, feasibility, and adaptability of the proposed curriculum model. Participants affirmed that the model aligns closely with Kurikulum Merdeka and Profil Pelajar Pancasila, particularly in its emphasis on differentiated instruction, project-based learning, and character education. Teachers highlighted the practicality of the model's structure, which integrates thematic SDG units, reflective learning stages, and collaborative tasks. They noted, however, that scaffolding strategies would be essential to support students' comprehension of complex global issues, especially in terms of vocabulary development.

Stakeholders also emphasized the importance of embedding formative assessment strategies within the model. Recommendations included the use of rubrics, peer feedback, and reflective journals to

evaluate student progress not only in language skills but also in character formation and civic awareness. Suggestions for refinement included contextualizing SDG themes to local realities, such as linking Climate Action to environmental challenges in North Sumatra, and incorporating digital tools to enhance

student engagement and accessibility. These insights confirmed that the model is both pedagogically feasible and culturally grounded, while also highlighting areas for further development to ensure inclusivity and relevance.



*Figure 1: Focus Group Discussion.*

### 4.3. Findings from Classroom Trial Implementation



*Figure 2: Trial Implementation.*

The limited classroom trial, conducted at SMA Muhammadiyah 1 Medan with sixty students from grades XI and XII, offered empirical validation of the model's effectiveness. Two thematic units – Climate Action (SDG 13) and Gender Equality (SDG 5) – were implemented. Observations revealed high levels of student engagement, with learners actively participating in collaborative tasks and discussions. Students responded positively to the real-world themes, demonstrating curiosity, empathy, and a willingness to connect global issues to their personal

experiences.

Language skill development was evident through integrated activities such as poster creation, group presentations, and reflective journaling. Teachers reported improved vocabulary retention and contextual understanding, noting that students were able to use language more meaningfully when it was tied to authentic global challenges. Character formation was also observed, as students expressed increased awareness of social issues and a desire to contribute positively to their communities. Themes

such as climate responsibility and gender respect resonated strongly, fostering civic awareness and ethical reflection.

Teacher feedback confirmed the practicality and adaptability of the model. Educators appreciated its thematic structure and the way it encouraged active learning, but they also identified challenges related to time management and vocabulary scaffolding.

They suggested expanding the model to include more local examples and digital resources, which would further enhance its relevance and accessibility. Overall, the classroom trial demonstrated that embedding SDGs into ELT can simultaneously strengthen linguistic proficiency, intercultural competence, and sustainability-oriented values.

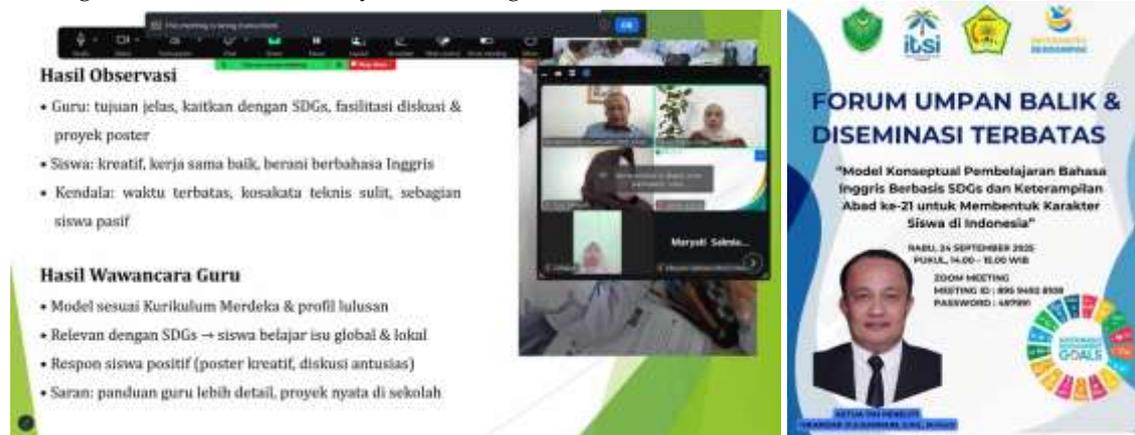


Figure 3: Disseminating Feedback From FGD.

