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METHODOLOGY OF USING TECHNOLOGY IN LANGUAGE TEACHING: DIGITAL TOOLS AND TRANSFORMATIVE PEDAGOGY

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Abstract

This article provides a comprehensive examination of the methodologies employed in integrating technology into language teaching, tracing the evolution of computer-assisted language learning from behaviorist drill-and-practice programs to contemporary, socially-oriented digital environments. Drawing upon decades of research in educational technology, computer-assisted language learning, second language acquisition, and media studies, the article synthesizes major theoretical frameworks including the interactive approach, the sociocultural perspective on technology-mediated learning, and the ecological approach to digital literacies. The central argument posits that effective technology integration requires a principled, pedagogically-driven approach that recognizes technology as a tool for transforming language learning, not a replacement for sound pedagogy.

Keywords: technology-enhanced language learning, computer-assisted language learning, digital tools, mobile learning, artificial intelligence, virtual reality, online communication, educational technology, digital literacies, blended learning

Technology has transformed virtually every aspect of modern life, and language teaching is no exception. Over the past four decades, computers, the internet, mobile devices, and artificial intelligence have reshaped how languages are taught and learned. What was once a novelty—a computer lab with a handful of drill-and-practice programs—has become an integral part of language education, with learners accessing authentic materials, communicating with speakers worldwide, and receiving personalized feedback through digital tools.

The integration of technology into language teaching has been driven by both pedagogical and practical considerations. Technology offers unprecedented access to authentic language input, opportunities for interaction and communication, and tools for personalized learning. It supports learner autonomy, provides immediate feedback, and extends learning beyond the classroom. For many learners, technology is not just a tool but a context for language use, as they navigate digital environments in their daily lives.

The history of computer-assisted language learning has been characterized by three phases, as identified by Warschauer and others. The behaviorist phase, from the 1960s to the 1980s, involved drill-and-practice programs that treated language learning as habit formation. The communicative phase, from the 1980s to the 1990s, involved programs that provided opportunities for

communication and interaction, though often in limited ways. The integrative phase, from the 1990s onward, involves the integration of technology into all aspects of language learning, including authentic communication and multimedia environments. This historical framework highlights the evolving relationship between technology and pedagogy.

The interactive approach emphasizes the importance of interaction in language learning. Technology can support interaction in multiple ways: learner-computer interaction through tutorials and feedback, learner-learner interaction through online communication, and learner-content interaction through multimedia materials. The quality of interaction matters more than the medium.

The sociocultural perspective emphasizes the social and cultural dimensions of learning. Technology can create communities of practice, support collaborative learning, and connect learners with speakers and cultures worldwide. Learning is mediated by tools, and digital tools are powerful mediators of language learning.

The ecological approach views learning as situated in complex environments. Learners interact with multiple tools, resources, and people in their learning ecology. Effective technology integration recognizes the complexity of these interactions and supports learners in navigating them. This perspective highlights the importance of context and the need to consider the entire learning environment.

The theory of digital literacies recognizes that technology use involves not just technical skills but also social, cultural, and critical competencies. Learners need to be able to locate, evaluate, and use digital information; to communicate and collaborate online; and to navigate digital environments critically and ethically. Digital literacies are essential for full participation in contemporary society.

The concept of computer-mediated communication emphasizes the role of technology in enabling communication across time and space. CMC includes email, discussion forums, chat, video conferencing, and social media. CMC provides authentic opportunities for language use and interaction, and it has its own conventions and norms that learners need to understand.

Technology can support language learning across all areas of the curriculum. This section provides an overview of tools and strategies for different instructional purposes.

Vocabulary and grammar tools support the development of linguistic knowledge. Digital flashcards with spaced repetition systems, such as Anki and Quizlet, provide efficient vocabulary practice. Online dictionaries, corpora, and concordancers enable exploration of language use. Grammar-checking tools provide feedback on accuracy. These tools can supplement classroom instruction and support independent practice.

Listening tools provide access to authentic and pedagogically-designed audio materials. Podcasts, YouTube videos, and streaming services offer extensive listening materials. Interactive listening tasks can be created with tools such as Edpuzzle. Speech recognition and transcription tools support listening practice. Listening technology supports extensive and intensive listening development.

