
Digitalization in secondary schools of Uzbekistan: Advantages and disadvantages in the context of AI-enhanced speaking skills development

Shodiyeva Nasiba Rustamovna

Nshodiyeva714@gmail.com

PhD Student,

Uzbekistan State World Languages University

Annotation

Uzbekistan has made significant progress in the digitalization of its education system, particularly through large-scale investments in digital infrastructure and AI-related initiatives. Currently, nearly all secondary schools are equipped with broadband internet, and various digital platforms have been introduced to support teaching and learning processes. However, despite these achievements, a critical gap remains in the application of artificial intelligence technologies for developing English speaking skills. This study analyzes the current state of digitalization in Uzbekistan's secondary schools, identifying its key advantages, including improved access to resources and technological readiness, as well as its limitations, such as insufficient teacher training, lack of specialized AI tools for language learning, and persistent digital inequality between urban and rural areas. Based on theoretical frameworks of communicative language teaching and international research on AI-enhanced learning, the paper proposes practical recommendations for integrating AI technologies into English language instruction. The findings suggest that while Uzbekistan possesses strong infrastructural potential, targeted pedagogical and policy interventions are necessary to effectively support speaking skills development among secondary school students.

Keywords

Digitalization, AI-enhanced learning, speaking skills, English language teaching, secondary education, Uzbekistan, communicative competence

O'zbekiston umumta'lim maktablarida raqamlashtirish: sun'iy intellekt yordamida nutqiy ko'nikmalarni rivojlantirishning afzalliklari va kamchiliklari

Shodiyeva Nasiba Rustamovna

Nshodiyeva714@gmail.com

Tayanch doktorant (PhD),

O'zbekiston davlat jahon tillari universiteti

Annotatsiya

O'zbekiston ta'lim tizimini raqamlashtirish borasida sezilarli yutuqlarga erishdi, ayniqsa raqamli infratuzilma va sun'iy intellektga oid tashabbuslarga katta miqdorda investitsiyalar kiritilishi natijasida. Hozirgi kunda deyarli barcha umumiy o'rta ta'lim maktablari keng polosali internet bilan ta'minlangan bo'lib, o'qitish va o'rganish jarayonlarini qo'llab-quvvatlash uchun turli raqamli platformalar joriy etilgan. Biroq, ushbu yutuqlarga qaramay, ingliz tilida gapirish ko'nikmalarini rivojlantirishda sun'iy intellekt texnologiyalaridan foydalanish borasida muhim bo'shliq saqlanib qolmoqda. Mazkur tadqiqot O'zbekiston umumiy o'rta ta'lim maktablarida raqamlashtirishning hozirgi holatini tahlil qiladi hamda uning asosiy afzalliklarini – resurslarga kengroq kirish imkoniyati va texnologik tayyorgarlik

darajasining oshganini – aniqlaydi. Shu bilan birga, u bir qator kamchiliklarni ham ko'rsatib beradi, jumladan, o'qituvchilarning yetarli darajada tayyor emasligi, til o'rganish uchun maxsus sun'iy intellekt vositalarining yetishmasligi hamda shahar va qishloq hududlari o'rtasidagi raqamli tafovutning saqlanib qolayotgani. Kommunikativ til o'qitish nazariyasi hamda sun'iy intellekt asosidagi o'qitish bo'yicha xalqaro tadqiqotlarga asoslanib, maqolada ingliz tili darslariga sun'iy intellekt texnologiyalarini integratsiya qilish bo'yicha amaliy tavsiyalar taklif etiladi. Natijalar shuni ko'rsatadiki, O'zbekiston kuchli infratuzilmaviy salohiyatga ega bo'lsa-da, umumiy o'rta ta'lim o'quvchilarida og'zaki nutq ko'nikmalarini samarali rivojlantirish uchun maqsadli pedagogik va siyosiy choralar zarur.

