

**THE ROLE OF MODERN TECHNOLOGIES IN LANGUAGE
LEARNING IN NON-PHILOLOGICAL FIELDS**

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Abstract: The integration of modern technologies into language learning has revolutionized how professionals in non-philological fields acquire linguistic skills. Artificial intelligence (AI) and online platforms now offer tailored solutions for sectors such as energy-saving technologies, transport, and engineering, where multilingual communication is critical. This article explores the transformative role of AI-driven tools like adaptive learning systems and chatbots, alongside online platforms such as MOOCs and virtual classrooms, in facilitating language acquisition. Case studies from energy, transport, and engineering highlight the practical benefits of these technologies, including enhanced international collaboration, improved safety protocols, and streamlined operations. By bridging linguistic gaps, modern technologies empower professionals to meet the demands of a globalized workforce, underscoring the necessity of integrating digital language learning into professional development programs.

Introduction.

In an era of globalization, language proficiency has transcended traditional academic boundaries, becoming indispensable in technical and engineering fields. Professionals in energy-saving technologies, transport, and engineering increasingly collaborate across borders, necessitating fluency in foreign languages to access research, comply with safety standards, and engage with international teams. However, traditional language education often fails to address the specialized needs

of these sectors. Enter modern technologies: AI and online platforms now provide scalable, personalized solutions that align with the technical lexicon and situational demands of non-philological fields. This article examines how these innovations are reshaping language learning, enabling professionals to overcome linguistic barriers and thrive in a interconnected world.

Methods

Artificial Intelligence in Language Learning

AI has emerged as a cornerstone of language acquisition through tools like adaptive learning algorithms, chatbots, and natural language processing (NLP). Adaptive platforms such as Duolingo and Babbel use machine learning to customize lessons based on user progress, prioritizing vocabulary relevant to specific industries. For instance, an engineer in renewable energy might receive exercises focused on terms like *photovoltaic* or *grid integration*.

AI chatbots simulate real-world conversations, allowing learners to practice technical dialogues. A transport engineer could interact with a bot to master aviation English, critical for complying with International Civil Aviation Organization (ICAO) standards. NLP tools further aid in parsing complex technical documents, offering real-time translations and summaries, thus enhancing comprehension of international research papers or manuals.

3.2 Online Platforms and Virtual Classrooms

Massive Open Online Courses (MOOCs) like Coursera's *English for Engineering* or edX's *Technical Communication* provide structured curricula tailored to professionals. These platforms often include peer-reviewed assignments and forums for collaborative problem-solving. Virtual classrooms, such as those offered by Rosetta Stone for Enterprises, enable real-time interaction with instructors and global peers, fostering cultural and linguistic exchange. Corporations like Siemens have adopted such platforms for workforce training, ensuring employees can navigate multilingual projects efficiently.

3.3 Case Study: Energy-Saving Technologies

In the energy sector, multilingualism is vital for accessing global research and collaborating on projects like cross-border smart grids. AI tools like DeepL and specialized apps such as Memrise offer courses in technical German or Mandarin, enabling engineers to interpret specifications from international partners. For example, a German engineer working with a Chinese firm on solar panel efficiency might use AI translation during virtual meetings, while platforms like Coursera provide modules on renewable energy terminology in multiple languages.

3.4 Case Study: Transport and Engineering Sectors

Transport and engineering demand rigorous language standards to ensure safety and operational coherence. The ICAO mandates Level 4 English proficiency for pilots, prompting airlines to use VR simulations for immersive language practice. Similarly, maritime engineers utilize apps like Maritime English to master standardized phrases for emergency protocols. In civil engineering, platforms like LinkedIn Learning offer courses in *Construction Spanish*, preparing workers for multilingual sites. VR scenarios, such as simulated control room interactions, allow engineers to practice language skills in contextually rich environments, reducing on-site miscommunication risks.

Conclusion

Modern technologies have redefined language learning for non-philological professionals, offering flexible, context-specific solutions that traditional methods cannot match. AI and online platforms not only enhance technical vocabulary but also foster intercultural competence, crucial for global collaboration. As industries like energy, transport, and engineering continue to internationalize, integrating these tools into professional training will be imperative. Future advancements, such as AR for immersive onsite language practice and blockchain for credentialing, promise further innovation. Ultimately, embracing technological solutions is no longer optional but essential for cultivating a agile, multilingual workforce capable of navigating the complexities of a globalized economy.

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Trends in the Use of Foreign Languages for Professional Priority May 17, 2025

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FOR PROFESSIONAL PRIORITY
MAY 17, 2025