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ICT Integration in English Teachers' Lesson Planning in Speaking Skills

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Abstract

This systematic literature review examines how English teachers integrate Information and Communication Technology (ICT) into lesson planning for speaking skills. Following PRISMA 2020 guidelines, 48 peer-reviewed studies from 2015 to 2025 were selected from Scopus and ERIC and thematically analyzed. Findings show diverse ICT tools such as speech recognition, mobile apps like WhatsApp and Flipgrid, and multimedia projects enhance authentic communication, learner autonomy, and engagement. However, challenges like limited infrastructure, inadequate teacher training, and resistance to change remain significant. Successful ICT integration depends on aligning technology with pedagogy and fostering a student-centred approach. The study highlights the need for holistic support including investment, professional development, and balanced curricula to maximize ICT's impact on speaking instruction. These insights offer valuable guidance for educators, policymakers, and researchers aiming to advance technology-enhanced language learning

Kata Kunci: *ICT Integration, English Language Teaching, Speaking Skills, Lesson Planning, Digital Tools, Application*

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INTRODUCTION

The integration of Information and Communication Technology (ICT) in English language teaching has become an important aspect of modern education. ICT provides various interactive tools that can facilitate language learning, especially in speaking skills (Effendy & Taufik, 2023). Speaking is a fundamental skill for communication, yet it is often neglected in English as a Foreign Language (EFL) classrooms where teachers tend to focus more on grammar and reading comprehension rather than on speaking practice (Effendy & Taufik, 2023). As a result, students lack the necessary exposure and opportunity to develop their spoken communication skills. Research has shown that ICT can enhance speaking instruction by providing students with authentic language experiences through multimedia resources, video-based projects, and digital communication platforms (Suryani & Argawati, 2023). These technologies allow students to practice speaking engagingly and interactively, which can lead to improved proficiency and confidence.

Regardless of its potential advantages, the integration of ICT in lesson planning for the teaching of speaking is still a challenge for many teachers. One of the main issues is the lack of knowledge and skills among educators to effectively utilize ICT tools in their lesson plans (König et al., 2024). Many teachers are not adequately trained to design ICT-based activities that align with pedagogical and linguistic objectives, which results in ineffective implementation (König et al., 2024). In addition, the availability of technological resources and institutional support also affect the level to which ICT can be integrated into English language teaching. Teachers must navigate various barriers, including limited infrastructure, resistance to change, and concerns about the effectiveness of digital tools in improving speaking skills

(Effendy & Taufik, 2023). With these challenges, it is important to investigate how teachers integrate ICT into their lesson planning for speaking and explore strategies to overcome these barriers.

Lesson planning plays an important role in enabling the successful integration of ICT in speaking instruction. A well-structured lesson plan provides a roadmap for teachers to incorporate technology effectively and align it with learning objectives (König et al., 2024). According to the TPACK framework, effective ICT integration requires a balance between technological, pedagogical, and content knowledge (König et al., 2024). Studies have demonstrated that project-based learning (PBL) combined with ICT can significantly enhance students' speaking abilities by encouraging collaboration, creativity, and real-world communication practice (Suryani & Argawati, 2023). Furthermore, this research is needed to examine how teachers structure their lesson plans to integrate ICT and what strategies offer the most effective results. Therefore, this research aims to systematically review the available literature on ICT integration in lesson planning for speaking skills to determine best practices, challenges, and potential solutions. The research seeks to address the following questions: (1) How do English teachers integrate ICT into their lesson planning in speaking skills? (2) What are the challenges and solutions in implementing ICT for speaking instruction in classrooms?

2. Methodology

This systematic literature review follows the guidance of the Preferred Reporting Items for Systematic Reviews and Meta-AnalysisMeta-Analys es (PRISMA) 2020 statement. The PRISMA framework is broadly used for systematic reviews in a variety of fields, including education, as it provides a transparent and replaceable process for identifying, screening and analyzing related studies. The aims of this review are to explore how English language teachers integrate Information and Communication Technology (ICT) into their lesson planning for speaking skills, as well as to identify challenges and solutions in integrating ICT for speaking instruction.

