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Challenges, opportunities and a conceptual framework for language education in the AI era: Research directions and research design strategies

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Abstract

The rise of artificial intelligence (AI) is significantly reshaping the landscape of language education and research. While AI tools, particularly generative AI (GenAI) such as ChatGPT, present new opportunities for serving as efficient and effective tools for language instruction, assessment, and linguistic analysis, they also introduce a range of challenges and uncertainties. This paper explores the impacts of AI on language teachers and researchers, focusing on professional concerns and emerging opportunities. Drawing on recent literature, technological developments, and pedagogical practices, the paper formulates strategic recommendations for navigating AI-driven transformation in language education while maintaining academic integrity, learner-centeredness, and linguistic diversity. Several research directions, practical pedagogical recommendations, and research design strategies are provided accordingly.

Keywords: Artificial intelligence, Language education, Research directions, Research trends, Conceptual framework

Introduction

The integration of artificial intelligence (AI) in education is not a distant possibility but a present reality (Allison et al., 2025). In the field of language education and research, AI systems, particularly generative AI (GenAI), capable of natural language processing, machine translation, and language generation, have begun to alter how knowledge is created, taught, and assessed

(Tu & Lu, 2025). As AI continues to evolve, language educators and researchers are faced with a paradox: the technology offers unprecedented potential for personalized learning, data-driven insights, and enhanced productivity, yet it also generates professional concerns related to academic integrity, job security, pedagogical relevance, and epistemological shifts (Eyüp & Kayhan, 2023; Pertiwi et al., 2025). Language teachers worry that they or their students may be replaced by AI, given that its language capabilities may exceed those of their students and affect their employment prospects (Uçar et al., 2025; Yaşar & Karagucuk). Meanwhile, as AI becomes an increasingly prominent trend in the field, language education researchers may feel anxious about adapting to the new research directions it introduces (Parviz & Arthur, 2025; Pertiwi et al., 2025).

To address these concerns, a conceptual framework with several new perspectives is proposed in this article. We aim to inform language teachers and researchers that, while AI may pose certain threats, it also provides new opportunities. Rather than framing AI as a competitor to language education, or allowing concerns about its risks to foreclose engagement, the field may be better served by critically integrating the technology into educationally meaningful research and practice. We would like to emphasize that language teachers and researchers could have better opportunities for effectively employing AI in this new era. In the following sections, we first examine the concerns of language teachers and researchers, before turning to the opportunities available to them. Finally, several suggestions for research directions, practical pedagogical implementation, and research design strategies for AI in language education are outlined.

Concerns Among Language Teachers and Researchers

Anxiety is commonly experienced when individuals face paradigm shifts or environmental changes, such as rapid technological advancements and uncertainty about future roles. The rapid advancement and popularity of AI could generate substantial anxiety among language teachers and researchers, particularly if their concerns are not addressed. Identifying the sources of anxiety is very important for them to develop plans or strategies to resolve possible threats and concerns, and to explore new opportunities with confidence.

Concerns of Language Teachers

Language teachers have expressed concerns about students' overreliance on AI-generated content and the potential weakening of critical engagement and understanding in language learning (Stan et al., 2025). More broadly, the increasing ability of AI systems such as ChatGPT to generate grammatically accurate and contextually coherent language output has raised questions about the future purposes of language instruction and the value of human linguistic expertise. This concern is also reflected in Yaşar and Karagucuk's (2025) study, which found that students in English-related departments, particularly translation and interpreting, reported greater anxiety about AI's impact on their future careers, including fears of unemployment and the diminishing value of human linguistic expertise.

Another concern of language teachers is the possible misuse of AI by students in essay writing, translating, or generating critical responses. This raises concerns about not only low learning achievement, but also plagiarism, overreliance on AI, and the weakening of students' independent thinking and writing abilities. Several previous studies have addressed these concerns. For example, Kasneci et al. (2023) argued that although large language models such as ChatGPT offer important educational opportunities, their integration into learning contexts requires a clear pedagogical approach, strong critical thinking, fact-checking strategies, continuous human oversight, and awareness of potential misuse. Their argument suggests that without

these supports, students may rely on AI outputs uncritically, which could undermine meaningful learning and academic integrity.