Overall, the findings from the literature and policy analysis, stakeholder validation, and classroom trials confirm the relevance and applicability of the proposed curriculum model. The integration of SDGs into ELT enhances students' critical thinking, empathy, collaboration, and global awareness, while aligning with both international frameworks and national reforms. The model's emphasis on thematic units, reflective pedagogy, and collaborative projects situates language learning within the discourse of digital culture and global human values. At the same time, challenges such as vocabulary scaffolding and time allocation highlight the need for ongoing refinement. These results affirm the potential of ELT to serve not only as a linguistic endeavor but also as a transformative educational practice that advances sustainability and cultural relevance in Indonesian schools.

## 5. DISCUSSION

### 5.1. Alignment with Global and National Frameworks

The findings of this study confirmed that the proposed ELT model aligns with both global and national frameworks. This alignment is significant because it demonstrates that the model is not only theoretically sound but also responsive to policy directions. UNESCO's Education for Sustainable Development (ESD) and Global Citizenship Education (GCED) emphasize values-based learning

and intercultural dialogue (UNESCO, 2020; UNESCO, 2023). Similarly, the OECD Global Competency Framework highlights critical thinking, problem-solving, and inclusive communication as essential competencies for navigating global realities (OECD, 2018). By embedding SDGs into ELT, the model directly supports these priorities, positioning language classrooms as spaces where students can engage with pressing global issues while simultaneously developing linguistic proficiency.

However, alignment alone does not guarantee successful implementation. The challenge lies in operationalizing these frameworks in classrooms where practices remain exam-driven and textbook-centered. This tension between aspiration and reality echoes Parry and Metzger's (2022) findings that teachers often face structural barriers such as limited resources and insufficient training. In Indonesia, despite reforms like Kurikulum Merdeka and SKL 2025, teachers frequently struggle to translate global frameworks into meaningful classroom experiences (Aljuaid, 2021; Khalid et al., 2021). The model developed in this study therefore contributes by offering a structured pathway for teachers to embed sustainability themes into ELT without sacrificing linguistic objectives.

The implications of this alignment are twofold. First, it validates the relevance of the model within both international and national contexts, increasing its potential for adoption. Second, it highlights the importance of bridging the gap between theory and

practice. While global frameworks provide aspirational goals, the model ensures that these goals are contextualized within local realities. This dual orientation strengthens the model's credibility and underscores its potential to serve as a replicable case of curriculum innovation in other developing contexts.

### **5.2. Pedagogical Insights from Stakeholder Validation**

Stakeholder validation highlighted the importance of scaffolding strategies and formative assessment tools. These insights resonate strongly with the literature on 21st century skills. Yin et al. (2023) emphasized dialogic pedagogy and problem-based learning as effective methods for fostering critical thinking, while Cordova (2024) demonstrated the value of multimodal projects in linking language learning with sustainability issues. Our findings confirm these approaches, as teachers in the FGDs stressed the need for vocabulary support and contextualization to ensure student comprehension of complex global themes.

The emphasis on formative assessment also aligns with global recommendations for student-centered learning. Reflective journals, peer feedback, and rubrics not only capture linguistic progress but also document growth in empathy, collaboration, and civic awareness. This supports Czerkawski and Berti's (2020) argument that language classrooms can serve as laboratories for digital literacy and collaborative learning. By situating stakeholder insights within these broader pedagogical debates, the discussion demonstrates how the model operationalizes theoretical strategies identified in the literature, thereby strengthening its relevance and applicability.

At the same time, the findings highlight the importance of contextualization. Sukarno and Riyadini (2024) argued that character formation in Indonesian classrooms is most effective when language learning is tied to local realities. Our FGDs confirmed this, as teachers emphasized the need to adapt SDG themes to issues familiar to students, such as environmental challenges in North Sumatra. This suggests that while global frameworks provide valuable guidance, their success depends on local adaptation. The model's emphasis on contextual relevance therefore represents a significant contribution to the literature on sustainability-oriented pedagogy.

### **5.3. Insights from Classroom Implementation**

The classroom trials revealed that students

engaged deeply with sustainability-oriented themes, demonstrating improved vocabulary retention and heightened civic awareness. These outcomes are consistent with Yu et al. (2024), who found that reflective journaling and group discussions fostered critical thinking in SDG-infused ELT. Similarly, Cordova (2024) reported measurable gains in empathy and engagement when students worked on multimodal projects related to sustainability. Our findings therefore confirm the transformative potential of integrating SDGs into language education.

However, the trials also highlighted challenges such as time management and resource limitations. These constraints are less frequently addressed in the literature, which often emphasizes the benefits of SDG integration without considering the practical realities of classroom implementation. Teachers reported difficulty in balancing sustainability-oriented activities with existing curricular demands, particularly in contexts where exam preparation remains a priority. This underscores the importance of designing models that are not only theoretically sound but also adaptable to local realities.

