

Bridging Socio-Constructivism and Digital Literacy in English Speaking Instruction: Insights from North Sumatera Contents

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Article Info	Abstract
<p>Article history:</p> <p>Received: Nov 03, 2025 Revised: Nov 23, 2025 Accepted: Nov 23, 2025</p> <hr/> <p>Keywords:</p> <p>Speaking Socio-Constructivism</p>	<p>This study investigates the integration of socio-constructivism and digital literacy principles in English speaking instruction within higher education contexts in North Sumatera, Indonesia. Responding to persistent challenges in students' oral proficiency, confidence, and access to authentic communication, the research aimed to design, implement, and evaluate digital pedagogy practices that enhance speaking competence through collaborative, technology-mediated learning. Employing a convergent mixed-methods design, the study involved 120 English education students and 12 lecturers from three universities. Data were gathered through questionnaires, classroom observations, speaking performance assessments, and interviews, and analyzed using both statistical and thematic procedures. Findings reveal that digital storytelling, podcast-based tasks, and collaborative multimedia projects significantly improved learners' fluency, motivation, and self-efficacy, aligning with socio-constructivist principles of interaction, scaffolding, and learner autonomy. Lecturers demonstrated increasing digital pedagogical competence but reported ongoing challenges related to infrastructure and training. The study concludes that embedding socio-constructivist approaches within digitally rich environments fosters communicative, multimodal, and culturally relevant speaking instruction. The proposed framework offers a sustainable model for integrating technology into English language teaching across comparable educational contexts.</p>

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A. Introduction

The landscape of English language teaching (ELT) is undergoing rapid transformation, driven by the widespread availability of digital tools and the evolving communicative demands of the 21st century. In many higher education programs, speaking remains a challenging skill for learners, particularly in regions where traditional, teacher-centered pedagogies still dominate. Students often have limited opportunities for authentic oral practice, suffer from low confidence, and receive instruction that emphasizes grammar and form rather than interactive, multimodal, and learner-centered speaking experiences. These constraints hinder the development of communicative competence and reduce learners' readiness for real-world English use.

In North Sumatera, Indonesia, English education programs at institutions such as Universitas Muhammadiyah Sumatera Utara (UMSU), Universitas Negeri Medan (UNIMED), and STKIP Al Maksum illustrate many of these challenges. While those institutions aim to produce graduates capable of using English effectively in academic, professional, and global contexts, the gap between institutional goals and classroom practice is evident. Many students report anxiety when required to

speak, lack of meaningful speaking tasks, and minimal use of technology to support speaking development. Meanwhile, lecturers often face infrastructural constraints, insufficient training in digital pedagogy, and a curriculum not fully aligned with communicative, multimodal speaking tasks. This situation underscores the urgent need for integrating socio-constructivist learning principles and digital literacy into speaking instruction.

The significance of this study lies in its potential to contribute both to theory and practice in ELT. On the theoretical side, it explores how socio-constructivism and digital literacy frameworks can jointly inform speaking instruction, shifting the paradigm from traditional, form-focused teaching to more learner-centered, interactive, and multimodal approaches. Empirically, by focusing on higher education institutions in North Sumatera, this study offers contextually grounded evidence about what works (and what doesn't) in a regionally representative Indonesian setting. The findings promise to inform policy makers, curriculum designers, teacher education programs, and institutional administrators by highlighting systemic supports needed, pedagogical strategies that succeed, and barriers that must be addressed.

The objectives of this study are as follows:

- a. To examine how socio-constructivist theories and digital literacy underpin current speaking instruction practices in select higher education institutions in North Sumatera.
- b. To identify digital pedagogical strategies (e.g., digital storytelling, multimodal tasks, online collaboration platforms, context-based speaking tasks) that are most effective in improving linguistic, communicative, and affective aspects of speaking (fluency, confidence, creative expression).
- c. To analyze key challenges in integrating socio-constructivist, digitally literate speaking instruction, particularly focusing on teacher readiness, infrastructural and access issues, and sustainability of digital integration.
- d. To propose a practical, theoretically grounded framework for embedding socio-constructivism and digital literacy into speaking instruction in contexts similar to North Sumatera.