Kalit so'zlar *Raqamlashtirish, sun'iy intellekt asosidagi o'qitish, gapirish ko'nikmalari, ingliz tilini o'qitish, umumiy o'rta ta'lim, O'zbekiston, kommunikativ kompetensiya*

Цифровизация в общеобразовательных школах Узбекистана: преимущества и недостатки в контексте развития навыков говорения с помощью ИИ

Шодиева Насиба Рустамовна

Nshodiyeva714@gmail.com

Докторант (PhD),

Узбекский государственный университет

мировых языков

Аннотация *В Узбекистане наблюдается значительный прогресс в цифровизации системы среднего образования, обусловленный масштабными инвестициями в инфраструктуру и цифровые платформы. Однако, несмотря на достигнутые результаты, использование технологий искусственного интеллекта для развития навыков устной речи на английском языке остаётся ограниченным. В данной статье анализируется текущее состояние цифровизации средних школ, выявляются её преимущества, включая доступ к цифровым ресурсам и технологическую готовность, а также недостатки, такие как недостаточная подготовка учителей, отсутствие специализированных AI-инструментов и цифровое неравенство между городскими и сельскими школами. Основываясь на принципах коммуникативного подхода (CLT) и общеевропейской шкалы владения языком (CEFR), подчёркивается важность интерактивного обучения. Делается вывод о необходимости внедрения AI-технологий для повышения эффективности развития устной речи учащихся.*

Ключевые слова *Цифровизация, искусственный интеллект, навыки говорения, обучение английскому языку, среднее образование*

Introduction

Uzbekistan has actively implemented large-scale reforms aimed at modernizing its education system through digital transformation. The adoption of the "Digital Uzbekistan 2030" strategy significantly accelerated the integration of digital technologies into education (UNICEF, 2025). As a result, most secondary schools are now equipped with stable internet access and digital platforms such as Kundalik are widely used.

However, despite these achievements, the effective pedagogical application of technology remains limited. In particular, there is a lack of artificial intelligence (AI) tools specifically designed to support the development of English speaking skills. This issue is especially critical for upper secondary school students, who are expected to demonstrate communicative competence in academic and professional contexts (Council of Europe, 2020).

The aim of this article is to analyze the advantages and disadvantages of digitalization in Uzbekistan's secondary schools and to explore its potential for enhancing speaking skills through AI technologies.

Theoretical background

The study is based on the principles of Communicative Language Teaching (CLT), which emphasizes the development of communicative competence as the main objective of language learning. According to Canale and Swain (1980), communicative competence includes grammatical, sociolinguistic, discourse, and strategic components.

The Common European Framework of Reference for Languages (CEFR) defines language proficiency levels and highlights key aspects of speaking performance such as fluency, accuracy, and coherence (Council of Europe, 2020).

Additionally, sociocultural theory suggests that learning occurs through

interaction and mediation, where tools such as AI systems can support learners within their Zone of Proximal Development (Vygotsky, 1978; Lantolf & Thorne, 2006).

Krashen's Input Hypothesis emphasizes the importance of comprehensible input (Krashen, 1985), while subsequent theories underline the role of interaction and output in language acquisition. These perspectives collectively support the integration of AI technologies into language learning environments.

Research novelty and Contribution

This study contributes to the existing literature in three ways. First, it provides a context-specific analysis of digitalization in Uzbekistan's secondary education system, which remains underrepresented in international research. Second, it bridges the gap between general digitalization policies and their pedagogical application in language learning. Third, it proposes an applied framework for integrating AI technologies into speaking skills development, combining global research evidence with local educational conditions.

Methodology

This study employs a qualitative analytical approach based on the review of national policy documents, educational reports, and international research literature. Data sources include government reports, international organization publications, and peer-reviewed studies on AI in language learning.

The analysis is conducted through comparative and descriptive methods, focusing on identifying key advantages and limitations of digitalization in Uzbekistan's secondary schools. Particular attention is given to the alignment between technological infrastructure and pedagogical practices.

Digitalization in Secondary schools of Uzbekistan

Advantages

One of the major achievements of Uzbekistan's education system is the widespread availability of digital infrastructure. Most schools are equipped with internet access, which creates favorable conditions for the integration of digital technologies into teaching.

Furthermore, the introduction of digital platforms has improved access to educational materials and facilitated communication between teachers, students, and parents. Government initiatives also demonstrate a strong commitment to the development of digital and AI competencies among students.

Another important advantage is the potential for innovation. Successful pilot projects, such as the implementation of adaptive learning platforms, indicate that the country has the capacity to adopt advanced educational technologies.

Disadvantages

Despite these positive developments, several challenges remain. Firstly, there is a lack of specialized AI tools specifically designed for language learning, particularly for speaking skills development. Existing platforms mainly focus on administrative functions or general content delivery.

Secondly, many teachers are not sufficiently trained to integrate digital technologies into their teaching practices. This limits the effective use of available resources and reduces the potential impact of digitalization.

