

Global Dialogues in Humanities and Pedagogy

Bridging Tradition and Technology Indonesian Language and Literature Learning in the Digital Era for Elementary Students

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ABSTRACT

This study investigates the integration of digital technologies in Indonesian language and literature instruction for elementary school students across urban and rural Indonesian contexts. Through mixed-methods research involving surveys, interviews, and classroom observations across thirty-six elementary schools in Java, Sumatra, and Sulawesi, the research examines how digital tools shape literacy development, literary appreciation, and cultural identity formation among primary learners. Findings reveal that while digital platforms enhance student engagement and provide access to diverse literary resources, significant disparities exist in technological access, teacher digital competency, and pedagogical integration quality. The study demonstrates that effective digital integration requires balancing technological innovation with preservation of traditional literacy practices, careful attention to age-appropriate content, and systematic teacher professional development. Successful implementations combined interactive digital storytelling, multimedia composition tools, and online collaborative writing with conventional reading practices and face-to-face literary discussions, suggesting that hybrid approaches optimize learning outcomes while maintaining

cultural-linguistic foundations essential for elementary language development.

INTRODUCTION

The digital revolution has fundamentally transformed educational landscapes globally, creating both unprecedented opportunities and complex challenges for language and literature instruction, particularly in elementary education where foundational literacy skills are established (Merchant, 2007). In Indonesia, the world's fourth most populous nation with remarkable linguistic diversity encompassing over seven hundred regional languages alongside the national language Bahasa Indonesia, digital technologies offer potential for enhancing language learning while simultaneously raising concerns about cultural preservation and equitable access (Lauder, 2008). Elementary education represents a critical period for Indonesian language acquisition and literary appreciation, as students develop reading fluency, writing competencies, and connections to national literary heritage during these formative years.

Digital technologies including tablets, educational applications, interactive e-books, online platforms, and multimedia creation tools have proliferated throughout Indonesian schools, driven by government initiatives promoting educational technology and broader societal digitalization trends (Arsyad, 2019) and (Muhsyanur Muhsyanur, 2024). The Indonesian Ministry of Education and Culture has implemented various programs encouraging technology integration, including digital textbook distribution, internet connectivity expansion, and teacher training in technology-enhanced pedagogy. However, implementation remains highly uneven, with substantial disparities between urban and rural schools, well-resourced and under-resourced institutions, and technologically proficient and less prepared educators creating what scholars term a "digital divide" that potentially exacerbates existing educational inequalities (Hadiyanto, 2017).

Language and literature education occupy unique positions within digital transformation discourse, as these subjects simultaneously benefit from technological affordances while requiring careful preservation of traditional practices essential for deep literacy development (Muhsyanur et al., 2021; Muhsyanur and Ramlee Bin Mustapha, 2023). Digital tools can enhance language learning through interactive exercises, immediate feedback, multimodal content presentation, and access to extensive literary resources previously unavailable to many Indonesian students. Digital storytelling, collaborative online writing, and multimedia composition enable creative expression modalities extending beyond conventional text-based assignments, potentially increasing student motivation and engagement with language learning (Robin, 2008).

However, scholars caution that uncritical technology adoption risks undermining fundamental literacy skills including sustained reading concentration, critical textual analysis, handwriting development, and deep comprehension that extensive research demonstrates as crucial for elementary students' cognitive and linguistic development (Wolf, 2018). The Indonesian literary tradition, encompassing rich oral storytelling heritage, classical literature, and contemporary works exploring national identity and cultural values, requires pedagogical approaches fostering contemplative engagement that rapid digital consumption patterns may not facilitate. Elementary students particularly need structured guidance developing foundational literacy competencies before extensive digital tool usage, raising questions about optimal timing and methods for technology integration (Muhsyanur et al., 2021).

Theoretical frameworks addressing technology in language education emphasize the importance of pedagogical intentionality rather than technological determinism, recognizing that educational outcomes depend not on technology presence but on how educators integrate tools within coherent instructional designs aligned with learning objectives (Koehler & Mishra, 2009). The Technological Pedagogical Content Knowledge framework developed by Koehler and Mishra highlights that effective technology integration requires teachers to possess not only technical skills but also deep understanding of how specific technologies interact with particular content areas and pedagogical approaches. For Indonesian language and literature instruction, this framework suggests teachers must carefully consider how digital tools can authentically enhance linguistic and literary learning rather than simply replacing traditional practices with technological alternatives.

Sociocultural perspectives on literacy emphasize that language learning extends beyond skill acquisition to encompass identity formation, cultural participation, and social meaning-making processes deeply embedded in specific cultural contexts (Street, 2003). For Indonesian elementary students, language and literature education contributes to national identity development, connection with cultural heritage, and understanding of Indonesia's position within global contexts. Digital technologies introduce new literacy practices and cultural influences, potentially enriching students' linguistic repertoires while also raising concerns about cultural homogenization and diminished connection to Indonesian literary traditions. This tension between global digital culture and local cultural preservation constitutes a central challenge for Indonesian language education in the digital era.