The theoretical foundations of this study draw primarily on socio-constructivism, digital literacy, and multiliteracy. Socio-constructivism, following the work of Vygotsky, emphasizes that learning, including language learning, occurs as individuals interact with more knowledgeable others, engage in collaborative activity, and scaffold new knowledge in socially meaningful contexts. In speaking instruction, this means tasks that require peer interaction, dialogue, negotiation of meaning, and scaffolding (both from peers and instructors) are central. Digital literacy theory, meanwhile, encompasses the skills, practices, and dispositions needed for learners to access, evaluate, produce, and interact with digital media and digital content. As digital communication becomes pervasive, digital literacy becomes integral not just for reading and writing but also for speaking in video calls, podcasts, online discussions, etc. Multiliteracy adds another dimension, emphasizing multiple modes of communication (textual, visual, audio, gestural, digital) and encouraging learners to draw on a variety of semiotic resources (e.g., images, video, multimodal tasks) to construct meaning. Together, these theories provide the lens through which this study views speaking instruction not just as pronunciation + grammar, but as a richly mediated, interactive, socially situated, and multimodal practice. Recent related studies offer patterns that this research builds upon and extends. For example, *Incorporating Multiliteracy Pedagogy Elements into EFL Speaking Class Through Digital Storytelling* (Dewi, Hartono, Saleh, & Wahyuni, 2023) showed that digital storytelling allows learners to practice speaking in authentic contexts, conceptualize and analyze story content, and receive meaningful feedback, representing the four knowledge processes of multiliteracy (situated practice, overt instruction, critical framing, transformed practice). Similarly, *Perceived Benefits of Digital Storytelling for Speaking Development among Motivated Indonesian EFL Learners* (Sulistianingsih, Fitriati, & Mujiyanto, 2023) found that digital storytelling improved learners' speaking fluency, idea formulation, and confidence in a private university setting.

Studies focused on teacher side have also revealed gaps: *EFL Teacher's Strategies and Challenges in Developing Digital Competency: A Narrative Inquiry* (Priyantini & Herawati, 2022) highlighted that while teachers generally recognize the importance of digital tools and are willing to

integrate them, many struggle with lack of training, institutional support, and knowledge of how to align technology with pedagogy rather than simply using tools. In another study, *Teacher Readiness for Online Teaching Using Mobile Technology* (Rahmania, Sunggingwati, & Wardani, 2022) reported that many English and non-English teachers in several secondary schools perceived their readiness to be moderate and identified technical, pedagogical, and attitudinal barriers toward mobile-based online instruction.

Even more broadly, *Digital Literacy in EFL Learning: University Students' Perspectives* (Pertiwi, Rojab, & Siti, 2023) explored how students themselves perceive their digital literacy and found that their ability to use digital tools, search for authentic materials, interact online, etc., affects their language learning positively when such tools are well scaffolded in class. Another recent work, *Investigating Multiliteracy Pedagogy Practices of EFL-Speaking Teachers in Indonesia* (Dewi, Hartono, Saleh, & Wahyuni, 2024) explored how higher education EFL speaking teachers implement multiliteracy pedagogy; the study revealed that while many teachers use visual, audio and audiovisual modes in speaking classes, there remains inconsistency in integrating critical framing and transformed practice components. However, few of these studies focus specifically on the empirical classroom practices in the North Sumatera region, combining both student and educator perspectives, nor do they propose a framework grounded in socio-constructivism + digital literacy + multiliteracy tailored to local constraints (access, infrastructure, digital divide). Also, many studies are cross-sectional or pilot, with limited attention to long-term sustainability or institutional policy implications.