Another significant issue is the digital divide between urban and rural areas. While infrastructure may be available, differences in technical support, teacher expertise, and resource accessibility create inequalities in educational outcomes.

Discussion

The analysis shows that although Uzbekistan has achieved considerable success in building digital infrastructure, this alone is not sufficient to improve language learning outcomes. The absence of AI-based speaking

tools and the limited focus on communicative practice hinder the development of students' speaking competence.

International research demonstrates that AI technologies, such as chatbots and speech recognition systems, can significantly enhance speaking skills by providing interactive practice and immediate feedback. Therefore, integrating such technologies into the educational process could address existing gaps.

A critical interpretation of the findings suggests that the current model of digitalization in Uzbekistan reflects a technologically driven approach rather than a pedagogically integrated one. This imbalance may limit the long-term impact of digital reforms on learning outcomes.

Furthermore, without systematic integration of AI tools into classroom practice, digital infrastructure risks being underutilized. Therefore, the transition from access-based digitalization to outcome-based digitalization should be considered a strategic priority.

Limitations

This study is limited by its reliance on secondary data sources and the absence of empirical classroom-based observations. Future research should include experimental or quasi-experimental designs to measure the direct impact of AI-based tools on speaking skills development in Uzbekistan's educational context.

Implications and Recommendations for Uzbekistan

Policy-level recommendations

- *Strategic Expansion:* Integrate AI-driven language learning into the "Digital Uzbekistan 2030" strategy, launching a 2-year pilot program modeled after the Eduten initiative.
- *National Regulatory Framework:* Establish ethical and technical guidelines for AI use, ensuring data privacy, algorithmic fairness, and alignment with CEFR competency standards.

- *Strategic Prioritization:* Target Grades 10-11 initially to address high-stakes exam pressures and generate evidence-based methodologies for broader implementation.
- *Sustainable Investment:* Allocate dedicated funding for continuous platform evolution, teacher training, and technical support beyond basic infrastructure.

Institutional and Pedagogical recommendations

- *Adaptive Learning Systems:* Collaborate with international EdTech partners to develop an "Eduten for English" adaptive dialogue system for pilot testing in 15-20 schools.
- *Professional Development:* Implement 2-3 week intensive training for English teachers on AI-facilitation, ASR feedback interpretation, and ethical AI integration.
- *Corpus-Informed Teaching:* Utilize the Corpus of Contemporary American English (COCA) to develop materials that address specific L1-L2 interference errors in Uzbek learners.
- *Curriculum Rebalancing:* Increase classroom speaking time to 40–50% by delegating repetitive grammar drills to AI chatbots.

Future research agenda

1. *Efficacy Studies:* Conduct quasi-experimental research in secondary schools to measure the cost-effectiveness and linguistic impact of AI/ASR integration.
2. *Qualitative Analysis:* Investigate teacher/student perceptions and adoption barriers to ensure sustainable scaling within the national context.
3. *Longitudinal Impact:* Track long-term skill retention and student performance in standardized global assessments such as IELTS and TOEFL.

Conclusion

In conclusion, digitalization in Uzbekistan's secondary schools presents both significant opportunities and notable challenges. While the country has established a strong technological foundation, there is a need to shift focus from infrastructure to pedagogical application.

To fully realize the potential of digitalization, it is essential to develop AI-based language learning tools, improve teacher training, and ensure equal access to technology across all regions. Only through these measures can digital transformation effectively contribute to the development of students' speaking skills and overall communicative competence.

References:

1. Abdullayeva, I. (2025). Effectiveness of AI chatbots in promoting informal speaking proficiency and social pragmatic skills in Uzbekistan. *Computer-Assisted Language Learning Electronic Journal*, 17(2).
2. Canale, M., & Swain, M. (1980). Theoretical bases of communicative approaches to second language teaching and testing. *Applied Linguistics*, 1(1), 1–47.
3. Council of Europe. (2020). *Common European Framework of Reference for Languages: Learning, teaching, assessment*. Strasbourg: Council of Europe Publishing.
4. Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Longman.
5. Lantolf, J. P., & Thorne, S. L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford University Press.
6. Lyu, B., Lai, C., & Guo, J. (2024). Effectiveness of chatbots in improving language learning: A meta-analysis. *International Journal of Applied Linguistics*.

7. McCrocklin, S., & Levis, J. (2025). Automatic speech recognition and pronunciation learning. *Language Teaching*, 58(1).
8. UNICEF. (2025). *Giga initiative case study: Uzbekistan connectivity achievements*.
9. Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.