

## DEVELOPING ENGLISH SPEAKING SKILLS THROUGH ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN FOREIGN LANGUAGE TEACHING

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**Abstract:** *The integration of Artificial Intelligence (AI) into foreign language pedagogy represents a paradigm shift, particularly in developing speaking competencies. This article examines the efficacy of AI-driven tools – encompassing intelligent tutoring systems, conversational agents, and automated speech recognition – in facilitating English speaking skills. It posits that AI can provide scalable, personalized, and psychologically safe environments for authentic oral practice, addressing traditional classroom limitations. The analysis is contextualized within global pedagogical trends and national educational strategies, with specific reference to the Republic of Uzbekistan’s digital education reforms. Drawing upon linguistic theories, and incorporating empirical data, the article argues for a complementary, hybrid model where AI augments human instruction to foster communicative competence.*

**Keywords:** *Artificial Intelligence, Communicative Competence, Zone of Proximal Development, Personalized Learning, Automated Speech Recognition, Conversational Agents, Intelligent Tutoring Systems.*

O‘zbekiston Respublikasi IIV 2-sonli Toshkent akademik litseyi ingliz tili fani katta o‘qituvchisi  
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**Annotatsiya:** *Sun‘iy intellekt (SI) ning xorijiy tilni o‘qitish jarayoniga integratsiyalashuvi, ayniqsa og‘zaki nutq ko‘nikmalarini rivojlantirishda, pedagogik paradigmaning tubdan o‘zgarishini anglatadi. Ushbu maqolada ingliz tilida gapirish ko‘nikmalarini rivojlantirishda sun‘iy intellektga asoslangan vositalar – aqli repetitorlik tizimlari, suhbatdosh agentlar va avtomatlashtirilgan nutqni aniqlash texnologiyalarining samaradorligi tahlil qilinadi. Maqolada SI an‘anaviy sinf sharoitidagi cheklovlarni bartaraf etgan holda, autentik og‘zaki mashq uchun keng ko‘lamli, shaxsiylashtirilgan va psixologik jihatdan xavfsiz muhit yaratishi mumkinligi*

asoslanadi. Tahlil global pedagogik tendensiyalar va milliy ta'lim strategiyalari kontekstida olib borilib, O'zbekiston Respublikasida amalga oshirilayotgan raqamli ta'lim islohotlariga alohida e'tibor qaratiladi. Lingvistik nazariyalarga tayangan holda va empirik ma'lumotlarni o'z ichiga olgan holda, maqola kommunikativ kompetensiyani rivojlantirishda sun'iy intellekt inson o'qituvchisini to'ldiruvchi gibril model samarali ekanligini asoslab beradi.

**Kalit so'zlar:** Sun'iy intellekt, kommunikativ kompetensiya, proksimal rivojlanish zonasi, shaxsiylashtirilgan ta'lim, avtomatlashtirilgan nutqni aniqlash, suhbatdosh agentlar, aqlli repetitorlik tizimlari.

**Аннотация:** Интеграция искусственного интеллекта (ИИ) в преподавание иностранных языков представляет собой смену педагогической парадигмы, особенно в развитии навыков устной речи. В данной статье рассматривается эффективность инструментов, основанных на ИИ, включая интеллектуальные обучающие системы, разговорные агенты и технологии автоматического распознавания речи – в формировании навыков говорения на английском языке. В работе утверждается, что ИИ способен обеспечивать масштабируемую, персонализированную и психологически безопасную среду для аутентичной устной практики, устраняя ограничения традиционного аудиторного обучения. Анализ проводится в контексте глобальных педагогических тенденций и национальных образовательных стратегий с особым акцентом на цифровые образовательные реформы Республики Узбекистан. Опираясь на лингвистические теории и эмпирические данные, статья обосновывает целесообразность комплементарной гибридной модели, в которой ИИ дополняет деятельность преподавателя с целью развития коммуникативной компетенции.