2.1. Eligibility Criteria

The inclusion and exclusion criteria for this review are outlined in Table 1. The inclusion criteria were peer-reviewed categorized empirical research articles published in English between 2013 and 2023, with a focus on the integration of ICT in English teachers' lesson planning for speaking skills. Articles that did not fulfill these criteria, such as articles that had not been peer-reviewed, technical reports, or studies that focused on other language skills (e.g., reading, writing), were excluded.

Table 1: Eligibility Criteria

Criteria	Inclusion	Exclusion
Date	Articles published between 2015 and 2025	Article published before 2015
Language	English	Non-English

Sample	Teachers, students or educational documents that use ICT for speaking skills related to English language teaching.	Studies with participants outside English language teaching.
Publication	Peer-reviewed empirical research articles	Non-peer-reviewed articles, technical reports, guidelines, or book chapters
Focus	ICT integration in English teachers' lesson planning for speaking skills	Studies focused on other language skills or non-ICT-related topics

2.2. Information Sources and Search Strategy

A search for relevant articles was conducted in two major databases: Scopus and ERIC. These two databases were chosen due to the broad research coverage of peer-reviewed studies in education, language teaching, and technology integration.

The search was carried out using the following keywords:

- Scopus:
  - TITLE-ABS ((((ict OR technology OR digital OR computer) AND (lesson OR "lesson plan" OR activity OR activities) AND (speaking) AND (esl OR efl OR english)))) AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "ARTS"))
  - Initial results: 208 documents
- ERIC:
  - Keyword: ("ICT integration" OR "ICT" OR technology OR "digital tools" OR computer OR multimedia OR "educational technology") AND ("lesson" OR "lesson plan" OR "teaching plan" OR activity OR activities OR "instructional activity") AND (speaking OR "oral skills" OR "oral communication") AND (ESL OR EFL OR English OR "English language teaching") AND (teacher OR teachers OR educator OR instructor)
  - Initial search results: 143 documents

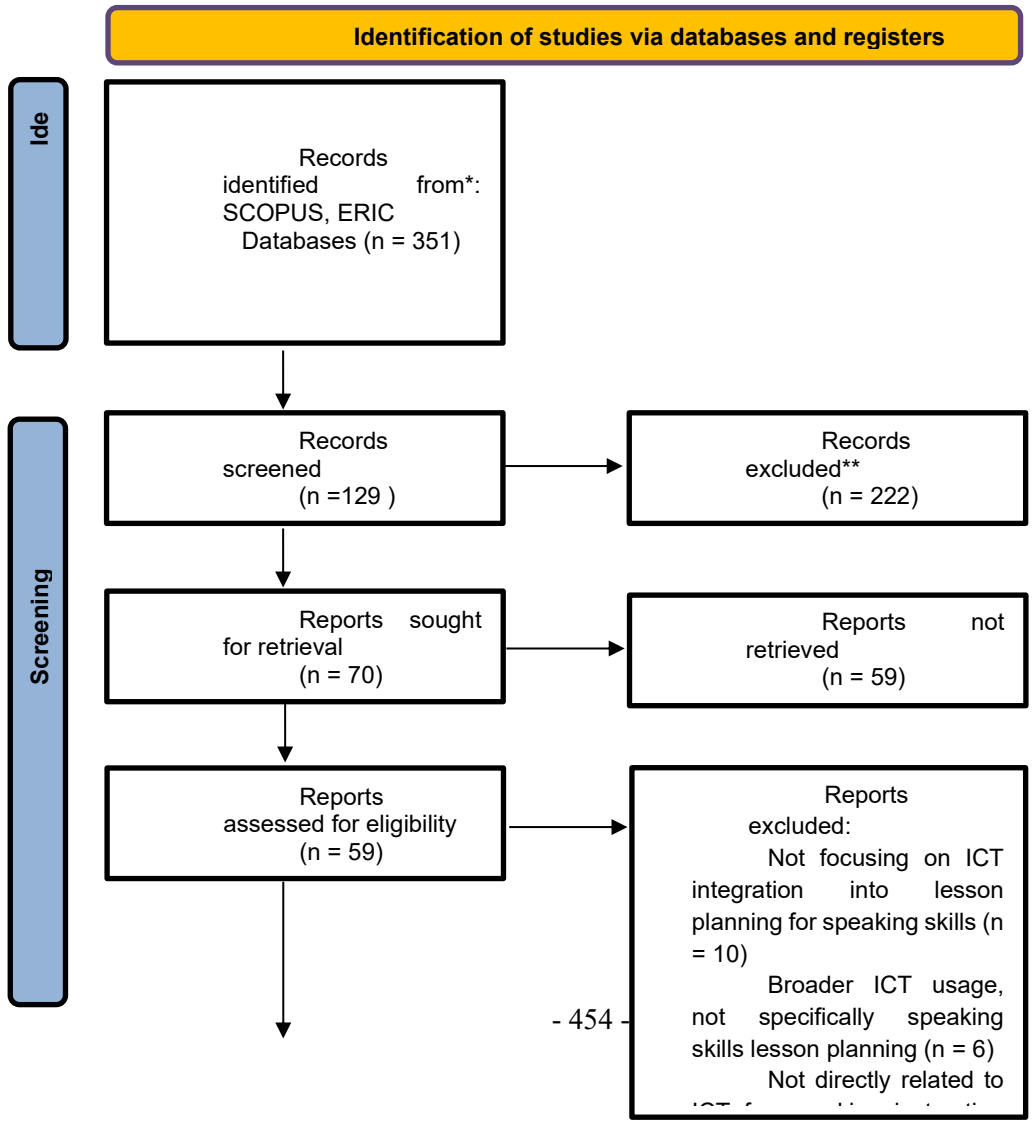
The search was limited to articles published in English and within the 2015-2025 timeframe.

