DIGITAL TOOLS AND AI IN THE SPEAKING CLASSROOM

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Abstract: The rapid advancement of digital technologies and artificial intelligence has reshaped pedagogical practices in language education, particularly in the area of speaking instruction. Traditional speaking classrooms often face challenges related to limited interaction time, uneven participation, performance anxiety, and difficulties in providing individualized feedback. Digital tools, such as speech-recording platforms, multimodal communication environments, and virtual discussion spaces, expand learners' opportunities to practice oral skills beyond the classroom and enable teachers to better scaffold instruction. AI-driven tools further enhance this landscape by offering automated speech recognition, personalized feedback, adaptive conversation practice, data-informed assessment, and simulated communicative contexts that support learner autonomy and fluency development. Despite these advantages, challenges persist, including digital literacy gaps, unequal technology access, privacy concerns, potential overreliance on automated feedback, and the need for thoughtful pedagogical integration. This article argues that effective use of digital tools and AI requires a balanced, ethical, and pedagogically grounded approach that preserves human interaction while leveraging technological innovation. When implemented strategically, AI-supported digital environments can transform the speaking classroom into a more inclusive, engaging, and learner-centered space that aligns with real-world communication demands.

Keywords: digital tools; artificial intelligence; speaking instruction; language education; automated feedback; speech recognition; technology-enhanced learning

Digital technologies and artificial intelligence have transformed nearly every domain of modern life, and language education—particularly the speaking classroom—stands among the areas most influenced by these developments. Speaking instruction has traditionally posed complex challenges for educators: limited class time, unequal student participation, differing proficiency levels, performance anxiety, and the difficulty of providing consistent individualized feedback. Additionally, speaking is ephemeral; once something is spoken, it disappears unless recorded or transcribed, making assessment, self-reflection, and longitudinal tracking difficult [5, 226].

Digital tools and AI innovations directly address many of these issues by offering new modes of practice, analysis, support, simulation, and interaction that expand what is pedagogically possible. In the speaking classroom, digital platforms can provide safe rehearsal spaces, instant feedback, multimodal input, and flexible learning pathways. Artificial intelligence further enhances this ecosystem by enabling automated speech recognition, natural language processing, personalized feedback systems, and conversation agents capable of responding dynamically to learners.

The integration of digital tools and AI creates a paradigm shift from teacher-centered to learner-centered instruction, in which students are empowered to practice speaking more frequently and independently, engage in simulated communicative situations, and receive individualized guidance while teachers take on more strategic roles as facilitators, designers, and evaluators. To understand this transformation thoroughly, it is important to consider the pedagogical functions of

digital tools, the nature of AI-driven feedback and assessment, the challenges teachers face in adapting to new technologies, and the long-term implications for speaking proficiency development [3, 128].

Digital speaking tools—ranging from simple voice recorders to interactive communication platforms—enable learners to extend their speaking practice beyond the classroom walls. In traditional settings, speaking opportunities are constrained by time, classroom size, and the need to share attention among learners. Digital environments mitigate these constraints by allowing learners to submit spoken assignments asynchronously, meaning students can record at their own pace and repeat as many times as needed until they feel satisfied with their performance. This relieves performance anxiety, encourages risk-taking, and gives introverted or low-confidence learners more equitable opportunities to participate.

Teachers benefit as well, gaining access to stored samples of student speech that can be replayed, analyzed, and compared over time. These samples also enable more objective assessment, since teachers can evaluate students' speech without the pressure of immediate classroom dynamics. Digital platforms also support multimodal instruction, combining audio, video, graphics, and textual support to enhance comprehension and engagement. For example, learners can watch models of spoken interaction, analyze pronunciation visually through waveform representations, or interact with prompts that require verbal responses. The blend of input and output opportunities helps learners internalize linguistic patterns and speaking strategies.

Many teachers also use digital discussion boards and voice-thread tools that facilitate asynchronous oral discussions, allowing students to respond orally to teacher prompts or peer contributions. This fosters communicative practice without the limitations of time zones, scheduling, or classroom management. Moreover, digital collaborative tools support group presentations and projects, enabling learners to rehearse, record, edit, and produce spoken content using multimedia. All of these tools broaden the communicative landscape and prepare learners for real-world speaking contexts in which digital communication—such as video conferencing and social media interactions—plays a major role [2, 15].

Artificial intelligence adds an even deeper layer of innovation by providing automated, scalable, individualized feedback on learners' spoken output. Traditional speaking classes often struggle with the difficulty of giving detailed, personalized feedback on pronunciation, fluency, grammar, and coherence. Teachers may have many students and limited time, and assessing speech is both cognitively demanding and subjective when done in real time. AI-powered systems alleviate these challenges by analyzing student speech using speech recognition and machine learning models. These systems can transcribe spoken language, measure speaking rate, identify hesitation markers, evaluate pronunciation accuracy relative to target phonemes, and highlight grammatical patterns.

Some advanced tools can even generate suggestions for rephrasing, point out lost coherence, or prompt the learner to elaborate or clarify. This creates an environment in which feedback is immediate, consistent, and available whenever the learner chooses to practice. Students are no longer dependent solely on teacher availability; instead, they have continuous access to a virtual assistant capable of guiding their improvement. The automation of feedback also frees teachers from spending most of their time correcting surface-level errors and allows them instead to focus on higher-level pedagogical tasks such as designing richer communicative activities,

coaching learners on discourse strategies, or providing targeted human feedback where nuance and empathy matter most [4, 30].