The novelty of the present study is therefore multi-fold: first, it focuses specifically on North Sumatera institutions, contributing regionally specific data in a part of Indonesia underrepresented in ELT research on digital pedagogy. Second, it combines literature-based inquiry with empirical data (classroom observations, interviews, questionnaires) to triangulate perspectives from both lecturers and students. Third, it emphasizes the integration of socio-constructivism + digital literacy + multiliteracy as a combined conceptual frame for speaking instruction, rather than treating each in isolation. Fourth, the study addresses not only pedagogical strategies but also institutional, infrastructural, and sustainability issues which are vital for real gains in practice.

The contribution of this study is expected to be significant at several levels. Practically, it will offer a context-sensitive framework and set of recommendations for lecturers and curriculum designers in North Sumatera (and similar Indonesian or Southeast Asian settings) to redesign speaking instruction in more interactive, multimodal, learner-centered ways. It will provide evidence about which digital strategies are perceived as effective by both learners and educators, and clarify what supports (technical, institutional, professional development) are needed. Theoretically, the study will enrich ELT theory by demonstrating how socio-constructivism, digital literacy, and multiliteracy interact in speaking pedagogy in a non-Western, resource-constrained higher education context. It may also help refine operational definitions of digital literacy in speaking-oriented tasks, and contribute to multiliteracy scholarship in ELT. The study's empirical findings about teacher readiness, infrastructure constraints, and sustainability will help fill a gap in ELT research, particularly in Indonesia, where much of the existing literature focuses on tools or anecdotal successes, less on systematic frameworks grounded in theory and local institutional realities.

The implications of the present study are both pedagogical and policy-oriented. From a pedagogical standpoint, English lecturers in North Sumatera and beyond should consider redesigning their speaking tasks to include multimodal and digital elements: e.g., digital storytelling, peer collaboration via online platforms, context-based speaking (role-plays, simulated real-life tasks), interactive multimedia; these tasks facilitate not just language fluency but motivation, creativity, confidence, and learner autonomy. Teacher education programs and professional development must include more than technical training; they must build pedagogical digital literacy, capacity for socio-constructivist scaffolding, and multiliteracy awareness. At the policy level, institutional leadership (in universities, departments of education) must invest in reliable infrastructure (connectivity, hardware, access), develop policies incentive for digital innovation, support sustained integration rather than one-off projects, and design curricula that embed digital speaking competencies. The study also suggests that further research should consider longitudinal designs to investigate sustainability over

time, explore cross cultural comparisons, and examine emerging technologies (AI, VR, etc.) as potential enhancers of speaking instruction.

In summary, this study sets out to explore how integrating socio-constructivism and digital literacy in speaking instruction can address persistent problems in ELT in North Sumatera, offering both theoretical insights and practical guidance, filling gaps in current literature, and aiming toward more equitable, interactive, and effective speaking pedagogy geared for the digital age

B. Methods

This study uses a convergent mixed-methods design combining (1) a literature-based synthesis (systematic review of 2019–2024 literature) and (2) an empirical classroom study at three higher education institutions in North Sumatera: UMSU, UNIMED, and STKIP Al Maksum. Quantitative (questionnaires, pre/post speaking scores) and qualitative (semi-structured interviews, classroom observation notes, student artifacts such as digital stories/podcasts) data are collected concurrently, analyzed separately, and integrated during interpretation to generate meta-inferences about how socio-constructivist approaches and digital literacy interact to support speaking instruction.

Sampling Technique

This study employed a multi-stage purposive and stratified sampling technique to ensure the inclusion of representative participants from different institutional contexts and speaking proficiency levels across North Sumatera. The combination of purposive and stratified strategies was chosen to capture rich and contextually grounded data while maintaining analytical comparability among subgroups (Creswell & Plano Clark, 2018; Etikan & Bala, 2017).

a. Stage 1 Site Selection (Purposive Sampling)

In the first stage, three tertiary institutions were selected purposively: Universitas Muhammadiyah Sumatera Utara (UMSU), Universitas Negeri Medan (UNIMED), and STKIP Al Maksum. These institutions were deliberately chosen to represent diverse institutional profiles in North Sumatera one large private university, one state university, and one teacher training college. Each offers English Education programs with established speaking courses and varying degrees of digital integration. This purposive site selection enabled the study to capture inter-institutional differences in pedagogical practices, technological access, and learner backgrounds.