The above concerns also imply the need for further research to develop and evaluate effective language teaching approaches to guide students to effectively and correctly use AI in language courses.

Concerns of Language Researchers

AI's influence on research design and analysis raises deep epistemological concerns in language studies. Technological disparities and uneven access can be a source of anxiety for language researchers, because not all educators or institutions have equal access to AI technologies, thereby widening the digital divide and limiting the broader adoption and study of AI-enhanced pedagogies. In addition, poor academic paper structure, hallucinated content, and over-reliance on AI-generated text have become new concerns in academic writing. These concerns may be particularly salient in collaborative research and in the supervision of master's and doctoral students, where issues of authorship, responsibility, originality, methodological rigor, and the verification of AI-assisted content require careful negotiation and oversight.

Furthermore, the roles of AI in language research studies need to be clearly specified when presenting the adopted approach, experimental process, and findings. For example, AI may function as a content provider, but researchers need to clarify whether and under what conditions AI-generated texts can be treated as authentic language data. A central methodological issue is therefore not whether AI should be framed exclusively as an analytical tool, a tutor, a tutee, or a learning partner, but to what extent and for what purposes AI is designed, implemented, and interpreted to perform these roles in language education research. Since AI may function in multiple ways depending on the research focus, researchers need to make its role explicit when presenting the research design, intervention process, data sources, and interpretation of findings. Allison et al. (2025) emphasized that researchers should pay sustained attention to equity, ethics, instructional design, and human-computer interaction, while also recognizing that GenAI can play different pedagogical roles in educational settings. Their perspective suggests that researchers need to make these roles explicit and justify them theoretically and methodologically when integrating AI into language research.

Opportunities Enabled by AI in Language Education and Research

AI offers powerful tools for adaptive and personalized language instruction. Intelligent tutoring systems, real-time grammar correction, pronunciation feedback, and conversation simulators can provide learners with customized experiences that were previously difficult to achieve. GenAI and pedagogically designed chatbots can support immediate feedback, individualized scaffolding, and flexible practice opportunities, thereby enhancing learner engagement and supporting diverse proficiency levels (Kasneci et al., 2023; Kohnke et al., 2023).

At the pedagogical level, AI encourages educators to rethink both teaching and assessment. Researchers and practitioners are experimenting with AI-assisted writing workshops, dialogic learning with chatbots, and multimodal content generation to enrich language learning experiences. At the same time, assessment practices are shifting from a sole focus on final products to more process-oriented approaches in which AI can provide iterative feedback, monitor learner progress, and support revision over time.

For example, experimental studies can be designed to examine the effects of AI-generated feedback on students' writing development by comparing groups receiving AI-assisted iterative feedback with those receiving only teacher feedback, focusing on revisions, linguistic accuracy, and writing quality across multiple drafts. Similarly, researchers may investigate how AI-supported

learning analytics, such as interaction logs or revision histories, can be used to monitor learner progress and inform adaptive instruction, examining their impact on learner engagement and self-regulated learning. Another possible research design may involve dialogic interaction with AI chatbots, where learners engage in sustained conversations and receive real-time feedback, allowing researchers to explore how iterative interaction and feedback cycles influence language proficiency, discourse competence, and revision behaviors.

Such developments suggest that AI may serve as a catalyst for broader pedagogical innovation by enabling more fine-grained, process-oriented investigation of language learning. While this trend has existed for some time, it has been significantly accelerated by the rise of AI (Allison et al., 2025; Kasneci et al., 2023).

AI also creates new possibilities for linguistic research by enabling scholars to analyze large-scale corpora, identify cross-linguistic patterns, and model language use with greater speed and precision. These developments can accelerate the pace of discovery in areas such as computational linguistics, discourse analysis, and applied linguistics, while also allowing researchers to investigate language phenomena that would be difficult to examine manually. As educational computing continues to evolve, AI is increasingly seen as a tool that can expand methodological options and support new forms of inquiry (Allison et al., 2025). With the help of AI, teacher-researchers can more readily research and reflect on their own teaching and language practices (Xerri, 2025) and gain insights into learners' progress and needs.