**Ключевые слова:** Искусственный интеллект, коммуникативная компетенция, зона ближайшего развития, персонализированное обучение, автоматическое распознавание речи, разговорные агенты, интеллектуальные обучающие системы.

The primacy of speaking skills within the overarching goal of communicative competence in English language teaching (ELT) is universally acknowledged. As the global lingua franca, proficiency in spoken English facilitates international dialogue, academic mobility, and economic opportunity. However, the development of fluency, accuracy, and pragmatic appropriateness in speech remains a persistent challenge in traditional foreign language classrooms. Constraints such as large student-to-teacher ratios, limited contact hours, teacher variability, and the inherent psychological barriers

of language anxiety – often encapsulated in Krashen’s “Affective Filter Hypothesis”<sup>1</sup> – frequently impede sufficient quality practice. The contemporary pedagogical landscape is thus witnessing a transformative integration of Artificial Intelligence (AI), offering tools that promise to democratize access to interactive speaking practice. This article explores the theoretical underpinnings, practical applications, and empirical evidence supporting the use of AI technologies for developing English speaking skills, with particular attention to the educational context of Uzbekistan, where national policy actively champions digital transformation.

The application of AI in language acquisition is not a-theoretical; rather, it finds resonance with established hypotheses in second language acquisition (SLA). Central to this discussion is the Interaction Hypothesis, proposed by Long, which emphasizes that language proficiency is forged through meaningful communicative interaction and the negotiation of meaning.<sup>2</sup> AI-powered conversational agents can simulate such interactions, providing endless opportunities for negotiated dialogue. Similarly, Vygotsky’s Sociocultural Theory, particularly the concept of the Zone of Proximal Development (ZPD), is relevant.<sup>3</sup> Intelligent Tutoring Systems (ITS) can be designed to scaffold learners, offering just-in-time support that is slightly beyond their current independent ability, thereby facilitating progression.

Furthermore, AI aligns with the principles of personalized and adaptive learning. It can perform continual diagnostic assessments, tailoring content difficulty, lexical range, and grammatical complexity to the individual learner’s profile – a feat nearly impossible for a single instructor managing a heterogeneous class. This personalization directly addresses the Comprehensible Input Hypothesis, by ensuring that the AI provides input at the optimal ‘i+1’ level.<sup>4</sup> From a psycholinguistic perspective, the low-stakes, private environment offered by AI practice can significantly lower the affective filter, encouraging risk-taking and fluency over a preoccupation with errors. Uzbek linguist G. Khodjanliyazov, in his works on communicative methods, has similarly stressed the importance of creating a “supportive psychological climate” for language production, a condition that AI interfaces can effectively engineer.<sup>5</sup>

The technological ecosystem for speaking practice is diverse, encompassing several key modalities:

Automated Speech Recognition (ASR) and Pronunciation Tutors: Modern ASR, powered by deep learning, moves beyond simple word-level accuracy to analyze

<sup>1</sup> Stephen Krashen, *Principles and Practice in Second Language Acquisition*. Prentice-Hall, 1982.

<sup>2</sup> Michael H. Long, "The Role of the Linguistic Environment in Second Language Acquisition," in *Handbook of Second Language Acquisition*, eds. W. Ritchie and T. Bhatia. Academic Press, 1996, pp. 413-468.

<sup>3</sup> L.S. Vygotsky, *Mind in Society: The Development of Higher Psychological Processes*. Harvard UP, 1978.

<sup>4</sup> Stephen Krashen, *The Input Hypothesis: Issues and Implications*. Longman, 1985.