Despite substantial scholarly attention to educational technology generally and growing literature on digital literacy, relatively limited research specifically examines how digital technologies affect Indonesian language and literature learning at the elementary level, where developmental considerations and foundational skill-building create unique pedagogical dynamics (Kartikasari & Wijayaningsih, 2017). Much existing research focuses on secondary or tertiary education, potentially overlooking age-specific concerns crucial for younger learners. Additionally, scholarship often originates from Western contexts with different

linguistic, cultural, and infrastructural circumstances than Indonesia, limiting direct applicability to Indonesian educational realities.

The current study addresses these gaps through systematic investigation of digital technology integration in Indonesian language and literature instruction across diverse elementary school contexts. By examining both implementation practices and learning outcomes, alongside teacher and student perspectives on digital tools' roles in language education, this research illuminates effective, culturally appropriate, and developmentally suitable approaches for leveraging technology while preserving essential traditional literacy practices. The investigation explores how Indonesian elementary schools navigate tensions between innovation and tradition, access and equity, and global connectivity and cultural preservation within language and literature education, offering insights valuable for educators, policymakers, and researchers concerned with elementary language instruction in digitally mediated contexts.

METHOD

This mixed-methods study employed a convergent parallel design to investigate digital technology integration in Indonesian language and literature education across thirty-six elementary schools in Java, Sumatra, and Sulawesi provinces, selected to represent diverse geographic, socioeconomic, and technological resource contexts. Quantitative data collection involved surveys administered to 324 elementary teachers specifically teaching Indonesian language and literature, measuring technology integration frequency, pedagogical practices, perceived effectiveness, and challenges encountered when implementing digital tools. The survey incorporated validated instruments including the Technology Integration Assessment Rubric adapted for Indonesian contexts and researcher-developed scales assessing specific practices relevant to language and literature instruction. Student literacy assessment data were collected through standardized reading comprehension and writing quality measures administered to 1,847 students across grades three through six, comparing outcomes between high-technology-integration and low-technology-integration classrooms while controlling for confounding variables including prior achievement, socioeconomic status, and school resources (Creswell & Plano Clark, 2018).

Qualitative data collection complemented quantitative findings through semi-structured interviews with forty-eight teachers, twelve school administrators, and seventy-two students across sampled schools, exploring experiences with digital tools, pedagogical decision-making processes, and perceptions of technology's impact on language and literary learning. Classroom observations documented actual technology usage patterns, instructional strategies, student engagement, and learning activities in thirty-six language lessons incorporating digital tools. Document analysis examined digital learning materials, student work samples, and curriculum documents to understand content and pedagogical approaches. Qualitative analysis followed Merriam and Tisdell's (2016) constructivist case study

methodology, employing thematic coding to identify patterns across participants and contexts, with particular attention to cultural and contextual factors shaping technology integration. Data integration utilized joint display techniques comparing quantitative patterns with qualitative themes to develop comprehensive understanding of digital technology's role in Indonesian language education (Fetters et al., 2013). Ethical approval was obtained from relevant Indonesian educational authorities, with informed consent procedures adapted for child participants including parental permission and age-appropriate assent processes ensuring voluntary participation and confidentiality protection.

RESULT AND DISCUSSION

Enhanced Engagement Through Multimodal Learning Experiences

Analysis revealed that digital technologies significantly enhanced student engagement with Indonesian language and literature content, particularly when implementations leveraged multimedia and interactive capabilities distinctive to digital platforms. Teachers reported that interactive e-books incorporating animation, audio narration, and embedded vocabulary support captured student attention more effectively than conventional textbooks, with elementary learners demonstrating particular enthusiasm for features enabling them to manipulate story elements or make narrative choices. One Jakarta teacher described how digital folktale collections with animated illustrations and professional voice narration transformed previously disengaged students into eager participants, noting that the multimodal presentation helped struggling readers access literary content that conventional text-only formats rendered inaccessible.

Statistical analysis demonstrated that classrooms employing multimedia digital storytelling showed significantly higher engagement indicators including voluntary reading time, participation in literary discussions, and expressed interest in Indonesian literature compared to conventional instruction control groups. The effect sizes proved particularly substantial for male students and learners with previously identified reading difficulties, populations often demonstrating lower engagement with traditional language instruction. Digital platforms enabling students to create their own multimedia stories—combining text, images, audio recordings, and sometimes video—generated exceptional motivation, with teachers noting that students invested considerable effort in productions they could share with peers and families through digital platforms.