The inclusion criteria for the institutions were:

1. Availability of undergraduate English Education programs.
2. Active implementation of at least one speaking course at the time of data collection.
3. Institutional willingness to provide access for classroom observations and participant recruitment.

By focusing on these three diverse institutional types, the study aimed to increase the ecological validity of findings and allow for cross-contextual comparisons in the adoption of digital pedagogy and socio-constructivist approaches to speaking instruction.

b. Stage 2 Participant Stratification (Purposive + Stratified Sampling)

The second stage involved stratified selection of participants within each institution. Two major participant groups were included students and lecturers each representing distinct but complementary perspectives in the teaching–learning ecosystem.

Instrumentation and Instrument Development

To obtain comprehensive, triangulated data that captured both quantitative trends and qualitative depth, this study employed multiple research instruments developed and validated through a systematic, multi-phase process. The instruments were designed to measure learners' digital literacy, speaking self-efficacy, and perceptions of digital pedagogy, while also documenting lecturers' pedagogical practices, classroom interactions, and digital tool integration. Qualitative instruments were

developed to elicit rich experiential data and authentic evidence of teaching–learning dynamics consistent with the socio-constructivist and digital literacy frameworks underpinning the research.

Instruments Development Procedures

The process of instrument development followed five systematic stages consistent with best practices in educational measurement (DeVellis, 2017; Fraenkel, Wallen, & Hyun, 2019):

Instruments Development Procedures

The process of instrument development followed five systematic stages consistent with best practices in educational measurement. This speaking assessment rubric evaluates learners across five key criteria: Fluency and Coherence, Lexical Resource, Grammar, Pronunciation, and Interactional Competence. Each criterion is rated on a four-level scale ranging from 1 (Limited) to 4 (Advanced). At the limited level, speech is often fragmented with frequent pauses, restricted vocabulary, serious grammatical errors, unclear pronunciation, and minimal interaction. As proficiency develops, learners demonstrate moderate fluency, adequate vocabulary, partial grammatical control, and clearer pronunciation with some engagement. Proficient speakers show generally fluent delivery, appropriate lexical use, accurate grammar, natural pronunciation, and cooperative participation in conversations. At the advanced level, learners exhibit smooth and coherent speech, precise and varied vocabulary, high grammatical accuracy with complex structures, native-like pronunciation, and strong interactional competence that enables them to initiate, sustain, and manage communication effectively.

C. Result and Discussion

The findings of this study provide a comprehensive understanding of how socio-constructivist and digital literacy principles can be effectively integrated into English speaking instruction within higher education contexts in North Sumatera. Data collected from 112 English education students and 12 lecturers across three institutions Universitas Muhammadiyah Sumatera Utara (UMSU), Universitas Negeri Medan (UNIMED), and STKIP Al Maksum reveal that digital pedagogy implementation substantially improves learners' speaking performance, engagement, and motivation. Quantitative data from pre- and post-intervention surveys demonstrate measurable improvement in students' self-perceived fluency, confidence, and communicative competence, while qualitative data from interviews and classroom observations highlight increased learner collaboration, creativity, and critical reflection. These results validate the proposition that a socio-constructivist approach, when supported by digital literacy practices, creates a transformative learning environment that fosters authentic communication and 21st-century competencies.

Enhancement of Speaking Fluency and Confidence

Students who participated in digital storytelling and video-based speaking tasks reported significant improvement in fluency and confidence. The findings align with previous studies emphasizing the role of digital storytelling in promoting oral expression and reducing anxiety (Derakhshan et al., 2023; Hassan et al., 2022). Learners expressed that using mobile-assisted tools and multimedia platforms allowed them to rehearse, record, and evaluate their performance repeatedly an affordance rarely available in conventional classrooms. This iterative practice supports Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD), wherein learners progress through guided participation and self-reflection. Similarly, socio-constructivist interaction through peer feedback and collaborative online discussion provided authentic communicative contexts, confirming earlier evidence that interactional scaffolding facilitates fluency and pragmatic competence (Gass & Mackey, 2020; Nassaji, 2021). The results underscore that fluency in speaking emerges not only from linguistic practice but also from socio-digital engagement that encourages autonomy and self-efficacy.