In both language teaching and research, AI-powered translation and transcription tools can further support multilingualism and inclusivity by improving language access and facilitating communication across linguistic boundaries. These tools may be particularly valuable in supporting minority language contexts, broadening participation in multilingual classrooms, and promoting international collaboration. When used thoughtfully, AI can help create more inclusive learning environments while also expanding opportunities for learners and researchers to engage with diverse languages and communities (Allison et al., 2025; Hwang & Chen, 2023).

Conceptual Framework for AI in Language Education

Building on Cukurova's earlier work that has progressively theorized the evolving role of AI in education, we propose a framework conceptualizes AI use in terms of three paradigms: replacement, complementarity, and synergy (Cukurova, 2024). His early work framed AI as an extension of educational processes by distinguishing between uses that substitute for human cognitive work and those that support richer forms of learning and interaction (Cukurova, 2019). This line of thinking was further elaborated in his subsequent work with a particular focus on GenAI in education, which argued that the educational value of AI depends not simply on its technical capacity, but on how it is designed and positioned in relation to human learning and agency (Cukurova et al., 2025). Most recently, this perspective has been extended into a more explicit conceptual framework for human–AI teaming in education, emphasizing that AI can be understood not only as a substitute or support tool, but also as a collaborative partner in tightly coupled systems where cognition and control are distributed across humans and AI (Cukurova, 2026a; 2026b). Figure 1 shows a conceptual framework for AI in language education. Its purpose is to enable educators and researchers to situate current or planned uses of AI with respect to human and AI relationships and roles in language education. It shows the gradual range of paradigms in terms of replacement, complementarity, and synergy, with AI tutors, AI tutees, and human–AI teaming positioned accordingly. Replacement refers to situations in which AI substitutes for human tasks or roles, emphasizing efficiency and automation but often risking reduced human learning or engagement (Li & Liao, 2025). Complementarity describes a relationship in which AI augments human capabilities by providing support such as feedback,

scaffolding, or information, while humans remain central decision-makers and gradually internalize assisted processes (Siaw & Ali, 2025). Synergy, in contrast, involves a deeper integration in which humans and AI function as an interdependent system with distributed cognition and shared agency, producing outcomes that neither could achieve alone (Kong et al., 2025). These paradigms could help language teachers and researchers to perceive AI from different angles; that is, AI could be a substitute, a supportive tool, or a collaborative partner in language learning, depending on how they conceptualize, design, and implement its role in the teaching and learning process or in different phases of that process.