However, engagement patterns showed concerning superficiality in some implementations, with students attracted to entertainment aspects of digital content without developing deeper comprehension or analytical skills that quality literary education requires. Several teachers described students enthusiastically consuming digital stories but struggling to articulate themes, analyze character development, or connect narratives to broader cultural contexts, suggesting that engagement alone does not ensure meaningful learning. Classroom observations confirmed this pattern, revealing instances where flashy digital presentations distracted from rather

than supported substantive literary engagement, with students focused on technological features rather than textual meaning.

The research identified pedagogical strategies distinguishing productive from superficial digital engagement, including explicit comprehension questioning during digital reading, structured post-reading discussions connecting digital content to traditional literary concepts, and scaffolded analysis activities requiring students to examine how multimedia elements contributed to narrative meaning. Teachers successfully fostering deep engagement combined digital tools' motivational affordances with intentional instructional design ensuring that technology enhanced rather than replaced critical literacy practices. One Surabaya teacher exemplified this approach by using interactive digital folktales as entry points for engagement, then transitioning to close reading activities with printed texts and culminating in student-created digital retellings requiring demonstrated comprehension and cultural understanding, illustrating how strategic sequencing optimizes digital tool benefits.

Technological Access Disparities and the Digital Divide

Investigation uncovered substantial disparities in technological access creating unequal opportunities for digital-enhanced Indonesian language learning across Indonesian elementary schools. Urban schools in major cities like Jakarta, Surabaya, and Medan typically possessed computer laboratories, classroom projectors, reliable internet connectivity, and sometimes individual student tablets, enabling regular technology integration. Conversely, many rural schools lacked basic technological infrastructure including reliable electricity, possessed few or no computers, and operated without internet access, rendering digital language learning practically impossible regardless of teachers' pedagogical intentions or students' potential to benefit from such approaches.

Survey data quantified these disparities dramatically, with eighty-seven percent of urban schools reporting regular technology integration in language instruction compared to only twenty-three percent of rural schools. Even among schools possessing technological equipment, functionality varied widely, with numerous teachers describing outdated computers, unreliable internet connections, and insufficient devices requiring students to share equipment in ways that limited individual engagement. One rural Sulawesi teacher poignantly described receiving government-issued tablets without accompanying internet infrastructure or technical support, leaving the devices unused in storage while instruction continued through conventional methods due to inability to access digital content or troubleshoot technical problems.

Socioeconomic disparities compounded geographic inequalities, as schools serving affluent communities supplemented government resources with parent contributions funding enhanced technology access, while schools in economically disadvantaged areas relied entirely on limited public resources. This pattern created concerning scenarios where advantaged students received rich digital learning

experiences while disadvantaged peers, who might benefit most from expanded resource access, experienced only traditional instruction with limited materials. Several teachers expressed frustration that educational technology initiatives intended to democratize learning access actually exacerbated existing inequalities by creating new advantages for already-privileged students.

The digital divide extended beyond hardware access to encompass teacher technological competency and professional development availability, dimensions equally crucial for effective implementation. Teachers in well-resourced schools typically received regular professional development addressing educational technology, belonged to communities of practice sharing digital pedagogical strategies, and possessed time and support for experimenting with new tools. Teachers in under-resourced settings often received minimal technology training, lacked collegial networks for pedagogical exchange, and faced overwhelming teaching loads limiting capacity for innovation even when technological resources existed (Muhsyanur, 2024). This competency divide meant that even when rural or disadvantaged schools obtained equipment through government programs, teachers frequently lacked knowledge and skills to leverage tools effectively for language learning, resulting in underutilization or pedagogically superficial implementations failing to realize digital tools' potential benefits.

Balancing Digital Innovation with Traditional Literacy Foundations

The research identified critical tensions between digital innovation and preservation of traditional literacy practices essential for elementary students' foundational language development. Teachers expressed concerns that excessive screen time diminished students' concentration capacity for sustained reading of printed texts, handwriting skills declined as students increasingly composed digitally, and literary analysis depth suffered when students primarily encountered fragmented digital content rather than complete literary works requiring extended engagement. Several experienced teachers noted distinct differences between students who had developed strong conventional literacy foundations before extensive digital tool introduction and younger students whose elementary education incorporated substantial digital content from early grades, with the latter group demonstrating stronger digital navigation skills but potentially weaker traditional reading stamina and analytical depth.

These observations aligned with scholarly research suggesting that foundational literacy skills including phonemic awareness, decoding, handwriting, and sustained attention develop optimally through specific practices that digital technologies may not adequately support (Wolf, 2018). Elementary students particularly need extended practice with linear, focused reading and physical writing processes that research indicates contribute to neural development supporting literacy acquisition. Teachers implementing successful balanced approaches deliberately structured time for both digital and traditional practices,

ensuring students developed competencies across modalities rather than privileging one approach exclusively.

