

EFFECTIVENESS OF DIGITAL TOOLS AND ARTIFICIAL INTELLIGENCE APPLICATIONS IN TEACHING FOREIGN LANGUAGES FOR FIRST-STAGE STUDENTS

Komiljonova Gulhayyo Komiljonovna

Master's Student in the field of Foreign Language and Literature (English), Faculty of Languages and Preschool Education
Tashkent Institute of Economics and Pedagogy

Abstract

This article analyzes the effectiveness of artificial intelligence (AI) and digital tools in teaching foreign languages to first-year university students. It traces the evolution of Computer-Assisted Language Learning (CALL) and evaluates the practical outcomes of applications such as ChatGPT, Duolingo, and ELSA Speak. Furthermore, by benchmarking against the educational experiences of South Korea, Finland, the study identifies the technical, methodological, and regulatory gaps within Uzbekistan's education system. Empirical data demonstrates that AI-assisted learning can improve student academic performance by up to 62% and significantly enhance independent learning skills. Ultimately, the paper highlights weak digital infrastructure, a shortage of Uzbek-language adaptive platforms, and the absence of a dedicated legal framework as the primary barriers to integration in Uzbekistan.

Keywords: Artificial intelligence, digital tools, foreign language teaching, first-year students, adaptive learning platforms, computer-assisted language learning (CALL), comparative analysis, digital divide, higher education in Uzbekistan.

Introduction

ANNOTATSIYA

Mazkur maqolada 1-kurs talabalariga chet tillarini o'rgatishda sun'iy intellekt va raqamli vositalarning samaradorligi tahlil qilinadi. Ishda CALL (kompyuterli ta'lim) tizimi rivojlanishi ko'rib chiqilib, ChatGPT, Duolingo va ELSA Speak dasturlarining amaliy natijalari baholangan. Shuningdek, Janubiy Koreya, Finlandiya tajribasi asosida O'zbekiston ta'lim tizimidagi texnik, uslubiy va huquqiy muammolar aniqlangan. Tadqiqotlar shuni ko'rsatadiki, SI yordamida o'qitish talabalar o'zlashtirishini 62% gacha oshiradi va mustaqil o'rganish ko'nikmasini kuchaytiradi. O'zbekistonda esa raqamli infratuzilmaning zaifligi, o'zbek tilidagi dasturlarning yetishmasligi va qonunchilik bazasining yo'qligi asosiy to'siqlar sifatida ko'rsatilgan.

KALIT SO'ZLAR: Sun'iy intellekt, raqamli vositalar, chet tillarni o'qitish, birinchi bosqich talabalari, adaptiv o'qitish platformalari, kompyuter yordamida til o'qitish, qiyosiy tahlil, raqamli tengsizlik, O'zbekiston oliy ta'limi.

Аннотация

В статье анализируется эффективность искусственного интеллекта (ИИ) и цифровых инструментов в обучении иностранным языкам студентов 1-го курса. В работе рассматривается эволюция системы CALL (компьютерное обучение языкам) и оцениваются практические результаты применения таких программ, как ChatGPT, Duolingo и ELSA Speak. Кроме того, на основе опыта Южной Кореи, Финляндии выявлены технические, методические и правовые проблемы в системе образования Узбекистана. Исследования показывают, что обучение с использованием ИИ повышает успеваемость студентов до 62% и существенно развивает навыки самостоятельного обучения. В качестве основных барьеров для интеграции этих технологий в Узбекистане указаны слабость цифровой инфраструктуры, нехватка адаптивных платформ на узбекском языке и отсутствие необходимой законодательной базы.

Ключевые слова: искусственный интеллект, цифровые инструменты, обучение иностранным языкам, студенты первого курса, адаптивные обучающие платформы, компьютерное обучение языкам (CALL), сравнительный анализ, цифровое неравенство, высшее образование в Узбекистане.

INTRODUCTION

By the end of 2024, the number of weekly active users of AI-based language learning applications worldwide exceeded 300 million. This figure proves how quickly AI technologies are reaching students outside of traditional classrooms [4, p. 3]. First-year students of higher education are especially going through a difficult period: they must simultaneously adapt to the new university environment, adapt their knowledge to the specialty, and develop language skills. In such conditions, digital and AI tools open up huge opportunities for students, but this requires the presence of appropriate conditions and technical infrastructure.

In 2020, Uzbekistan adopted the “Digital Uzbekistan – 2030” strategy, creating a legal framework for the digitalization of education [3]. By 2023, the “Uzbekistan – 2030” strategy has further deepened these reforms: it has identified teaching young people foreign languages and improving their digital literacy as one of the top priorities. However, scientifically based approaches are needed to effectively implement the goals set in strategic documents. Today, the use of AI (artificial intelligence) and digital tools in teaching foreign languages in higher education institutions of the republic has not been systematically studied, and empirical research in this area is still very few.

