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AN INNOVATIVE AI-BASED MODEL FOR TEACHING FOREIGN LANGUAGES IN UZBEKISTAN'S DIGITAL EDUCATION ENVIRONMENT

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ANNOTATSIYA:

This article presents an innovative AI-based model for teaching foreign languages in the context of Uzbekistan's education system. The model consists of four core components: a personalized learning platform, a virtual assistant, an adaptive assessment system, and a set of teacher-support tools. Research findings indicate that the model can improve students' language skills by an average of 35% compared to traditional methods and reduce teacher workload by 25%.

In today's era of globalization, mastering foreign languages is a crucial factor not only for personal development but also for economic progress. Although a number of governmental decisions have been adopted in Uzbekistan to advance foreign language teaching, traditional instructional methods frequently encounter limitations in terms of effectiveness and individualized approaches. The advancement of artificial intelligence (AI) technologies is creating new opportunities in this domain. The purpose of this article is to present an AI-based innovative teaching model that is tailored to Uzbekistan's unique educational environment, is economically efficient, and is pedagogically sound, and to analyze the results of its practical testing.

The integration of artificial intelligence into the field of education is bringing about fundamental changes worldwide. Theoretical frameworks such as the "Zone of Proximal

Development" and "Technological Pedagogical Content Knowledge" (TPACK) reinforce the scientific foundation of individualized and adaptive learning facilitated through AI tools.

In the Uzbekistan context, this process is supported by state documents such as the "Uzbekistan 2030" Strategy and the "Concept for the Development of Artificial Intelligence Technologies until 2030." International practices (e.g., Duolingo, Khan Academy) and local initiatives (Ustoz AI, Mutolaa.uz) demonstrate the effectiveness of AI-based educational tools, underscoring the necessity of developing similar solutions in Uzbekistan.

The proposed innovative model consists of four interrelated and mutually complementary core components.

The first and foundational component is the Personalized Learning Platform. The platform continuously analyzes each learner's initial knowledge level, learning pace, interests, and areas of weakness, offering them an individualized learning trajectory and content. This addresses the shortcomings of the traditional "one-size-fits-all" approach, ensuring that every student progresses at their own pace and level.

The second key component is the Virtual Language Assistant (Chatbot). Powered by Natural Language Processing (NLP) technology, it enables learners to practice speech in a real communicative environment, engage in conversation, ask and answer questions, and receive grammatical guidance. This assistant addresses the problem of insufficient practice that arises from teachers not always being available.

The third component is the Adaptive Assessment System. Unlike traditional end-of-term examinations, this system continuously measures learners' knowledge and skills through progressively evolving tests. Based on the results obtained, the system automatically adjusts the content and difficulty level of subsequent lessons, making the learning process maximally effective.

The fourth component is the Teacher-Support Toolkit. These tools significantly automate time-consuming administrative tasks such as preparing lectures, creating and analyzing exercises, and checking written work. As a result, teachers are afforded more time to focus on pedagogical activities, working with students individually, and enhancing their own professional qualifications.

The effectiveness of the model was tested during a six-month experimental study conducted at three higher education institutions in Tashkent and Samarkand. The study involved 240 students majoring in foreign languages (primarily English), who were divided into control (traditional methods) and experimental (AI model) groups. Assessment was carried out through tests and questionnaires measuring speaking, listening comprehension, reading comprehension, and writing skills based on the CEFR standards.

The research results revealed the following positive changes: the language skills of learners in the experimental group improved by an average of 35% across all four skills. The most significant gain (a 42% increase) was recorded in speaking fluency, attributable to the virtual assistant. In addition, teacher workload was reduced by approximately 25% due to the

automation of lesson preparation and assessment processes, allowing them more time for individual work with students. Learners' motivation and independence in the learning process also increased considerably.

The results obtained confirm that the proposed AI-based model demonstrates higher effectiveness in the Uzbekistan context compared to traditional methods. The primary strength of the model lies in the fact that it not only introduces technology but also fundamentally transforms the teacher's role: from a "knowledge transmitter" to a "process facilitator," advisor, and motivator. However, the widespread implementation of the model is associated with a number of constraints and challenges: the need for stable internet access and modern devices (technical infrastructure), the digital literacy of learners and teachers, the alignment of AI-generated content with the local cultural and linguistic context, as well as pedagogical and ethical issues related to data privacy and maintaining the balance between human and machine interaction.

The research demonstrates that the four-component AI-based innovative model can significantly enhance the effectiveness of foreign language teaching in Uzbekistan's education system. It increases learner engagement and independence while simultaneously reducing the burden on teachers, enabling them to focus on their core pedagogical responsibilities. Successfully scaling and implementing the model requires consistent action along four interrelated directions.

First, piloting the model at educational institutions of varying levels (pilot projects) will allow it to be practically refined and errors to be addressed. Second, organizing specialized professional development courses for teachers who will use this technology is an essential prerequisite for their adaptation to the new role and for effective management of the platform. Third, establishing collaboration among educational institutions, IT companies, and linguist scholars for the creation of high-quality, localized content is vital to ensuring the model's substantive enrichment and contextual adaptability. Finally, as the fourth and decisive direction, developing a clear regulatory and legal framework encompassing the use of artificial intelligence in education, data protection, and ethical standards serves as a guarantee for the model's safe, transparent, and legally sound development.

In conclusion, these four directions — pilot testing, personnel training, strategic partnerships, and legislative work — form a system that is mutually reinforcing and complementary. Their balanced and consistent development may serve not only as evidence of this innovative model's practical effectiveness, but also as a model and foundation for digital transformation across Uzbekistan's entire education system.

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