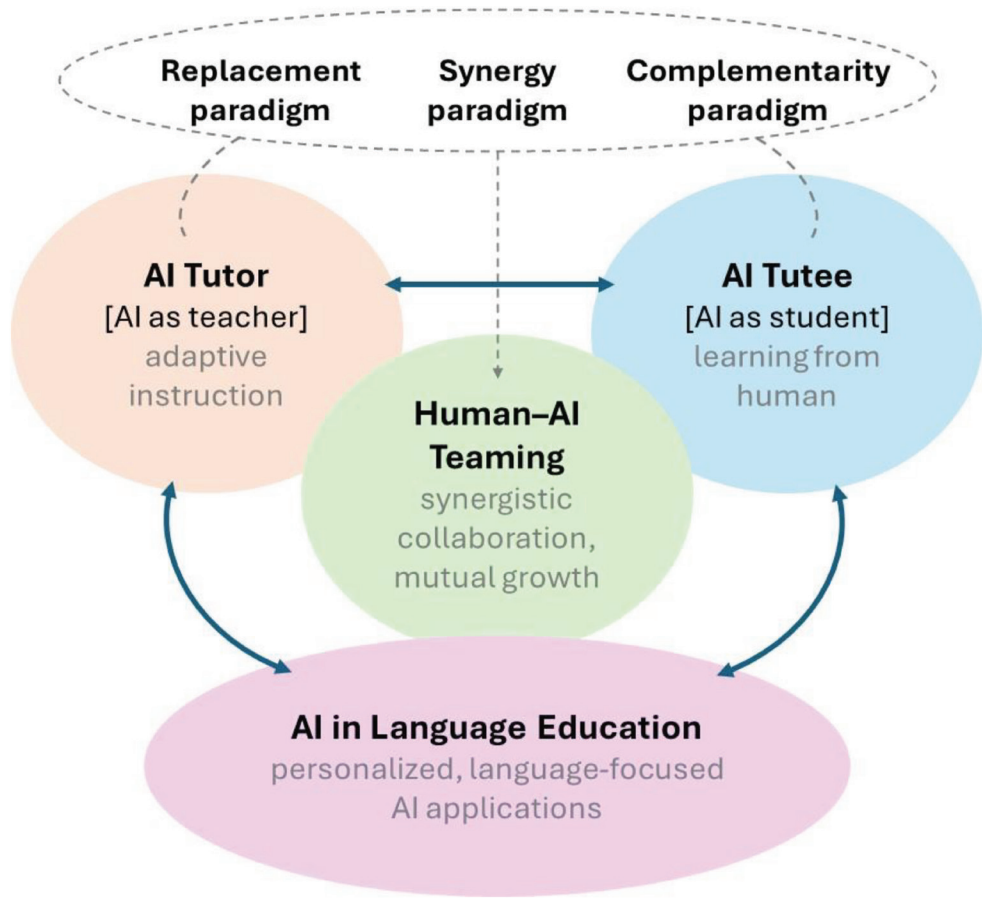


Figure 1. *Conceptual framework for AI in language education*

AI tutor refers to the AI systems designed to support and guide learners’ knowledge and skill development by providing adaptive instruction, feedback, and scaffolding tailored to individual needs. Drawing on learner data and models of domain knowledge, AI tutors can diagnose misconceptions, personalize learning pathways, and deliver step-by-step guidance or hints during problem solving. The effectiveness of AI tutors lies not only in improving task performance but in fostering deeper understanding, self-regulation, and sustained learning processes through targeted, timely, and pedagogically informed support. There have been many examples of using AI as tutors in language education (Wang et al., 2025). For instance, Luckyardi et al. (2024)

employed an AI chatbot as an instructional agent that supports learners through real-time interaction, personalized practice, and immediate feedback. The AI system guides students' development in vocabulary, grammar, pronunciation, and conversational skills by providing adaptive assistance in dynamic language-use contexts.

AI tutees are AI systems designed to learn from human instruction, positioning the human as the “teacher” and the AI as the learner within an educational interaction (Hwang et al., 2020). Unlike established intelligent tutoring systems that teach students, AI tutees acquire knowledge, skills, or problem-solving strategies through explanation, demonstration, or feedback provided by students. These systems often employ machine learning mechanisms to update their internal representations based on interaction, thereby enabling learning-by-teaching pedagogies in which students deepen their own understanding by teaching the AI. An example of AI tutees is the SimStudent proposed by Matsuda et al. (2020), which is a machine-learning-based teachable agent designed to function as an AI tutee within a learning-by-teaching paradigm. By positioning students as instructors responsible for guiding the agent's learning, SimStudent supports deeper conceptual understanding and metacognitive engagement, making it a foundational example of an AI tutee in educational research.

Human-AI teaming refers to a collaborative paradigm in which humans and AI systems work as interdependent partners, rather than as tools and users, to achieve shared cognitive and task outcomes (Berretta et al., 2023). In this model, agency, control, and cognition are distributed across both human and AI, with each contributing complementary strengths, such as human judgment, contextual understanding, and metacognition alongside AI's computational capacity, pattern recognition, and adaptive feedback. Crucially, effective human-AI teaming is designed to enhance human competence over time, not merely improve immediate performance, by structuring interactions (e.g., scaffolding, prompting, feedback) that support learning, reflection, and decision-making.

By integrating these considerations, the proposed framework offers a conceptual structure for examining AI roles and interaction paradigms in language education. In particular, it can support theory-informed discussion by linking AI use to perspectives on conversational and interactive learning, while also foregrounding ethical considerations such as human oversight, learner agency, and responsible pedagogical design. From this perspective, the educational value of AI lies not in replacing human intelligence, but in its potential to augment, extend, and reshape learning experiences through carefully designed human-AI partnerships.