Strengthening Learner Motivation and Engagement

The study also found that integrating digital literacy significantly enhances learner motivation. Students were more eager to engage with speaking tasks that involved creative digital expression, such

as producing short video narratives or collaborative podcasts. This corroborates findings by Kessler (2020) and Yunus et al. (2022), who reported that technology-mediated learning motivates learners by linking language use to real-world, multimodal communication. Moreover, students perceived digital tasks as personally meaningful and relevant to contemporary communication norms particularly through platforms resembling social media content creation. This “authentic digital context” (Godwin-Jones, 2021) bridges formal learning with learners’ informal digital practices, thus fostering sustained motivation. From the socio-constructivist lens, this motivational effect is rooted in community interaction and shared meaning-making, where learners perceive themselves as contributors rather than passive recipients of language input. Consequently, motivation becomes both intrinsic and socially mediated, affirming Dörnyei’s (2019) theory that learner engagement flourishes when autonomy, relatedness, and competence are simultaneously nurtured.

Development of Collaborative and Reflective Learning Practices

Classroom observation data revealed that socio-constructivist and digital literacy integration encouraged a shift toward collaborative learning. Students frequently worked in pairs or groups to plan, script, and produce digital content, such as short cultural narratives based on local North Sumatran wisdom. These collaborative activities facilitated peer negotiation of meaning, error correction, and reflective evaluation key indicators of socio-constructivist learning (Orey, 2020). Lecturers also noted that learners displayed greater initiative and responsibility in group work compared to traditional oral presentations. Similar patterns were observed in studies by Rahimi & Fathi (2021) and Lestari et al. (2023), where collaborative digital projects enhanced learner interdependence and social communication skills. Reflective learning was another crucial outcome: students reported that watching their recorded performances helped them recognize pronunciation errors and discourse organization issues, confirming findings from previous research that self-assessment through digital tools strengthens metacognitive awareness (Nguyen & Boers, 2021). Thus, socio-constructivism and digital literacy operate synergistically to cultivate learners who are both communicatively competent and critically reflective.

Challenges in Implementation

Despite the positive outcomes, several persistent challenges emerged. The most pressing issue was teacher readiness. Many lecturers admitted limited confidence in using digital tools effectively, echoing previous findings on technological pedagogical knowledge (TPACK) deficiencies among EFL educators (Fathi & Derakhshan, 2019; Rahimi et al., 2022). Some lecturers viewed digital pedagogy as an “add-on” rather than a core component of instruction. This perception often resulted in inconsistent or surface-level implementation. Infrastructural disparities also affected learning quality, as not all students had stable internet access or adequate devices an issue similarly reported in Indonesian and Southeast Asian contexts (Zaim et al., 2020; Wardiah et al., 2022). These findings indicate that digital pedagogy cannot be sustained solely at the classroom level; institutional support, resource provision, and teacher professional development are essential to ensure equitable access and consistent pedagogical quality.

Comparison with Previous Studies

The findings of this study corroborate and extend earlier research. For instance, Kessler (2020) and Godwin-Jones (2021) emphasized the transformative potential of digital literacy in reshaping communicative tasks, while this study adds a regional dimension by illustrating its application in North Sumatera’s higher education setting, where sociocultural diversity and infrastructural variation pose unique challenges. Similarly, Derakhshan et al. (2023) found that digital storytelling enhances speaking proficiency and motivation; the current study affirms these outcomes but contextualizes them through local wisdom-based storytelling, demonstrating how cultural authenticity amplifies learner engagement. Furthermore, while previous research (Rahimi & Fathi, 2021; Nguyen & Boers, 2021) focused mainly on cognitive and linguistic gains, the present findings emphasize the socio-emotional dimension how peer collaboration and digital creativity foster learner confidence, empathy, and

identity formation. Thus, the integration of socio-constructivism and digital literacy is not merely methodological but profoundly humanistic, shaping learners as socially connected communicators.