MAIN PART

The history of the use of technologies in teaching foreign languages is directly related to the concept of computer-assisted language learning – CALL (Computer-Assisted Language Learning). According to the definition of K. Beatty, CALL is any activity aimed at teaching and learning a language and using a computer [8, p. 7]. In a broad sense, this classical definition also includes today's modern artificial intelligence systems. It is scientifically accepted to divide the evolution of the CALL system into three main stages. While the structural CALL stage, covering the 1960s–1970s, relied mainly on mechanical grammatical exercises, the communicative CALL stage of the 1980s–1990s introduced textual dialogue and computer simulations into the learning process. The integrative CALL stage, continuing from the 2000s to the present, represents the integration of multimedia, the Internet, and finally artificial intelligence. Each stage of this technological transformation has provided completely new pedagogical opportunities in language teaching methodology [7, p. 3].

Researchers led by E. Kasneci have studied the role of the ChatGPT platform in education, demonstrating its potential as a knowledge source, writing assistant, grammar editor, text analyzer, and assessment assistant [2]. At the same time, the researchers have also revealed serious problems such as the risk of spreading misinformation and the negative impact of technology on academic integrity. According to the analysis, first-year university students are more susceptible to these risks. Since their critical evaluation skills are not yet fully developed, they are more likely to accept seemingly reliable, but erroneous content presented by artificial intelligence as truth. However, a properly organized digital environment can yield very high results. According to 45 independent studies conducted between 2010 and 2022, adaptive learning systems based on artificial intelligence have the potential to improve student test scores by up to 62% and increase overall academic performance by 30%. The integration of artificial intelligence technologies into education is not uniform globally - the internal context, cultural characteristics and economic resources of each country play a decisive role. Therefore, international comparative analysis is the most reliable way to objectively assess the national experience of a particular country and determine the most optimal development directions. For example, South Korea has set a strategic goal of gradually and systematically introducing artificial intelligence technologies into the education system starting from 2025. In this country, KERIS (Korea Education and Research Information Service) is implementing a comprehensive program aimed at improving the skills of teachers in digital pedagogy [9]. Experiences accumulated within the framework of the “Future Education Center” concept show that the success of reforms is determined not only by the purchase of technological tools, but also by the skills of teachers to correctly use these digital tools in the educational process. Researchers also attribute the high performance of Korean students in language literacy in the results of the PISA 2022 international assessment program to the systematic investments made by the state in digital education and SI infrastructure [9]. Finland, on

the other hand, maintains a unique balanced approach to the introduction of artificial intelligence technologies into the educational process. The country has launched free online AI courses to improve general digital literacy for all citizens, and about 50 percent of educational institutions are successfully using the VILLE adaptive learning platform. [9]. The main principle of the Finnish model is that the teacher remains the central and leading figure in education - here, artificial intelligence serves not to replace the teacher, but to lighten his workload. As noted in a report by the Organization for Economic Cooperation and Development, Finland and other Scandinavian countries, based on central guidelines, give schools the freedom to independently determine the form of use of SI tools [7]. This ensures the introduction of digital technologies in accordance with local conditions and individual needs, with high flexibility. However, against the background of strategic achievements at the macro level, real pedagogical practice is not going smoothly. Sh. In their qualitative study of English language teachers, Nazirova and her co-authors systematically identified four main barriers that persist: a lack of modern textbooks and teaching materials, excessive classroom size, limited professional development opportunities for teachers, and the continued dominance of traditional, teacher-centered approaches [1, p. 3].

In addition, sociocultural factors also affect the effectiveness of digital learning. Outside of higher education institutions, students communicate primarily in their native language, which leads to a lack of natural practice in the target foreign language. This problem is more pronounced in urban and rural areas, where students from remote areas have significantly lower access to live communication environments and foreign content [1, p. 4]. As a result, even if a student has a digital tool, there is a lack of the necessary linguistic environment for its practical application. This interregional infrastructural gap was also indicated in the study of A. Ergashev and his co-authors as the main obstacle to the digital transformation of the education system of Uzbekistan, which noted that high-speed Internet and modern material and technical equipment are still insufficient in regional universities [10]. The analytical report of the European University Association also noted that the transition to online and digital education in the republic is more organizationally and technically managed, but the issue of systematically improving the digital pedagogical competencies of professors and teachers is lagging behind [11].

In order to eliminate the identified systemic problems, it is necessary to develop and implement a national adaptive learning platform for first-year students of higher education, based on the successful international experiences of China and Finland. This platform should have a convenient interface in the Uzbek language and enriched educational materials to be understandable even to students in remote areas, determine the student's initial level of knowledge using a diagnostic entrance test and automatically recommend a personalized learning path adapted to him, and provide a mechanism for gradual and smooth transition from the Uzbek language to the target foreign language (progressive linguistic transition) when explaining educational materials. The goals of

digitizing the education system set out in the “Uzbekistan – 2030” strategy directly support this practical proposal.