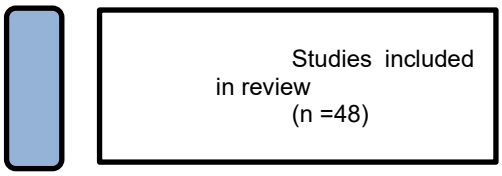
Table 2. Syntax search database used

Database	Syntax	Results
Scopus	TITLE-ABS ((((ict OR technology OR digital OR computer) AND (lesson OR "lesson plan" OR activity OR activities) AND (speaking) AND (esl OR efl OR	208

	english)))) AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "ARTS"))	
ERIC	("ICT integration" OR "ICT" OR technology OR "digital tools" OR computer OR multimedia OR "educational technology") AND ("lesson" OR "lesson plan" OR "teaching plan" OR activity OR activities OR "instructional activity") AND (speaking OR "oral skills" OR "oral communication") AND (ESL OR EFL OR English OR "English language teaching") AND (teacher OR teachers OR educator OR instructor)	143
Total papers		351

Figure 1: Flowchart of the Screening and Selection Procedure





2.3. Study Selection

The study selection process for this systematic literature review strictly followed the PRISMA 2020 framework to ensure a transparent, replicable, and rigorous approach to identifying, screening, and including relevant literature. As shown in Figure 1, the initial identification phase yielded a total of 351 records from two major academic databases: Scopus contributed 208 articles and ERIC added 143 articles. These databases were strategically chosen for their extensive coverage of peer-reviewed research in education, language teaching, and ICT integration, focusing on studies published between 2015 and 2025 that addressed the integration of ICT in English teachers' lesson planning specifically targeting speaking skills. After compiling the initial dataset, the research team imported all retrieved records into Mendeley, a reference management software, to facilitate efficient organization, duplicate removal, and systematic tracking of sources throughout the review process.

During the screening phase, 222 records were excluded based on an initial review of titles and abstracts. These exclusions were primarily due to the studies not meeting the predefined inclusion criteria, such as lacking a direct focus on ICT integration, addressing language skills other than speaking, or being non-peer-reviewed articles. This careful filtering left 129 articles eligible for full-text screening. However, in the retrieval phase, only 70 of these full-text articles were successfully obtained for in-depth evaluation, while 59 could not be retrieved due to various reasons including limited access, incomplete records, or unavailability in English or the required formats.

The eligibility assessment of the 70 retrieved full-text articles involved a meticulous evaluation against inclusion criteria centered on relevance to ICT use in lesson planning for speaking, empirical research design, peer-reviewed status, and publication date. As a result, 22 articles were excluded at this stage for reasons such as focusing on broader ICT applications without specific emphasis on speaking lesson planning (n=10), discussing ICT use in contexts unrelated to speaking instruction (n=6), or lacking sufficient direct relevance to the research questions concerning ICT integration in speaking skills (n=5). The remaining 48 studies fully met all inclusion requirements and were consequently incorporated into the final review.