In language education, learning is fundamentally grounded in communication, interaction, and meaning-making in the target language. Unlike many other disciplines, AI systems in this context do not merely deliver content but actively participate in conversational and dialogic processes, simulating social interaction and enabling learners to engage in authentic or semi-authentic language use. This creates a natural blurring of boundaries between tools and teachers, as AI can function both as an instructional support and as an interlocutor.

At the same time, language learning involves not only linguistic competence but also cultural and experiential knowledge, which AI systems can only partially approximate. This raises important questions about the extent to which such knowledge should be encoded, shared, or mediated through AI, and highlights the need to balance technological affordances with the preservation of uniquely human forms of understanding and agency.

Strategies and Recommendations for AI-supported Language Education Research

Building upon the conceptual framework of AI paradigms (i.e., replacement, complementarity, and synergy) and the corresponding roles of AI tutors, AI tutees, and human-AI teaming, this section outlines design principles, research directions, and pedagogical implications for

AI-supported language education. In particular, the framework is intended to inform applied and design-based research, in which the design and implementation of AI-supported learning environments constitute a central component of the research process. From this perspective, the following design principles serve as guidelines for navigating replacement, optimizing complementarity, and achieving synergy in human-AI collaborative learning.

Design Principles for AI-supported Language Learning Environments

From the perspective of the replacement paradigm, AI systems may risk reducing learners' cognitive engagement by automating language tasks such as writing, translation, and feedback generation (Yurt & Kuşci, 2026). To mitigate this, AI-supported language learning environments should be designed to support the complementarity paradigm, where AI (as a tutor or tool) scaffolds rather than substitutes learning. This requires implementing adaptive feedback, prompting strategies, and reflective tasks that ensure learners actively process linguistic input and construct meaning. In line with the AI tutor role, AI systems should also be grounded in pedagogical theories and instructional design principles. Within the complementarity paradigm, AI enhances human learning by providing personalized guidance, feedback, and scaffolding. Therefore, AI-supported language learning environments should integrate interaction, iterative feedback cycles, and opportunities for self-regulated learning, ensuring that AI functionalities are aligned with language learning objectives and learner characteristics.

As learning environments move toward the synergy paradigm, where humans and AI function as collaborative partners, transparency becomes essential. In human-AI teaming, learners must understand how AI generates feedback and language outputs. Thus, AI systems should incorporate explainable mechanisms that support learners' critical evaluation and foster trust, transforming AI from a black-box tool into an interpretable and pedagogically meaningful collaborator. Ethical considerations, including data privacy, algorithmic bias, and equitable access, cut across all three paradigms but become particularly critical in complementarity and synergy contexts, where learners interact more deeply with AI systems. Designing inclusive AI-supported language learning environments ensures that diverse learners benefit from AI-enhanced education without exacerbating existing inequalities.

Research Agenda for AI-supported Language Education

Future research should investigate how AI-supported learning may evolve from complementarity (AI as support) to synergy (AI as partner), or alternatively operate within these paradigms depending on context, in order to better understand how different interaction paradigms shape learner engagement, agency, and language development outcomes. In particular, studies should explore human-AI teaming in language learning contexts, such as collaborative writing, dialogic interaction, and co-construction of meaning, in order to examine how shared agency and distributed cognition influence language development. Consistent with the AI tutee role, research should also explore how learners teaching AI systems can enhance language learning outcomes. Positioned within the complementarity-to-synergy transition, AI tutees enable learners to externalize knowledge, reflect on linguistic structures, and engage in metacognitive processes. Future studies should therefore examine how such approaches affect language proficiency, motivation, and higher-order thinking.

Another critical research issue is to examine different configurations of AI automation (replacement) and human cognition (complementarity and synergy). Researchers should investigate how varying levels of AI support, ranging from full automation to guided scaffolding, impact learners' engagement, retention, and transfer of language knowledge, directly addressing concerns regarding the balance between AI-supported processes and cognitive development, as

well as other contextual factors such as resource availability and learner needs. In addition, AI-supported learning environments generate rich data that can inform personalized instruction. Research should explore how learning analytics can support adaptive learning within the complementarity paradigm and facilitate more advanced synergistic interactions, while ensuring that ethical considerations regarding data use and learner privacy remain central.