The comparative analysis suggests that contextualization is key to overcoming these challenges. Sukarno and Riyadini (2024) argued that character formation is strengthened when language learning is tied to local issues, and our findings confirm this. Students responded most positively when sustainability themes were linked to familiar contexts, such as local environmental problems. This indicates that the success of SDG integration depends on the ability of teachers to adapt global themes to local realities, a point that has significant implications for curriculum design and teacher training.

### **5.4. Teacher Agency and Professional Development**

Another critical dimension emerging from the findings is the role of teachers as agents of change. The literature consistently emphasizes that teachers are central to the success of sustainability-oriented pedagogy (Parry & Metzger, 2022; UNESCO, 2021). Our FGDs revealed that teachers expressed enthusiasm for integrating SDGs into ELT, but they also identified the need for professional development and institutional support. Without adequate training, teachers may struggle to scaffold complex concepts or design assessments that capture both linguistic and character outcomes.

This insight reinforces Mambu's (2022) argument that critical pedagogy in ELT requires teachers to be

empowered as facilitators of dialogue and reflection. The model developed in this study provides a framework, but its success depends on equipping teachers with the skills and confidence to adapt it to diverse classroom contexts. Professional development programs that focus on sustainability-oriented pedagogy, digital literacy, and formative assessment are therefore essential for the effective implementation of the model.

The discussion also highlights the importance of institutional support. Teachers cannot implement sustainability-oriented pedagogy in isolation; they require resources, training, and supportive policies. This suggests that curriculum innovation must be accompanied by systemic changes in teacher education and professional development. By emphasizing teacher agency, the study contributes to the literature on educational reform, demonstrating that teachers are not merely implementers of curriculum but co-creators of transformative educational practices.

### **5.5. Digital Culture and Multimodal Learning**

The integration of multimodal texts and digital tools emerged as a key component of the model, reflecting broader trends in language education. Kain et al. (2024) argued that multimodal resources enhance creativity and digital literacy, while also providing diverse entry points for engaging with sustainability themes. Our classroom trials confirmed that students responded positively to digital and visual materials, which facilitated both language acquisition and critical engagement with global issues.

This finding situates ELT within the discourse of digital culture, as highlighted by Underwood et al. (2025). By embracing technology-enhanced learning environments, the model reflects the realities of the digital age and prepares students to navigate complex socio-technical transitions. At the same time, it extends the literature by demonstrating how digital tools can be integrated with sustainability-oriented pedagogy, thereby linking linguistic competence with ethical and civic responsibility.

The implications of this integration are significant. Digital tools not only enhance student engagement but also provide opportunities for collaborative learning and intercultural dialogue. This supports the argument by the British Council (2021) that language education can contribute to resilience and inclusion in diverse social contexts. By embedding digital culture into ELT, the model ensures that students are prepared to participate in global conversations while also developing the skills

necessary for responsible citizenship in the digital age.

### **5.6. Interdisciplinary Contributions and Societal Impact**

Beyond pedagogy, the study contributes to interdisciplinary scholarship by reframing ELT as a socio-technical instrument for sustainable development. The literature review highlighted how language education intersects with digital culture, global citizenship, and ethical responsibility (British Council, 2021; Hariyani et al., 2025). Our findings extend this argument by demonstrating empirically that ELT can cultivate reflective, responsible learners who are prepared to address both local and global challenges.

This interdisciplinary orientation underscores the potential of language education to serve as a bridge between local realities and global challenges. By aligning with both global frameworks and national reforms, the model demonstrates how curriculum innovation can generate tangible societal impact. It reframes ELT not merely as a linguistic endeavor but as a cultural and ethical practice that advances sustainability and global human values.

The societal impact of the model lies in its ability to foster empathy, collaboration, and civic responsibility. These qualities are essential for navigating the complexities of the 21st century, particularly in contexts where social cohesion and sustainability are pressing concerns. By situating ELT within the discourse of educational science and technology, the study contributes to the shaping of scientific culture in the digital age, offering a replicable case of curriculum innovation that supports holistic student growth.

## **6. CONCLUSION**

The present study has demonstrated the potential of English Language Teaching (ELT) to serve as a transformative platform for embedding sustainability values, 21st century skills, and character education in Indonesian schools. By designing and validating a conceptual model grounded in the ADDIE framework and informed by both global and national policy directions, the research has shown that ELT can move beyond its traditional focus on linguistic competence to cultivate reflective, responsible learners who are prepared to address complex local and global challenges. The findings from literature review, stakeholder validation, and classroom trials confirm that integrating SDGs into ELT enhances students' critical thinking, empathy, collaboration, and

intercultural awareness, while also aligning with curriculum reforms such as Kurikulum Merdeka and SKL 2025.