This comprehensive and systematic selection process, supported by the organizational capabilities of Mendeley, ensured that the included studies formed a high-quality and focused evidence base. These selected articles provide valuable insights into how English teachers integrate ICT into their lesson planning for speaking skills, the challenges encountered, and the strategies developed to overcome them, thus establishing a solid foundation for synthesizing best practices and guiding future research in this field.

2.4. Data Extraction and Analysis

Data from the screened articles were systematically extracted using a standardized form that captured three main categories of information: general details such as author(s),

publication year, article title, and country of study; research design elements including methodology, sample size, and research questions; and key findings specifically related to the integration of ICT in English teachers' lesson planning for speaking skills, highlighting both challenges and solutions. Following extraction, the collected data underwent a thorough thematic analysis aimed at identifying common patterns, recurring challenges, and effective strategies related to ICT use in speaking instruction. This analysis involved comparing each study to assess its alignment with the core focus on speaking skills, carefully evaluating how teachers integrate various ICT tools into their lesson plans, the diversity of tools employed, and the specific barriers encountered during implementation. By examining similarities and differences across studies, the analysis illuminated which technologies and approaches consistently enhanced lesson planning and speaking outcomes, while also uncovering contextual factors influencing success or difficulty. This comparative, thematic approach provided a nuanced synthesis that respects both shared trends and unique contributions within the literature, ultimately offering a comprehensive understanding of best practices and persistent challenges in embedding ICT into speaking-focused lesson planning.

2.5. Justification for Methodology

The systematic literature review methodology was chosen as the most appropriate approach to collect and synthesize existing research on how English language teachers integrate ICT into speaking skills lesson planning. This method goes beyond simply collecting articles; it emphasizes a transparent, systematic and replicable process that ensures the selection and analysis of research is rigorous and unbiased. By following the PRISMA 2020 guidelines, we maintained clarity and consistency at every stage of the review-from the initial identification of relevant research to the final decision of inclusion-thereby increasing the reliability and validity of our findings.

Limiting our scope to peer-reviewed articles sourced from reputable databases such as Scopus and ERIC ensures that the evidence we examine has been critically evaluated by experts, lending credibility and relevance to the research base. To efficiently manage the large volume of retrieved studies and maintain organization, we use Mendeley reference management software, which also helps prevent duplication and facilitates seamless data tracking. The use of standardized data extraction forms combined with detailed thematic analysis allowed us to dig deeper into each study, examining not only the presence of ICT tools in lesson plans, but also how these tools were implemented, pedagogical outcomes and challenges faced by teachers. This analytical rigor transformed the review from a simple collection of articles into a coherent narrative that highlights existing trends, effective practices and gaps that remain in the field.

Ultimately, this method provides a solid and trustworthy basis for generating meaningful insights that can guide educators, researchers, and policymakers. It highlights best practices for ICT integration and offers practical perspectives for overcoming common barriers in speaking instruction, thus contributing to the advancement of technology-enhanced language education in real classroom settings.

FINDINGS

The findings from this systematic literature review offer a comprehensive and nuanced understanding of how ICT integration influences English teachers' lesson planning, particularly

in enhancing students' speaking skills. Synthesizing these insights reveals several interconnected themes that together paint a detailed picture of current practices, benefits, and challenges.

Foremost, technology-based speaking instruction emerges as a powerful transformative force. A diverse array of ICT tools—from automatic speech recognition systems (P1), dialogic soundboards (P2), multimedia simulations (P4), mobile learning applications (P8), to gamified platforms on Moodle (P18)—has broadened the possibilities for meaningful speaking practice. These tools move beyond being mere technological add-ons; they function as catalysts reshaping speaking instruction into interactive, authentic, and student-centered experiences. For instance, students engaged with TED Talks (P3, P12, P28) benefit from modeling real-world speakers' presentations and rhetorical strategies, facilitating a shift from passive listening to purposeful, context-rich active speaking. Such exposure inspires learners to craft speeches infused with humor, statistics, and storytelling skills rarely developed through traditional textbooks alone.