Pedagogical Implications for AI-supported Language Education

To effectively engage in AI-supported learning, learners must develop AI literacy that enables them to critically interpret and utilize AI outputs. Within the complementarity paradigm, this involves understanding AI as a support tool, while in the synergy paradigm, it extends to co-learning and collaboration with AI systems. Pedagogical practices should therefore emphasize critical engagement, reflection, and the co-construction of knowledge. At the same time, teacher roles evolve across the framework. In the replacement paradigm, teachers risk being marginalized; however, in complementarity and synergy contexts, their roles become more significant. Teachers act as facilitators, instructional designers, and orchestrators of human-AI teaming, guiding learners in interacting effectively and critically with AI systems. This shift is essential for maintaining pedagogical integrity in AI-supported language education.

Pedagogical tasks should also be explicitly designed to promote synergistic interaction between learners and AI. Activities such as collaborative writing, AI-mediated dialogue, and co-analysis of texts can foster deeper engagement and higher-order language skills, reflecting the synergy paradigm in which learning emerges from the interaction between human and AI. Finally, equity must be addressed across all paradigms, particularly as AI becomes more integrated into learning environments. Ensuring access to AI tools, supporting diverse linguistic backgrounds, and designing culturally responsive AI systems are essential for achieving inclusive AI-supported language education.

Potential Research Topics for AI-supported Language Education

Several key research issues highlighted by Hwang et al. (2020) provide valuable directions for language learning design and research design based on the proposed conceptual framework. For example, it is important to balance AI automation and human cognition so that AI supports, rather than diminishes, critical thinking and learning processes. It is also essential to consider pedagogical theories and instructional design principles when developing AI systems or designing studies for language education. In addition, ethical and equity concerns, including data privacy, bias, and unequal access to AI technologies, must be carefully addressed. When reporting research designs and findings, interpretability and transparency are equally important to enable readers to understand and critically evaluate AI outputs. Furthermore, attention to teacher roles in AI-supported language education, such as their shift from knowledge transmitters to facilitators, designers, and co-learners, is crucial.

Building on the conceptual framework and the above discussion, future studies on AI-supported language education can be advanced along several interrelated directions that reflect the paradigms of replacement, complementarity, and synergy, as well as the roles of AI as tutors, tutees, and collaborative partners.

- 1) From the perspective of human-AI interaction in language education, further research is needed to examine how learners engage with AI systems in different pedagogical roles, particularly within the transition from complementarity to synergy. This includes investigating how AI-mediated dialogue supports conversational practice, pragmatic competence, interactional competence, and negotiation of meaning; how AI-assisted

co-writing influences idea generation, lexical and grammatical accuracy, organization, revision quality, and genre awareness; and how collaborative problem-solving with AI supports task-based language learning, meaning-making, and higher-order thinking in the target language. Special attention should be given to the design of human-AI teaming environments in which learners and AI jointly participate in language production, feedback interpretation, revision, and reflection, while human agency, cultural understanding, and communicative purpose remain central to learning outcomes.

- 2) In relation to AI roles in learning, future studies should explore the differential effects of AI as tutors, tutees, and learning partners. While AI tutors have been widely examined in providing feedback and scaffolding, the potential of AI as tutee, supporting learning-by-teaching processes, remains underexplored in language education. Research is needed to understand how engaging learners in teaching AI systems influences their metacognitive awareness, linguistic accuracy, and conceptual understanding.
- 3) A critical line of inquiry concerns the balance between AI automation and human cognition. Researchers should investigate how varying levels of support provided by AI affect learners' cognitive engagement, particularly in tasks involving writing, translation, and communication. This includes examining when AI use leads to cognitive offloading and when it facilitates deeper learning, as well as identifying design strategies that promote productive cognitive engagement.
- 4) Pedagogical design and learning analytics in AI-supported environments are also crucial research topics. This includes developing theory-driven instructional models that integrate AI tools with established language learning theories, as well as leveraging AI-generated data (e.g., interaction logs, revision histories, and discourse patterns) to support adaptive and personalized language learning.
- 5) Ethical, social, and equity issues in AI-supported language education are also research topics that are attracting more attention. This includes examining biases in AI-generated language, ensuring transparency and explainability of AI systems, and investigating how unequal access to AI technologies may affect learning opportunities.
- 6) The evolving roles of teachers in AI-supported environments warrant further exploration, particularly in terms of how educators can effectively facilitate human-AI collaboration and support learners' critical engagement with AI.
- 7) Since AI systems now commonly support multimodal and multilingual interaction and code-switching, there is a need to research users' choices and experiences in interactions with AI. This will help develop understanding of language learner identities, self-regulation, and cultural preferences. Similarly, research is needed to explore teachers' and learners' choices and experiences in terms of the vast range of AI tools with which they can interact.
- 8) Language materials, assessments, and curricula are being adapted to learning in the AI era, which creates opportunities to research processes of creation, adaptation, and evaluation. This includes researching AI Tutors as co-designers and co-investigators in this process.

