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AI and Foreign Language Learning: Bridging Classroom Practice and Research

Adriano Ferraresi, Anna Mongibello, Francesca Raffi and Serge Bibauw

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AI and Foreign Language Learning: Bridging Classroom Practice and Research. Introduction to the Special Issue

1. AI and language education

The advent of generative artificial intelligence (Gen AI) marked a momentous development across a range of academic and societal domains, including education. Debates about learning and teaching have moved beyond schools, universities and academic journals and conferences, gaining urgency in mainstream public discourse. Newspapers and magazines now regularly feature discussions of the present and future of education, often framed in terms that range from somewhat alarmist to outright catastrophic, with headlines such as "The AI Takeover of Education Is Just Getting Started" in *The Atlantic* (Shroff 2025) or "What Happens After A.I. Destroys College Writing?" (Hsu 2025) in *The New Yorker*.

While the intensity of the public debate may feel unprecedented, within language education the current moment builds on a long-standing tradition of engaging with digital technologies, dating back to the emergence of Computer-Assisted Language Learning (CALL) in the 1980s. Even the more specific intersection of artificial intelligence and language education predates the current wave of Gen AI by at least two decades: as Kartal and Yeşilyurt (2024) note, AI-related applications in language learning were already being explored in the mid-1990s. In this sense, today's developments are best understood not as a rupture, but as the latest phase in a trajectory of technological innovation in the field, one that has largely been characterised by sustained empirical inquiry and theoretical reflection (Liang/Hwang/Chen/Darmawansah 2021).

Although AI is now closely associated with technologies based on Large Language Models such as ChatGPT or Gemini, the concept of AI in language education encompasses a wide range of tools. Jiang (2022), for

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example, includes under the umbrella of AI such diverse tools as automatic evaluation systems, neural machine translation, intelligent tutoring systems (ITSs), and AI-driven chatbots. These technologies, classified based on their underlying architectures and goals, mark a highly heterogeneous landscape of systems and applications.

Importantly, research in language education has also underscored how the role of a given technology cannot be reduced to its technical design. Tools traditionally subsumed under the same name may serve very different instructional or learning purposes, as clearly illustrated by the case of chatbots. Reviewing the vast body of literature on the use of chatbots as learning assistants, Huang et al. (2022) identify as many as five different pedagogical functions for chatbots: they can serve as conversational interlocutors allowing students to converse in a second language (L2), as simulation tools allowing them to role-play, as a helpline to provide feedback and as providers of information or recommendation on learning materials.

Against this backdrop, the release of ChatGPT in 2022 has nevertheless been described as a "powerful game changer in the field" (Chapelle 2025: 1). Two interrelated features help explain the import of the changes brought about by the technology. First, generative AI systems display an unprecedented "ability to realistically mimic human conversation" (Kohnke/Moorhouse/Zou 2023: 538). Unlike earlier systems, which relied on restricted and highly guided conversational scenarios (Bibauw/Van den Noortgate/François/Desmet 2022), Gen AI affords open-ended interaction and is robust to language input that was often challenging for previous technologies, such as misspellings or long prompts (Huang/Hew/Fryer 2022). Second, Gen AI tools are remarkably versatile, bringing together functions that were previously distributed across a myriad of tools: they can be used directly by learners for practice and feedback, as well as by teachers for assessment, feedback generation, and materials development (Yang/Li 2024).

As might be expected in the presence of such a game changer, recent position papers (e.g., Han 2024) have called for more systematic research into the pedagogical affordances of generative AI tools, exploring the roles they can play in relation to the competences they are intended to develop. At the same time, systematic reviews such as Yang and Li (2024) suggest that much of the emerging empirical work on the affordances of ChatGPT remains focused on a relatively narrow range of competences or attitudinal

dimensions. Studies frequently examine improvements in discrete language skills (such as writing, vocabulary, or reading comprehension) or behavioural outcomes, including learner satisfaction and motivation. In so doing, they often conceptualise AI primarily as a means of enhancing "traditional" language skills, leaving untapped its potential to reshape learning processes and classroom practices.