<sup>5</sup> G. Khodjanliyazov, *Kommunikativ Metod: Nazariya va Amaliyot*. Communicative Method: Theory and Practice. Fan, 2009, p.112.

suprasegmental features – intonation, stress, rhythm, and phoneme articulation. Tools like ELSA Speak or embedded features in platforms like Duolingo provide immediate, granular feedback on pronunciation, often visualized through spectrograms or scoring systems. This offers learners the repetitive, precise phonetic practice crucial for intelligibility, a area underscored by the research of Russian phonetician L.V. Shcherba.<sup>6</sup>

**Conversational AI and Chatbots:** From simple scripted bots to advanced large language model (LLM)-driven agents like ChatGPT with voice capabilities, these systems engage learners in dialogic practice. They can be programmed for specific scenarios, for instance, job interviews, hotel check-ins, allowing for targeted pragmatic and lexical development. Their infinite patience and lack of judgment create a safe space for experimentation. As noted by English applied linguist D. Nunan, the need for “authentic” communication tasks is vital, and while AI interactions are simulated, they increasingly mimic natural conversational flow.<sup>7</sup>

**Intelligent Tutoring Systems (ITS) and Virtual Reality (VR):** More immersive systems combine AI with VR to place learners in simulated environments – a virtual market, conference room, or campus. Here, the AI controls non-player characters, requiring the learner to use spoken English to navigate tasks. This contextualizes language use, enhancing both cognitive engagement and long-term retention through situated learning.

**Analytics and Feedback Systems:** AI algorithms analyze spoken output for not just phonetic accuracy, but also for lexical diversity, grammatical complexity, and fluency metrics, for example, speech rate, pause frequency. This data-driven feedback provides learners and instructors with dashboards tracking progress over time, moving assessment from summative to formative.

A growing body of empirical research substantiates the potential of AI in oral skills development. A meta-analysis by Mei-Rong Alice Chen of 40 studies on AI in language learning found a moderate to large overall effect size ( $g = 0.65$ ), with particularly strong outcomes for speaking and listening skills compared to other domains.<sup>8</sup> A controlled study using an AI conversation partner with refugees in Germany reported a 23% greater improvement in self-reported speaking confidence compared to a control group using traditional workbook methods over a 12-week period.<sup>9</sup> Furthermore, data from a global language learning platform with over 10 million users indicated that learners who engaged with its AI-powered speaking features for more than 15 minutes daily showed

<sup>6</sup>L.V. Shcherba, *Yazykovaya Sistema i Rechevaya Deyatel'nost*. Language System and Speech Activity. Nauka, 1974.

<sup>7</sup>David Nunan, *Task-Based Language Teaching*. Cambridge UP, 2004.

<sup>8</sup>Mei-Rong Alice Chen, et al., "The Effectiveness of Artificial Intelligence in Language Learning: A Meta-Analysis", *Journal of Educational Technology & Society* 23.3 (2020): 1-18.

<sup>9</sup> "AI as a Language Learning Tool for Refugees: A Pilot Study," *BMZ Report*, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), 2022.

a 300% faster progression through speaking competency benchmarks than those who did not.<sup>10</sup>

However, research also highlights limitations. Critiques often center on the AI's current inability to fully grasp cultural nuance, complex pragmatic cues, or the emotional subtext of communication – areas where human instructors remain irreplaceable. The risk of learners developing an overly formulaic or mechanical speaking style from interacting with predictable AI is also a noted concern.<sup>11</sup> Therefore, the most effective pedagogical model emerging from the data is a blended or hybrid approach, where AI handles repetitive practice, personalized drilling, and initial exposure, freeing classroom time for human-led, creative, collaborative, and culturally rich communicative activities.

The integration of AI in ELT aligns seamlessly with the strategic vision for education modernization in the Republic of Uzbekistan. This commitment is enshrined in a series of presidential decrees and government resolutions. The “Digital Uzbekistan – 2030” strategy explicitly identifies the digital transformation of education as a national priority, advocating for the introduction of “artificial intelligence, big data and cloud technologies” into the learning process.<sup>12</sup> More specifically, the Presidential Decree PF-6077 “On Additional Measures to Improve the Education System” mandates the enhancement of teaching methodologies and the widespread adoption of information and communication technologies (ICT) across all educational stages.<sup>13</sup>

These policy directives have catalyzed concrete initiatives. The Ministry of Higher Education, Science, and Innovation has partnered with international EdTech companies to pilot AI-powered language labs in several universities. A 2023 report from this pilot indicated a 40% reduction in students' perceived speaking anxiety and a measurable 18% improvement in pronunciation accuracy on post-tests, as evaluated by both AI metrics and human raters.<sup>14</sup> Nationally, projects like the "One Million Programmers" initiative, while focused on IT, create a digital-native ecosystem and infrastructure conducive to adopting AI across disciplines, including language education.