At the same time, methodological innovation is needed to adequately address these topics and will require combining quantitative analytics with qualitative insights in order to capture the complexity of language learning processes and educational or pedagogical adaptation. When teaching becomes increasingly distributed between human educators and AI systems, AI itself emerges as a research subject or participant, raising the question of whether existing methodological approaches can be directly transferred to this new context.

Practical Recommendations for Language Teachers

Building on the proposed conceptual framework, several practical recommendations can guide language teachers in integrating AI into classroom teaching in ways that support learning while maintaining learner agency, pedagogical integrity, and ethical awareness.

- 1) It is important to design AI-supported tasks that promote active learning rather than passive use. Instead of allowing AI to replace learners' cognitive and linguistic effort, teachers can ask students to evaluate, revise, and extend AI-generated outputs. For example, it is crucial to guide students to compare AI-generated texts with their own writing, identify linguistic strengths and weaknesses, and explain the reasoning behind their revisions.
- 2) It is critical to use AI as a scaffold rather than a substitute for language learning. Within the complementarity paradigm, teachers can integrate AI tools to support drafting, feedback, vocabulary development, grammar explanation, pronunciation practice, and interactive communication. However, these uses should be embedded in teacher-designed learning cycles, such as drafting, receiving AI feedback, evaluating the feedback, revising the text, and reflecting on the learning process.
- 3) Developing learners' AI literacy should be considered as part of language education. Students need to understand that AI-generated language may appear fluent while still containing factual inaccuracies, cultural bias, inappropriate register, or misleading explanations. Teachers can therefore design activities in which students compare outputs from different prompts, verify AI-generated information, identify bias, and discuss appropriate and inappropriate uses of AI in language learning.
- 4) Teachers should design teaching plans to engage students in human-AI collaboration in ways that move beyond simple tool use. From the perspective of synergy, AI can be positioned as a conversational partner, co-writer, brainstorming assistant, or dialogue partner. In such activities, teachers remain central in setting learning goals, monitoring the quality of interaction, guiding reflection, and ensuring that human judgment remains central to the learning process.
- 5) Assessment practices should be redesigned to reflect the AI era. Since AI can generate polished final products, teachers should place greater emphasis on learning processes, including drafts, revision histories, reflective commentaries, oral explanations, and students' ability to justify their use of AI. This can help preserve academic integrity while recognizing responsible AI use as part of contemporary language competence.
- 6) It is also important to take ethical and inclusive principles of using AI into account. Teachers and institutions need to consider whether learners have equitable access to AI tools, whether AI-generated materials reflect diverse linguistic and cultural backgrounds, and whether classroom policies clearly communicate expectations for responsible AI use. In multilingual classrooms, particular attention should be given to the possibility that AI may privilege dominant languages, standard varieties, or culturally narrow forms of communication.

Conclusions

The AI era presents a turning point for language educators and researchers. While legitimate concerns persist regarding expertise, authenticity, and ethics, AI also provides exciting possibilities for innovation, inclusivity, and pedagogical renewal. The field must engage critically and creatively with AI, positioning human agency and linguistic diversity at the center of future developments. Embracing the AI transformation with a thoughtful, research-informed approach will empower language professionals to navigate uncertainty and harness the transformative power of this emerging paradigm.

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