Moreover, mobile applications such as WhatsApp and Flipgrid (P20, P21, P23, P31) provide learners with increased flexibility and emotional safety by allowing them to record, review, and resubmit speaking assignments at their own pace, thereby reducing anxiety commonly linked to public speaking. Collaborative video projects (P11, P27) and podcasting (P32) further empower students to take ownership of their language development, fostering creativity and learner autonomy. Across these diverse digital interventions, a common thread is the creation of authentic communication opportunities and enhanced student agency—both critical to cultivating genuine communicative competence in a second language.

Despite the promising potential, significant systemic challenges remain evident. Studies (P6, P7, P10, P14, P34, P36, P42) reveal persistent barriers including unstable internet connectivity, limited access to devices, insufficient teacher training, and resistance to change. These issues transcend mere logistical inconveniences, fundamentally affecting equitable access to quality education. For example, teachers attempting to deliver innovative lessons via platforms like Facebook Live or YouTube (P34) often face session disruptions due to connectivity problems, particularly in rural settings. Additionally, flipped classroom models (P7) may impose increased cognitive load on students if not adequately supported by structured preparation and scaffolding. Without robust infrastructure and targeted professional development, even the most promising ICT strategies risk falling short or generating unintended challenges.

Teacher mindset also plays a crucial role. As highlighted in studies (P14, P42), successful ICT integration closely relates to educators' perceptions of language learning and their openness to adopting new methods. Teachers who embrace technology as an enabling partner rather than a daunting obstacle are better positioned to design meaningful, student-centred lessons. Thus, professional development should extend beyond technical skills, cultivating a growth mindset and pedagogical flexibility to adapt effectively to evolving technological landscapes.

The third major theme emphasizes the importance of pedagogical-content integration through ICT. Technology alone is insufficient to guarantee success; its alignment with pedagogical strategies and curricular goals is essential. Research such as (P9, P46) illustrates how structured planning like concept mapping before videoconferencing (P9) or student-led

inquiry approaches (P46)—maximizes ICT's educational impact. When technology is thoughtfully integrated with curriculum objectives and teaching methods, it fosters deep engagement, critical thinking, and meaningful communication, avoiding the pitfalls of distraction or gimmickry.

Together, these findings suggest that effective ICT integration functions as a dynamic, interconnected ecosystem requiring reliable infrastructure, supportive institutional policies, empowered and well-trained teachers, deliberate lesson planning, and, critically, a student-centered approach. If any element—be it resources, training, pedagogical coherence, or positive attitudes—is missing, the full potential of ICT remains unrealized.

Practically, these insights call for strategic investment by educational stakeholders. Priorities should extend beyond device procurement to include sustainable support systems such as teacher coaching programs, equitable access to digital tools, and fostering a culture of innovation centred on students' needs and realities. For teachers, these findings offer encouragement and guidance: impactful ICT integration does not always require sophisticated or costly technology. Everyday platforms like WhatsApp (P23, P31, P38) and user-friendly tools such as Canva (P33) can significantly enhance speaking instruction when applied creatively and pedagogically. Teachers are encouraged to experiment, adapt, and reflect continuously, recognizing that small but thoughtful technological innovations can dramatically improve students' speaking skills and confidence.

Lastly, the critical role of student voice and choice must not be overlooked. When learners have autonomy over what they speak about, how they express themselves, and the tools they use, their engagement deepens, promoting more sustainable language proficiency gains. This ownership transforms ICT-supported speaking lessons into empowering, motivating, and effective learning experiences.

DISCUSSION

The variety of ICT methods identified in this review, particularly the prominence of technology-based speaking instruction, underscores the evolving landscape of English language teaching. Our findings reveal that speaking skills have attracted a wide variety of technological interventions-from automatic speech recognition systems (P1) to mobile apps such as WhatsApp and Flipgrid (P20, P23), as well as collaborative multimedia projects (P11, P27). This diversity raises the question: why does teaching speaking require such a wide and rich toolkit compared to other language skills?