Uzbek scholars have actively engaged with this trend. Linguists such as D. Khasanov have analyzed the role of computer linguistics in developing communicative competence, arguing for a “techno-humanistic balance” where technology serves to

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<sup>10</sup>Internal Efficacy Data Report," Duolingo, 2023. Proprietary dataset summarized in public white paper.

<sup>11</sup>Robert J. Blake, "Second Language Acquisition and Technology: A Review of the Research," *CALICO Journal* 38.1, 2021, pp. 1-28.

<sup>12</sup>Decree of the President of the Republic of Uzbekistan, "Digital Uzbekistan - 2030" Strategy, No. UP-6079, October 5, 2020.

<sup>13</sup>Decree of the President of the Republic of Uzbekistan PF-6077, "On Additional Measures to Improve the Education System," November 6, 2020.

<sup>14</sup>"Interim Report on the AI Language Lab Pilot Program," Uzbekistan State World Languages University, submitted to the Ministry of Higher Education (2023).

amplify, not replace, the interpersonal goals of language learning.<sup>15</sup> This indigenous scholarly discourse is crucial for contextualizing global technologies to local pedagogical traditions and needs.

Despite its promise, the deployment of AI in ELT is not without significant challenges. Digital equity remains a paramount concern: access to reliable high-speed internet and personal devices is not universal, potentially exacerbating educational inequalities. Data privacy is another critical issue, as voice data is highly sensitive biometric information. The ethical collection, storage, and use of this data by platform providers must be rigorously regulated – a concern yet to be fully addressed in many jurisdictions.

Furthermore, there is the risk of algorithmic bias. ASR and assessment models trained primarily on native-speaker corpora may perform poorly with diverse accents, unfairly penalizing learners from specific linguistic backgrounds. Continuous efforts to diversify training data are essential. Finally, teacher readiness is a bottleneck. Successful integration requires comprehensive teacher training programs to develop digital pedagogic competence, enabling educators to critically select, implement, and complement AI tools effectively.

The development of English speaking skills through AI technologies presents a compelling, evidence-supported frontier in foreign language teaching. By providing scalable, personalized, and psychologically secure environments for practice, AI tools effectively address historic constraints of the traditional classroom. They operationalize key SLA theories, from negotiated interaction to comprehensible input, in novel digital forms. The experience of Uzbekistan demonstrates how national policy can proactively foster such innovation, aligning digital transformation goals with specific linguistic competency outcomes.

However, the optimal path forward is not one of replacement, but of symbiosis. The future of ELT lies in a hybrid model wherein AI assumes the role of an indefatigable practice partner and diagnostic assistant, while the human teacher focuses on higher-order functions: inspiring motivation, facilitating complex intercultural dialogue, teaching nuanced pragmatics, and fostering the creative and critical use of language. Future research should focus on longitudinal studies of hybrid models, the development of culturally and accent-inclusive AI, and the creation of robust ethical frameworks for EdTech. As AI continues to evolve, its thoughtful integration, guided by sound pedagogy and equitable policy, holds the potential to make true communicative competence in English a more attainable goal for learners worldwide.

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<sup>15</sup>D.Khasanov, "Sovremennye Informatsionnye Tekhnologii v Obuchenii Inostrannym Yazykam: Vozmozhnosti i Risk". Modern Information Technologies in Foreign Language Teaching: Opportunities and Risks, *Vestnik TashGU* 4, 2021, pp. 45-49.

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