The tension between innovation and tradition manifested particularly acutely regarding Indonesian literary heritage preservation. Traditional Indonesian literature including classical poetry, folktales with cultural significance, and works by foundational national authors requires contemplative reading and cultural contextualization that rapid digital consumption patterns potentially undermine. Several teachers described students demonstrating greater interest in globally circulated digital content, often in English or translated from other languages, than Indonesian literary works, raising concerns about cultural identity formation and connection to national literary heritage that language education traditionally cultivates.

The table below presents findings comparing learning outcomes and skill development across different instructional approaches, illustrating the advantages of balanced implementation combining digital and traditional methods.

Table 1. Comparative Learning Outcomes Across Instructional Approaches in Indonesian Language Education

Learning Outcome Measure	High Digital Integration (N=847)	Balanced Approach (N=623)	Traditional Only (N=377)	Significant Differences
Reading Comprehension (standardized score)	73.4 (SD=12.8)	81.6 (SD=11.2)	69.8 (SD=14.3)	Balanced > High Digital*; Balanced > Traditional**
Writing Quality (holistic rubric, 1-10)	6.8 (SD=1.9)	7.9 (SD=1.6)	6.2 (SD=2.1)	Balanced > High Digital*; Balanced > Traditional**
Digital Literacy Skills (assessment score)	78.2 (SD=13.4)	76.9 (SD=12.8)	42.1 (SD=15.7)	High Digital = Balanced; Both > Traditional***
Literary Analysis Depth (coded responses)	5.3 (SD=2.4)	7.6 (SD=2.1)	6.1 (SD=2.6)	Balanced > High Digital**; Balanced > Traditional*
Cultural Content Knowledge (test score)	64.7 (SD=16.2)	79.4 (SD=13.8)	73.2 (SD=15.1)	Balanced > High Digital***; Balanced > Traditional*
Engagement/Motivation (survey scale 1-5)	4.2 (SD=0.8)	4.3 (SD=0.7)	3.1 (SD=1.1)	High Digital = Balanced; Both >

Learning Outcome Measure	High Digital Integration (N=847)	Balanced Approach (N=623)	Traditional Only (N=377)	Significant Differences
				Traditional***
Sustained Reading Time (minutes daily)	18.7 (SD=8.3)	32.4 (SD=9.6)	28.1 (SD=11.2)	Balanced > High Digital***; Balanced > Traditional*
Handwriting Quality (evaluated samples)	5.9 (SD=2.2)	7.4 (SD=1.8)	7.8 (SD=2.1)	Traditional = Balanced; Both > High Digital*

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. Balanced approach incorporated systematic integration of both digital tools and traditional literacy practices with intentional sequencing. High digital integration emphasized technology use with limited conventional text engagement. Traditional instruction employed minimal or no digital technologies.

This table demonstrates that balanced approaches integrating digital technologies with maintained traditional literacy practices produced superior outcomes across most dimensions compared to either high digital integration or traditional-only instruction. The balanced approach students showed strongest reading comprehension, writing quality, literary analysis, and cultural knowledge while maintaining high digital literacy skills and engagement levels. Notably, high digital integration students, despite strong motivation and digital skills, demonstrated weaker traditional literacy competencies and cultural content mastery compared to balanced or even traditional instruction groups. These patterns suggest that optimal Indonesian language education in the digital era requires thoughtful integration rather than wholesale adoption or rejection of digital technologies, with careful attention to preserving foundational practices while selectively incorporating digital affordances that authentically enhance learning.

CONCLUSION

This investigation reveals that digital technology integration in Indonesian language and literature education for elementary students presents complex dynamics requiring nuanced pedagogical approaches that balance innovation with preservation of foundational literacy practices. While digital tools demonstrably enhance student engagement, provide access to diverse literary resources, and develop contemporary digital literacy competencies increasingly essential in modern Indonesia, they do not constitute comprehensive solutions for elementary language education and may undermine critical traditional skills when implemented without pedagogical intentionality. The research demonstrates that balanced approaches strategically combining digital affordances with sustained conventional literacy

practices produce superior learning outcomes compared to either technology-saturated or technology-absent instruction. However, substantial access disparities across Indonesian contexts create inequitable opportunities for digital-enhanced learning, with advantaged students benefiting from rich technological resources while disadvantaged peers remain excluded from digital learning experiences. Effective digital integration requires not only technological infrastructure but also comprehensive teacher professional development, culturally appropriate content aligned with Indonesian literary heritage, and systemic support enabling educators to thoughtfully navigate tensions between global digital culture and local cultural preservation. Indonesian educational policymakers and practitioners should therefore pursue strategies ensuring equitable technological access, developing teacher technological-pedagogical competencies, and promoting balanced implementation approaches that leverage digital tools' motivational and access-expanding benefits while safeguarding contemplative reading, analytical depth, cultural connection, and foundational literacy skills that remain essential for elementary students' linguistic and literary development in the digital era.

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