The contributions collected in this special issue respond directly to these challenges. They are organised along a continuum that moves from critical and theoretical reflections on AI-mediated language learning, through course design and inclusive pedagogical frameworks, to empirical investigations of learner–AI interaction and, finally, to emerging forms of semiotic competence prompted by generative AI. Taken together, they demonstrate how classroom practice can and should be connected to theoretical reflection, while advancing the debate on the applications of Gen AI to language education in several key areas. In particular, the contributions foreground the relevance of competences such as AI literacy and transversal skills, adopt a more inclusive perspective which is tailored to diverse learner profiles, and introduce methodological approaches, and among them corpus-based ones, to examine these developments in a new light.

2. Overview of Contributions

The issue opens with a systematic review in the field of dialogue-based Computer-Assisted Language Learning (CALL) by Daniele Polizzi, Adriano Ferraresi, Silvia Bernardini, Cristiana Cervini, Maja Miličević Petrović and Giada Palmieri. Using the PRISMA methodology, the authors analyse 37 empirical studies on chatbot-mediated English language instruction, examining how chatbot effectiveness is conceptualised and operationalised across learner profiles, interactional and instructional designs, and learning outcomes. The review identifies a narrow conceptualisation of effectiveness and a persistent under-theorisation of interaction. Despite advances associated with LLM-based chatbots, a clear misalignment thus emerges between technological innovation and pedagogical grounding.

Building on the critical framing of AI effectiveness, Louise Ohashi's study shifts the focus from theory to pedagogical practice. The paper reports on an exploratory research project centred on the design and implementation of a university course aimed at developing students' AI

literacy for L2 learning in a Japanese higher-education context. The study foregrounds course design, teacher reflection, and students' emerging critical and creative engagement with AI tools. In doing so, it exemplifies how classroom-based inquiry can operationalise research-informed perspectives on AI in language education.

Within the section devoted to empirical investigations of learner–AI interaction and inclusive pedagogical design, Angela Sileo's contribution examines the use of AI-powered dialogue systems in tertiary EFL education. Drawing on a qualitative study conducted in a mixed hearing–DHH university classroom, the paper explores how ChatGPT mediates interactional competence, learner affect, and engagement over time. The findings underscore the importance of carefully designed, phased integration of AI tools to support inclusive language learning rather than positioning them as stand-alone conversational partners.

The degree of inclusion afforded by AI-based tools is also at the core of Giulia Staggini's contribution. Drawing on a mixed-methods study conducted with dyslexic university students, the paper investigates the impact of AI-assisted Virtual Learning Environments on EFL vocabulary development, motivation, and (learners' perceptions of) accessibility. Empirical findings from a VLE-based course show enhanced lexical gains, higher task completion, and greater learner satisfaction compared to traditional settings. On this basis, the study proposes an AI-assisted pedagogical framework for more equitable, learner-centred language education in higher education.

Francesca Raffi's paper further develops the empirical strand of the special issue by examining how AI-mediated dialogue is experienced by EFL learners at different proficiency levels. Through a mixed-methods design combining corpus-based analysis of learner–chatbot interactions with perceptual data, the study investigates affective, pragmatic, and interactional dimensions of engagement with ChatGPT. The findings provide proficiency-sensitive insights for the pedagogically informed design of adaptive chatbot interactions in language learning contexts.

Extending the empirical focus on learner engagement in AI-mediated dialogue, Valentina De Brasi and Anna Mongibello examine the interactional qualities that shape EFL learners' experience with conversational AI. Drawing on an on-field study conducted with Italian

university students, the paper analyses written interactions with two LLM-based chatbots (ChatGPT and Pi) through a Critical Discourse Analysis framework. Politeness and empathy are foregrounded as discursive strategies through which chatbots construct supportive, low-anxiety conversational environments. The study highlights how affective and pragmatic dimensions of AI-mediated interaction contribute to sustained learner engagement.

Marking a shift from interpersonal dynamics to semiotic mediation, Francesco Meledandri's study foregrounds generative AI and the linguistic mechanisms through which textual input is translated into visual output. Drawing on an on-field case study, the paper examines how prompt design and syntactic enhancement shape meaning-making in AI-generated images, with particular reference to the GenCraft platform. The study highlights the role of language as a key interface in human–AI collaboration. In doing so, it illustrates the pedagogical potential of generative AI in classroom settings and frames prompt literacy as a transversal competence for AI use.

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