One interpretation is that speaking, unlike receptive skills such as reading or listening, inherently demands real-time interaction, immediate feedback and personal expression, which are often difficult to simulate in traditional classroom settings. As our review shows, ICT tools provide authentic, engaging and student-centred platforms that help bridge this gap. For example, the use of TED Talks (P3, P12, P28) exemplifies how students can model natural speech patterns and rhetorical strategies, encouraging active engagement beyond rote memorization or passive listening. This contrasts with previous decades where speaking was often sidelined or restricted by limited class time and fewer interactive resources. Compared to technological applications from the 20th century, which focused more on grammar exercises and vocabulary acquisition through static media, today's digital tools actively promote spontaneous communication and learner autonomy.

This emphasis on speaking may also reflect a growing consensus on its crucial role in communicative competence and real-world language use. Indeed, speaking is often seen as the skill most needed for effective communication in global and digital contexts, which may explain why it has received technological attention. However, this raises an important question: does the abundance of ICT tools targeting speaking skills risk sidelining other equally important skills such as reading, writing or listening? From our perspective as researchers, this does not have to be a zero-sum game. Rather, the current focus on speaking technology can be seen as an attempt to address a historical imbalance, providing much-needed innovation where traditional methods have failed. Moreover, many of these tools - such as podcasts, videos, and digital storytelling - also inherently involve multiple skills, integrating speaking with listening, vocabulary, and critical thinking.

Our findings suggest that while speaking requires special attention, the future of ICT in language education should ideally involve a more holistic and multimodal approach that balances all skills. As technology develops, including advances in AI and adaptive learning, there is great potential for integrative platforms that simultaneously address the needs for speaking, listening, reading and writing. The challenge for educators and developers is to utilize these technologies in ways that strengthen the interconnectedness of language skills, rather than fragmenting them.

In summary, the sheer number and diversity of ICT methods targeting the development of speaking skills reflects its complex, interactive and increasingly important nature in 21st century communication. Our review highlights significant advances from previous teaching paradigms but also calls for the thoughtful integration of technology across all language skills to support truly comprehensive language learning. As researchers, we see this as an exciting opportunity to redefine language teaching - utilizing the best technology to meet the needs of diverse learners without compromising a balanced skill richness.

The findings of this review carry important implications for educators, policymakers, and researchers in the field of English language teaching. For educators, the diverse range of ICT tools highlighted underscores the need for flexibility and creativity in lesson planning, encouraging them to select technologies that not only enhance speaking skills but also integrate multiple language domains. Policymakers should recognize that investing in reliable infrastructure and ongoing professional development is essential to maximize the potential of ICT in language education, especially in under-resourced settings. Additionally, the emphasis on speaking skills calls for balanced curricula that support holistic language development, ensuring that other critical skills are not overshadowed. For researchers, the evolving landscape of ICT integration invites further exploration into multimodal and adaptive technologies that address the interconnectedness of language skills. Ultimately, this review suggests that meaningful ICT integration requires a systemic and student-centered approach, fostering environments where technology acts as a powerful facilitator of authentic communication and learner autonomy.

CONCLUSION

From our comprehensive review, we've uncovered that ICT integration in English speaking instruction is both rich in variety and full of potential but it's not without its challenges. As researchers reflecting on these findings, we believe that the diversity of effective technologies offers teachers powerful tools to transform their lesson planning and make

speaking practice more engaging and learner centred. However, success depends not just on having the right tools, but also on supportive infrastructure, ongoing teacher development, and positive attitudes toward technology.

For teachers, our interpretation of the data suggests that embracing a flexible, creative mindset toward ICT is crucial. Rather than viewing technology as a barrier or a mere add-on, educators should see it as a partner that can amplify student voice, autonomy, and confidence in speaking. Teachers can start small using accessible platforms like WhatsApp or Canva and gradually build their digital literacy and pedagogical strategies in parallel. Importantly, they should strive for integration that supports multiple language skills simultaneously, recognizing that speaking thrives best when connected with listening, reading, and writing activities.

Based on these premises and grounded in the evidence we've synthesized, our key recommendation is clear: educational stakeholders must adopt a holistic approach that balances investment in technology, infrastructure, and professional development with a strong focus on student-centered pedagogy. For us as researchers, the next step is to continue exploring how emerging technologies can bridge gaps and offer truly inclusive, multimodal learning experiences. Ultimately, the path forward lies in collaboration—between teachers, students, policymakers, and researchers—to create learning environments where ICT is not just present, but meaningfully empowers speaking development and broader language competence.

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