Speaking tools support the development of oral communication skills. Voice recording tools enable self-recording and self-monitoring. Speech recognition provides feedback on pronunciation and fluency. Video conferencing and voice chat connect learners with speakers worldwide. Virtual

reality and augmented reality provide immersive speaking environments. Speaking technology supports both accuracy and fluency development.

Reading tools provide access to authentic and adapted reading materials. Digital texts with embedded dictionaries and glossaries support comprehension. E-readers and reading apps enable extensive reading. Annotation and highlighting tools support active reading. Text-to-speech tools support reading-while-listening. Reading technology supports both extensive and intensive reading development.

Writing tools support the development of written communication skills. Word processors with spell-check and grammar-check provide feedback. Collaborative writing tools, such as Google Docs, enable peer collaboration and revision. Online corpora support vocabulary and grammar in writing. Writing tools support the writing process and feedback.

Communication and collaboration tools connect learners with others. Email, discussion forums, and chat enable asynchronous and synchronous communication. Social media platforms provide authentic language use contexts. Video conferencing enables face-to-face interaction at a distance. Online language exchanges connect learners with native speakers. Communication technology supports interaction and authentic language use.

Course management and learning management systems, such as Moodle, Canvas, and Blackboard, organize learning materials, assessments, and communication. Learning management systems provide a coherent structure for blended and online learning. They support the integration of multiple tools and resources.

The field of technology-enhanced language learning faces numerous contemporary challenges and developments that require ongoing methodological attention.

Artificial intelligence is transforming language learning in significant ways. AI-powered chatbots provide conversational practice. Intelligent tutoring systems offer personalized instruction and feedback. Automated essay scoring provides writing feedback at scale. Natural language processing enables increasingly sophisticated language analysis. AI offers significant opportunities but also raises concerns about equity, privacy, and the role of human interaction.

Mobile learning enables learning anytime, anywhere. Mobile devices are increasingly the primary means of internet access for many learners. Mobile apps provide flexibility and convenience. However, mobile learning raises issues of distraction, screen time, and the quality of mobile resources.

Virtual reality and augmented reality offer immersive learning environments. VR simulates real-world contexts for language use. AR overlays digital information onto the physical world. These technologies are promising but remain expensive and require technical expertise.

Online language exchanges connect learners with speakers of the target language. Platforms such as iTalki, Tandem, and HelloTalk facilitate conversation practice. Language exchanges provide authentic interaction and cultural exchange. However, they require guidance and support for effective use.

Digital distraction is a significant concern. Learners may be distracted by notifications, social media, and entertainment. Teachers should help learners develop self-regulation and manage their technology use.

Teacher training remains a persistent challenge. Many teachers lack training in using technology effectively. Teacher education programs should include technology integration. Ongoing professional development is essential.

Access and equity issues persist. Learners in resource-constrained contexts may lack access to technology. Teachers should consider alternatives and support learners with limited access.

Use technology meaningfully. Technology should support authentic, meaningful communication and engagement. Avoid using technology for its own sake. Ask how technology can support learning in ways that would not otherwise be possible.

Integrate technology coherently. Technology should be integrated into the curriculum, not added as an afterthought. Plan for consistent and coherent use. Coordinate across courses and levels.

Support learners and teachers. Provide training and support for learners in using technology. Provide professional development for teachers. Address technical and pedagogical support needs.Evaluate regularly. Evaluate technology use for effectiveness, usability, and impact. Use evaluation to inform improvement. Be prepared to adjust and adapt.

Looking to the future, several trends will shape technology-enhanced language learning. Artificial intelligence will become more sophisticated and integrated. Virtual and augmented reality will become more accessible. Mobile learning will continue to grow. The lines between formal and informal learning will blur. Teachers will remain essential, guiding learners in navigating complex digital environments.

A final reflection: technology is a tool, not a solution. The quality of language teaching depends primarily on the quality of pedagogy, not the sophistication of technology. The best technology is invisible, supporting learning without drawing attention to itself. The goal is not to use more technology but to use technology better—to support learners in developing the language skills and digital literacies they need for meaningful participation in a digital world.

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