One of the key contributions of this study lies in its ability to bridge the gap between theory and practice. While global frameworks such as UNESCO's ESD and OECD's Global Competency Framework provide aspirational goals, classroom realities in Indonesia often remain exam-driven and textbook-centered. The model developed here offers a structured pathway for teachers to operationalize sustainability-oriented pedagogy in ways that are both pedagogically sound and contextually relevant. By emphasizing thematic SDG units, reflective learning, collaborative projects, and multimodal resources, the model provides practical strategies for embedding global values into everyday classroom activities.

The study also underscores the importance of teacher agency and professional development. Teachers emerged as central actors in the successful implementation of the model, yet they also identified challenges related to vocabulary scaffolding, time management, and resource limitations. These insights highlight the need for systemic support, including training programs, institutional resources, and policy frameworks that empower teachers as facilitators of change. Without such support, the transformative potential of ELT may remain unrealized.

Despite its contributions, the study acknowledges certain limitations. The classroom trials were limited in scope and duration, focusing on two thematic units with a relatively small sample of students. While the results were promising, further research is needed to assess the long-term impact of SDG-integrated ELT on student learning outcomes, character formation, and civic engagement. Additionally, the model was tested in urban schools in Medan, and its applicability to rural or resource-constrained contexts remains to be explored. These limitations open avenues for future research, particularly in scaling the model across diverse educational settings and integrating it with digital platforms for broader accessibility.

Thus, the study offers several directions for practice and policy. For educators, the model provides a replicable framework for designing lessons that connect language learning with sustainability and character education. For policymakers, it demonstrates the importance of aligning curriculum reforms with classroom realities, ensuring that teachers are equipped with the tools and support necessary to implement transformative

pedagogy. For researchers, it highlights the need for interdisciplinary approaches that situate ELT within the broader discourse of educational science, digital culture, and global citizenship.

In conclusion, this study reframes ELT as more than a linguistic endeavor; it positions language education as a socio-technical instrument for sustainable development and cultural transformation. By integrating SDGs, 21st century skills, and character education into ELT, the model contributes to the shaping of scientific culture in the digital age and offers a pathway for cultivating learners who are not only proficient communicators but also empathetic, collaborative, and critically aware citizens.

## 7. IMPLICATIONS FOR PRACTICE AND POLICY

The results of this study carry important implications for classroom practice. For teachers, the SDG-integrated ELT model provides a practical framework for designing lessons that move beyond grammar drills and exam preparation. By embedding sustainability themes into language activities, teachers can cultivate critical thinking, empathy, collaboration, and intercultural awareness alongside linguistic competence. The emphasis on project-based learning, reflective pedagogy, and multimodal resources ensures that lessons are not only engaging but also relevant to students' lived experiences. Teachers can adapt global themes to local contexts, such as linking climate action to environmental challenges in North Sumatra, thereby making learning more meaningful and culturally grounded.

For schools and curriculum leaders, the model offers a replicable approach to operationalizing national reforms such as Kurikulum Merdeka and SKL 2025. These reforms emphasize deep learning, contextual relevance, and character education, yet classroom practices often remain limited to textbook-driven instruction. The model bridges this gap by providing concrete strategies for integrating policy aspirations into classroom realities. Schools can use the model to guide curriculum planning, professional development, and assessment design, ensuring that sustainability and character education are embedded systematically into English language teaching.

At the policy level, the study highlights the need for systemic support to enable teachers to implement sustainability-oriented pedagogy effectively. Professional development programs focusing on SDG integration, digital literacy, and formative

assessment are essential for equipping teachers with the skills and confidence to adapt the model to diverse classroom contexts. Policymakers should also ensure that resources, training, and institutional frameworks are available to support teachers as agents of change. Without such support, the transformative potential of ELT may remain unrealized.

Finally, the study underscores the importance of aligning national curriculum reforms with international frameworks. By situating ELT within

the discourse of ESD, GCED, and global competency, Indonesia can strengthen its role in preparing learners for global citizenship while also addressing local challenges. The model demonstrates how curriculum innovation can generate tangible societal impact, contributing to both educational transformation and cultural sustainability. For policymakers, this underscores the value of investing in curriculum models that are interdisciplinary, contextually relevant, and globally aligned.

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