Theoretical and Pedagogical Implications

Theoretically, the findings substantiate the view that socio-constructivism and digital literacy form a mutually reinforcing framework for 21st-century English language teaching. Socio-constructivism situates learning within social interaction and meaning-making, while digital literacy provides the tools and contexts for such interaction to occur in authentic, multimodal environments. Pedagogically, this implies that speaking instruction should move beyond grammar and pronunciation drills to include digital project-based learning, peer collaboration, and reflection. Institutions should adopt a structured model for digital pedagogy integration such as the ADDIE framework ensuring alignment between technological tools, learning objectives, and assessment strategies (Branch, 2021). Moreover, teacher education programs must embed digital literacy competencies, emphasizing design thinking, multimodal task creation, and online interaction management. In regions like North Sumatera, localized strategies such as using local wisdom in digital narratives can further enhance contextual relevance and cultural pride, aligning global communicative skills with local identity.

Contribution and Implications for Future Research

This study contributes to the growing discourse on English language pedagogy by offering an empirically grounded framework for integrating socio-constructivist and digital literacy principles in speaking instruction. It provides contextual insights from North Sumatera, enriching the global conversation on equitable digital transformation in education. For practitioners, the findings highlight the necessity of designing tasks that balance linguistic goals with digital creativity and social collaboration. For policymakers, the results advocate for sustained investment in teacher digital competence and technological infrastructure. Future research should pursue longitudinal studies to track the long-term effects of such pedagogical integration and examine how emerging technologies such as AI-assisted feedback systems and virtual reality simulations can further advance speaking competence. Comparative research across different Indonesian provinces or ASEAN contexts would also reveal how cultural and infrastructural variables mediate digital pedagogy outcomes.

Discussion

This section presents a comprehensive analysis and interpretation of findings from the convergent mixed-methods study investigating the integration of socio-constructivism and digital literacy into English speaking instruction across three North Sumatera higher education institutions (UMSU, UNIMED, and STKIP Al Maksum). Quantitative and qualitative data were analyzed separately and integrated to generate a deeper interpretation of how digital literacy practices and socio-constructivist pedagogy enhance speaking fluency, motivation, and learner engagement; how institutional factors and teacher readiness shape digital pedagogy; and what implications emerge for theory, classroom practices, and higher education policy.

Digital Pedagogy as a Catalyst for Speaking Development

Quantitative data from pre- and post-questionnaires demonstrate a substantial increase in students' self-perceived speaking fluency and confidence after participating in digital storytelling, multimodal video projects, and online collaboration tasks. Students reported greater ease in expressing ideas, improved organization of speech, and reduced anxiety when speaking in English. The digital platforms used (Google Classroom, Canva, CapCut, YouTube, WhatsApp, Padlet, Zoom) allowed them to rehearse repeatedly before final submission—flexibility that traditional classroom activities rarely afford.

This iterative production process resonates with Vygotsky's notion of the Zone of Proximal Development (ZPD), where scaffolding—whether provided by peers or digital resources—enables learners to produce output beyond their current proficiency level. Through recording, revising, and

receiving peer feedback, learners engaged in cycles of practice that strengthened accuracy and fluency, supporting the argument that digital environments expand the learning zone by enabling self-paced rehearsal and immediate feedback.

Motivation, Engagement, and Ownership of Learning

A prominent theme emerging across institutions is increased learner motivation and engagement when speaking tasks involve multimodal and creative digital expression. Students perceived digital tasks as meaningful, enjoyable, and aligned with contemporary communication norms. This aligns with Dörnyei's motivational theory that autonomy, competence, and relatedness drive sustained engagement.

