

LANGUAGE TRANSFORMATION THROUGH INQUIRY-BASED LEARNING IN THE AGE OF AI

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Annotation. *In today's world, the essential goal of the education system is not only to transmit knowledge but also to develop students' critical thinking, creativity, communication, and problem-solving skills. In order to successfully fulfill these tasks, teachers must use modern technologies, approaches without using traditional teaching methods. Especially in lower courses at universities, the implementation of innovative teaching methods has become a current issue in order to improve the quality of education, the way that they speak and increase students' interest, their motivation in lessons.*

This article examines the effects of modern teaching technologies—including information and communication tools, artificial intelligence, game-based methods, inquiry-based learning on students' knowledge and skills. At the same time, it evaluates how these technologies affect the interests, psychological, and physical development of the student, who is the main actor in the educational process. Organizing the educational process in a student-centered way, increasing learners' motivation, and revealing each individual's potential are among the main advantages of inquiry-based learning in the era of AI. Teacher's role here is a facilitator. The main aim of this article is to demonstrate the effectiveness of applying modern technologies, how to use AI effectively in the classroom process and to show their impact on students' academic achievement.

Key words: *Artificial intelligence, inquiry-based, modern methods, student-centered, technologies, communication*

Introduction

Modern society requires high demands on students regarding their ability to comprehend learning materials. In connection with this situation, students' workload has significantly increased, and their motivation for learning has decreased. This problem is being addressed through the implementation of a step-by-step instructional technology: some students are provided with less material, while others receive more. In addition, even when the teacher presents the same amount of material, different levels of expectations regarding the understanding of this material arise. In this case, it is an essential requirement that all students must acquire at least a minimum basic level of knowledge and skills.

This technology reflects humanistic ideas in the methodology of teaching the foreign language, as the student is regarded as a unique individual—someone who strives to maximize their own qualities, is open to understanding the meaning of their work and accepting new experiences, seeks to comprehend life events and processes, and approaches decision-making in different situations responsibly (Əliyeva, 2020).

The rapid development of neural networks and large language models resulting in a new technological revolution has overused all spheres of life including education. Artificial intelligence (AI) creates new challenges related to the impact of technological

advancements on the labour market, lack of skills, ethical issues and a need to change approaches in education. AI cannot replace the teacher, but it can make them more productive and effective, automate and streamline routine tasks to make time for more important issues such as interaction with and motivation of students. Amid the rapid development of neural networks and large language models, which has led to a new technological revolution, all spheres of our lives—including education—are undergoing profound change. The advancement of artificial intelligence raises new challenges related to the impact of technology on the labor market, the need for workforce retraining, the resolution of ethical issues, and the transformation of teaching approaches. Artificial intelligence does not replace the teacher; rather, it enhances their productivity and efficiency, enables the automation of simple routine tasks, and frees up time for addressing the most important issues, personal interaction with students, and increasing their motivation. In addition, researchers propose ways to harness the potential of artificial intelligence in modern foreign language education to improve students' digital literacy, train them to use AI as a tool for solving professional tasks, and prepare specialists who meet the demands of the modern digital economy. There are some risks associated with the use of neural networks in the learning process and for this purpose measures is proposed to minimize them.

Main body

Artificial intelligence (AI) is at the center of attention of both Western and Eastern educational researchers as a phenomenon capable of radically influencing the processes of teaching and learning. The use of neural networks and the integration of such systems into educational technologies, on the one hand, represent a breakthrough in digital didactics; on the other hand, they may act as a disruptive factor, potentially reducing the level of students' critical thinking and creative independence.

In 2018, when ChatGPT emerged, it was primarily known among specialists in the field of information technology. At present, in academic discourse, artificial intelligence is understood as a cross-cutting technology that has become part of both everyday and professional life. AI tools are integrated into smartphone applications (for example, speech-to-text systems and text-to-speech tools), voice assistants (such as Alice and Siri), websites (including those designed for teachers), and computer programs (such as the presentation designer in PowerPoint and spell-checking tools in Word). The growing interest in neural networks is also evidenced by the increasing number of academic publications on this topic, including in the field of education. For instance, in 2022 alone, approximately 240,000 studies were published [AI Index Report, 2024, p. 31].

Teachers in secondary schools, higher education institutions, and private educational organizations have begun integrating AI tools to address a variety of tasks. For example, a section of Stanford University's education report [AI Index Report, 2024, p. 364] presents the results of two surveys conducted in the United States among 2,000 school teachers and 2,000 students aged 12–17 regarding the use of ChatGPT in the learning process. Most teachers reported using ChatGPT and believe that this tool has a positive impact on learning. Both students and teachers emphasized the importance of integrating AI into the educational process. Most commonly, teachers use neural networks to search for additional information on various topics, generate creative ideas, and plan lessons.