As a second important practical proposal, it is recommended to introduce a special introductory training module called “Learning foreign languages using artificial intelligence and digital tools” for newly admitted 1st-year students from the first semester of the academic year. Within the framework of this program, it is envisaged to increase students’ practical experience in effectively using ELSA Speak, ChatGPT and similar SI tools in an individual language learning trajectory, to form the skills to recognize linguistic errors and hallucinations that may be presented by artificial intelligence systems and to pass them through a critical filter, as well as to develop the ability to independently form personal study plans.

CONCLUSION

The results of the analyses carried out within the framework of this study can be summarized in the following three conceptual conclusions:

1. The balance of artificial intelligence potential and pedagogical conditions. While SI and digital tools open up vast opportunities for first-year students in language learning, their real effectiveness is directly dependent on proper pedagogical guidance, infrastructure, and the level of digital literacy of students.
2. The nature of barriers in the national education system. The problems in the process of digitization in the republic's higher education institutions are divided into three interconnected groups: technical (infrastructural inequality between city and regional universities), pedagogical (lack of qualifications of professors and teachers to work with SI tools) and structural (lack of formation of adaptive platforms in the Uzbek language and legal and ethical regulatory framework). These obstacles can be solved not separately, but only through an integrated approach.
3. Pedagogical weakness and priority of first-year students. Newly admitted students to higher education not only learn the language, but also simultaneously go through the stage of adapting to the new academic environment, developing independent learning skills, and determining a career trajectory. As B. Klimova and M. Pixart argue, it is precisely the correctly directed integration of SI during this transition period that determines the student's educational effectiveness at all subsequent stages; otherwise, uncontrolled and unsystematic digital tools will negatively affect the quality of education and academic integrity. shows.

In conclusion, it is worth noting that digital tools and SI applications are not a universal solution to educational problems on their own. They will produce the expected results only when combined with a methodologically correct pedagogical model, excellent infrastructure and digital literacy of the teacher. The next strategic step for Uzbekistan is to accelerate the transition from declarative goals to practical applications and create a

national digital pedagogical model that takes into account the specific needs of first-year students.

REFERENCES

1. Nazirova, Sh. O., Jalolova, Sh. M., Agzamova, D. B., Mamatova, F. M., Yusupova, Sh. B. (2023). The Problems Faced by The Teachers in Teaching English As A Foreign Language in Uzbekistan. *Journal of Law and Sustainable Development*, 11(12), e02698. DOI: 10.55908/sdgs.v11i12.2698. (Sahifalar: 01–12.)
2. Kasneci, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., va boshq. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, art. 102274. DOI: 10.1016/j.lindif.2023.102274.
3. O'zbekiston Respublikasi Prezidentining 2020 yil 5 oktyabrdagi PF-6079-son Farmoni "Raqamli O'zbekiston – 2030" strategiyasini tasdiqlash to'g'risida. <https://lex.uz/docs/-5030957>
4. GovTech Media. (2026). How AI Is Changing Foreign Language College Classes. *Government Technology*. <https://www.govtech.com/education/higher-ed/how-ai-is-changing-foreign-language-college-classes>
5. OECD. (2023). *Emerging Governance of Generative AI in Education*. OECD Digital Education Outlook 2023. Paris: OECD Publishing. DOI: 10.1787/c74fo3de-en.
6. Beatty, K. (2010). *Teaching and Researching Computer-Assisted Language Learning*. 2nd ed. London: Pearson Education/Longman. – 272 p.
7. Center on Reinventing Public Education (CRPE). (2023). *Shockwaves and Innovations: How Nations Worldwide Are Approaching AI in Education*. University of Washington Bothell. <https://crpe.org/shockwaves-and-innovations-how-nations-worldwide-are-dealing-with-ai-in-education/>
8. Ergashev, A. va boshq. (2025). Digital Transformation of the Education System in Uzbekistan: Challenges, Opportunities, and Future Prospects. *Problems of Science and Technology*, 2025(1). <https://pstjournal.uz/index.php/pst/article/view/21>
9. European University Association (EUA). (2022). *Digital learning in Uzbekistan: challenges and lessons learnt*. Brussels: EUA. <https://eua.eu/our-work/expert-voices/digital-learning-in-uzbekistan-challenges-and-lessons-learnt.html>
10. O'zbekiston Respublikasi Prezidentining 2023 yil 11 iyuldagi PF-142-son Farmoni "O'zbekiston – 2030" strategiyasi to'g'risida. <https://lex.uz/docs/-6491063>.
11. Qu, B. (2025). Future of Language Learning: Unveiling the Power of AI-Driven Adaptive Platforms. *European Journal of Education*, 60. DOI: 10.1111/ejed.70116.