In contrast to traditional oral presentations—which often evoke fear and passive participation—digital storytelling provided students autonomy to plan, script, edit, and publish their speaking content. Collaboration through group-based digital projects further increased accountability and social motivation.

Observation field notes reveal that students willingly stayed beyond class hours to finalize their digital narratives, which suggests a shift from extrinsic (“assignments to score”) to intrinsic motivation (“projects that matter”). The sense of authorship and ownership of learning is particularly evident when students incorporated local wisdom—stories about North Sumatran culture, folklore, and local identity—into digital videos. This finding aligns with Dewi et al. (2023), who demonstrate that multiliteracy pedagogy increases learner engagement when tasks connect cognitive processes with cultural experiences.

Collaborative and Reflective Learning: Evidence of Socio-Constructivism in Practice

Field observations and student reflection logs indicate a clear shift toward collaborative learning dynamics. Learners negotiated meaning, co-developed scripts, shared feedback, and divided production roles (editing, voice-over, narration, etc.). This collaboration aligns with socio-constructivist assumptions that learning is a socially mediated process (Orey, 2020).

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Students demonstrated reflective awareness of their learning progress, discussing how peer interaction and digital feedback loops improved their pronunciation, confidence, and message clarity. Reflection logs show that many learners valued the iterative process of peer critique and revision, viewing mistakes as opportunities for growth, which is a hallmark of socio-constructivist learning environments.

Teacher Readiness and Digital Pedagogical Competence

The success of digital storytelling integration also depended heavily on teacher readiness and digital pedagogical competence. Data from lecturer interviews revealed varying levels of confidence in using digital platforms and integrating socio-constructivist methods. Teachers from UMSU and STKIP Al Maksum reported moderate readiness, often relying on self-learning and peer mentoring, whereas lecturers at UNIMED exhibited higher levels of digital literacy due to prior institutional training.

This uneven preparedness highlights the importance of continuous professional development. Teachers who received prior training were better able to scaffold student learning digitally, design collaborative tasks, and evaluate multimodal outputs. Conversely, those with limited exposure to digital tools tended to revert to traditional speaking activities, reducing the potential benefits of digital storytelling.

Institutional Support and Policy Implications

Institutional culture and infrastructure emerged as significant factors shaping digital literacy integration. Universities with stronger ICT policies, stable internet access, and dedicated e-learning units such as UNIMED demonstrated smoother implementation and higher student satisfaction. In contrast, limited Wi-Fi connectivity and lack of technical support in smaller institutions constrained consistent digital engagement.

The findings suggest that institutional readiness must accompany pedagogical innovation. For sustainable impact, higher education institutions should embed digital literacy in curriculum design, allocate budget for teacher upskilling, and provide accessible platforms for creative digital projects. Policymakers at the university and provincial levels can support this effort by linking digital competency with accreditation and quality assurance standards.

D. Conclusion

In conclusion, this study demonstrates that integrating socio-constructivism and digital literacy into speaking instruction offers a transformative pedagogical framework that significantly enhances learners' fluency, confidence, motivation, and collaborative engagement in English classrooms across North Sumatera. The implementation of digital storytelling, interactive multimedia, and culturally grounded communicative tasks not only fosters linguistic competence but also nurtures critical

reflection, creativity, and learner autonomy, which are hallmarks of 21st-century education. Although challenges related to teacher readiness and infrastructural disparity remain, the findings affirm that sustainable and context-sensitive digital pedagogy can bridge the gap between traditional instruction and modern communicative needs. This research contributes both theoretically and practically by proposing an adaptable model of socio-digital learning that aligns global pedagogical innovation with local educational realities, offering valuable insights for educators, curriculum designers, and policymakers committed to advancing equitable and future-ready English language education.

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The author was solely responsible for the conception, design, data collection, analysis, interpretation, and writing of this research. All components of the study, including the development of instruments, integration of digital pedagogy, and preparation of the manuscript, were completed independently in accordance with established authorship guidelines.

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