It should be noted that the state plays an important role as both an actor and a regulator in the use of neural networks. This is reflected in the development of policy documents such as the “National Strategy for the Development of Artificial Intelligence up to 2030,” whose authors note that language tools have advanced to such an extent in their creative capabilities that they can compose poems on a given topic and provide accurate and clear answers to test questions of varying levels of complexity, including those from educational programs.

AI technologies are also embedded in video surveillance systems (e.g., facial recognition). It is impossible to ignore these innovations, into which businesses and governments in many countries invest billions of dollars, as doing so would lead to lagging behind and a loss of competitiveness. For example, according to Stanford University’s 2024 AI report [AI Index Report, 2024, p. 247], private sector companies across various regions of the world, including the United States and China, invested \$95 billion in AI development in 2023 alone.

Researchers emphasize that the momentum in the development of didactics and methodology over the past decade encourages scholars, methodologists, and practicing teachers to pay close attention to technologies that can partially isolate learners from direct pedagogical influence while identifying ways to use digital assistants for the benefit of society. Nevertheless, issues related to the quality of generated texts remain relevant, prompting linguists to focus on both the precision and conciseness of formulations and the validity of interpretations. Ivakhnenko E.N. and Nikolsky V.S. emphasize that “traditional forms of assessing students’ abilities, such as essays or term papers, are losing their meaning, since ChatGPT produces an average-quality imitation of content on a given topic” [Ivakhnenko, Nikolsky, 2023, p. 21]. This raises questions about the criteria for evaluating AI-generated “creativity” and brings forward important ethical concerns.

Chatbots can generate textual content but cannot act as true creators; therefore, the issue of excessive AI use in homework can be mitigated by increasing the complexity of assigned tasks. Large language models reproduce and rephrase existing ideas rather than creating fundamentally new ones and cannot fully account for all the nuances embedded at the stage of pedagogical design. Thus, the human remains at the center of the digital model, guiding the machine according to the learner’s individual needs: “an individualized learning mode is ensured through innovative solutions, including learning management systems (LMS), online simulators, and synchronous and asynchronous learning formats” [Kicherova, 2024, p. 60].

Despite the data-centric nature of AI-based educational models, it is ultimately the teacher who controls the course of instruction. The question of the pedagogical community’s readiness to assume not only an educational role but also responsibility for mitigating the consequences of excessive AI integration remains open, particularly in foreign language education in higher education, where certain gaps can be observed. Innovative scholars propose original methodologies for student interaction with chatbots. For instance, Sysoev P.V., Filatov E.M., and Sorokin D.O. highlight the significant potential of AI in “teaching students to write creative texts in a foreign language based on evaluative feedback from artificial intelligence” [Sysoev, 2023, p. 49].

The results of another study are presented in the 2023 report by the British Council on the impact of AI tools on English language learning [Edmett A. et al., 2024,

p. 23]. Based on a literature review covering the past decade and a survey of 1,348 English language teachers from 118 countries, it was found that nearly half of them use AI-based mobile applications in their teaching practice.

For language learning, the most relevant AI tools are neural networks capable of generating texts and chatbots, as well as speech recognition software and, conversely, programs that convert written text into spoken language. Teachers most often turn to AI tools to create instructional materials and additional practice tasks, develop lesson plans, check students' work and assess their performance, as well as to carry out administrative tasks.

At the same time, nearly half of all respondents agreed that artificial intelligence tools can help learners improve all types of language skills: speaking, writing, reading, and listening.

Conclusion

Thus, artificial intelligence makes it possible to accelerate and optimize numerous processes and to process vast amounts of data within seconds. In performing routine tasks, humans undoubtedly lag behind machines and neural networks, and this gap will continue to widen in the future. Nevertheless, AI will not replace the teacher; rather, it will enhance their productivity and efficiency, enable the automation of simple routine tasks, and free up time for addressing complex issues, interacting with students, and increasing their motivation.

AI can also make learning more personalized. For example, AI-based tools can be used to create a digital tutor [Ahn et al., 2024, p. 346], allowing students to overcome psychological barriers, such as the fear of making mistakes and being criticized by a teacher in front of peers. A chatbot can serve as a conversational partner for practicing speaking skills or as a pen pal for developing writing skills.

Personalization is also achieved through the analysis of student data and the provision of reports, the collection of information about learner preferences, and the delivery of individualized support. In addition, learning materials can be adapted to students' needs by adjusting text difficulty levels, incorporating prompts, explaining unfamiliar vocabulary and complex grammatical structures through chatbots, paraphrasing unclear sentences, and more.

It should be noted that, overall, faculty members tend to be cautious about the widespread implementation of digital technologies, rightly pointing out their potential negative impact on the development of future professionals.

There revealed the following negative effects of excessive use of technologies

- Laziness, overreliance on AI, and dependence on external tools (e.g., proofreading texts, correcting grammatical errors).
- Naivety, lack of critical perception, and a decline in critical thinking skills.
- Satisfaction with average results and failure to realize one's creative potential.
- Explicit academic misconduct, including plagiarism.
- Indecisiveness and inability to take responsibility for final outcomes.

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