Another major contribution of AI is its ability to create adaptive practice environments. AI-driven speaking tasks can adjust difficulty in real time, offering more complex prompts when learners demonstrate readiness or simplifying interactions when learners struggle. AI conversation agents simulate naturalistic dialogues, allowing learners to practice speaking in a low-stakes environment without fear of judgment. These virtual partners can represent various interlocutors—hotel clerks, job interviewers, academic advisors, or casual acquaintances—exposing learners to authentic communicative scenarios that may be impossible to replicate consistently in the classroom. By responding in real time, asking follow-up questions, and adjusting to learner proficiency, AI agents mimic human conversational patterns and offer exposure to a wide range of speaking contexts. When combined with digital storytelling tools, AI can also help learners co-create spoken narratives, act out role-plays, or engage in collaborative speaking tasks with virtual peers [6, 308].

In addition, AI can support pronunciation training through visual feedback such as articulatory animations or acoustic comparisons with target models. This multimodal feedback helps learners understand not only what is wrong but how to correct it. For many students, the privacy and self-paced nature of AI tools encourage more frequent practice, resulting in improved fluency and confidence. Another important area where AI contributes is assessment. AI-supported speaking assessment tools can administer standardized tasks, score responses consistently, and generate detailed rubrics aligned with proficiency frameworks. Automated scoring reduces teacher workload and ensures fairness across learners.

While AI-based scoring should not completely replace human evaluation, combining both approaches often results in more accurate and holistic assessments. Teachers can use AI-generated scores as diagnostic tools, guiding decisions about lesson planning and interventions. AI analytics also provide insights into long-term learner development, identifying patterns, strengths, and persistent challenges. Over time, teachers can use this data to design individual learning trajectories and more responsive curricula.

Despite the advantages, integrating digital tools and AI into the speaking classroom presents challenges that require thoughtful pedagogical, ethical, and institutional consideration. One major issue is digital literacy: not all teachers or students possess the necessary skills to navigate advanced technological tools effectively. Teachers may feel overwhelmed by the need to learn new systems, troubleshoot technical issues, and adapt lesson plans. Professional development is essential to build teacher confidence and competence, but training requires time, resources, and institutional support. Students, especially those from low-resource backgrounds, may lack reliable access to devices, stable internet connections, or quiet environments for speaking practice. This creates a digital divide that can exacerbate educational inequities. To address this, schools must ensure equitable access and design flexible assignments that consider students' differing circumstances [1, 85].

Another concern is data privacy and ethical use of AI. Many digital and AI systems collect, store, and analyze student speech data, raising questions about consent, transparency, and security. Teachers need to understand how data is collected, who has access, and how long it is retained. Clear policies and student education are essential to prevent misuse. Another challenge lies in over-reliance on automation. AI feedback, while powerful, is not infallible; speech recognition errors may misinterpret accented speech or nuanced phrasing. Automated scoring systems may prioritize

measurable features like fluency or pronunciation while undervaluing creativity, pragmatics, or cultural appropriateness.

Teachers must remain critical users of AI tools, verifying feedback and ensuring students understand that AI guidance is complementary rather than authoritative. Pedagogically, AI-based practice must be integrated in meaningful ways rather than used as an add-on. The danger is that students may practice isolated micro-skills (like pronunciation drills) without engaging in authentic communication. Teachers must balance AI practice with human-centered interaction, peer collaboration, and reflective activities that foster communicative competence.

Additionally, speaking is inherently social, involving empathy, turn-taking, interpersonal negotiation, and emotional intelligence—qualities that AI cannot fully replicate. Therefore, human interaction remains irreplaceable, particularly for advanced discourse skills. Teachers must strategically design hybrid speaking curricula that combine digital affordances with collaborative classroom activities. Furthermore, institutional expectations may place pressure on teachers to adopt AI tools without sufficient time for experimentation or adaptation. Successful integration requires thoughtful curriculum design, ongoing evaluation, and alignment with learning goals. Teachers must be empowered to make decisions about when and how to use AI in ways that enhance rather than constrain pedagogical creativity. Finally, the future implications of AI in the speaking classroom warrant careful reflection. As AI systems become more sophisticated, they may eventually simulate increasingly complex communicative behaviors, offer real-time pedagogical decision-making, or detect subtle features of pragmatics and discourse. This raises important questions about the evolving role of teachers [7, 608].

While AI may automate some aspects of instruction, human teachers remain essential for motivation, emotional support, cultural insight, and the facilitation of genuine interpersonal communication. Instead of replacing teachers, AI will likely augment their capabilities, enabling them to focus on the relational and intellectual aspects of teaching that machines cannot emulate. Over the long term, AI may democratize speaking practice by giving every learner unlimited opportunities to speak, rehearse, reflect, and receive feedback. It may empower introverted students, accommodate diverse learning styles, and support multilingual learners in more personalized ways. At the same time, sustained critical engagement is necessary to ensure that AI fosters inclusivity, creativity, and communicative competence rather than reducing speaking to measurable mechanical components. In essence, the future of the speaking classroom lies in finding the right balance: harnessing AI's analytical power and scalability while preserving the human richness that makes communication meaningful.

As educators continue to explore innovative combinations of digital tools, AI feedback, human interaction, and authentic communicative experiences, the speaking classroom will increasingly reflect the communication landscape of the real world—hybrid, connected, dynamic, and evolving. The goal is not merely to integrate technology for its own sake but to empower learners to become confident, competent speakers who can navigate diverse contexts, collaborate across cultures, and communicate effectively in both physical and digital spaces. By approaching digital and AI integration thoughtfully—grounded in pedagogy, ethics, and learner needs—teachers can create speaking classrooms that are more inclusive, interactive, and impactful than ever before.

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