

ADVANTAGES AND DISADVANTAGES OF AI IN MODERN ESL CLASSES

Hajiyeva L.*PhD in Philology, senior lecturer,
Azerbaijan University of Languages*DOI: [10.5281/zenodo.16763524](https://doi.org/10.5281/zenodo.16763524)**Abstract**

The integration of artificial intelligence technologies introduces challenges to the educational landscape, mandating a multifaceted transformation. This transformation entails a deliberate shift towards convergent education, requiring the reassessment and renewal of educational content, alongside the modernization of professional curricula. These modifications are indispensable for cultivating an educational milieu that can foster an elevated quality of knowledge. While the deployment of AI in education represents a potent instrument for augmenting both the efficacy and accessibility of learning, it is imperative to establish a judicious equilibrium between technological integration and the enduring significance of human pedagogical intervention.

Keywords: artificial intelligence, modern education, feedback, the role of instructor, language bots.

In recent years, against the backdrop of active digitalization, we have observed the rapid development and widespread implementation of artificial intelligence (AI) technologies. AI is becoming a focal point of national strategies in various countries and a central topic at major international conferences.

Artificial intelligence (AI), as a field of modern science, is persistently permeating daily life, becoming an integral part of e-commerce, marketing, manufacturing, medicine, and the automotive industry. It also plays an increasingly significant role in education, including foreign language learning. [1, pp-47-49]

The future of higher education is inextricably linked with the development of new technologies and the computational power of intelligent machines. In this area, AI achievements open up new opportunities while also creating a series of challenges that could fundamentally alter the management and internal architecture of higher educational institutions.

As a field of scientific research, artificial intelligence began its development in the middle of the last century. Already in the 1930s, Alan Turing's works emerged, discussing the idea of creating programmable devices capable of solving specific tasks. In 1950, he published "Computing Machinery and Intelligence," where he proposed a test later named the "Turing Test." The generalized idea of this test is that a machine would be considered intelligent when a person, interacting with one machine and one human, cannot discern which interaction is with the machine.

The term "artificial intelligence" itself was coined by computer scientist John McCarthy at a conference at Dartmouth College in 1956. One could say that this conference served as the starting point for AI as a field of interdisciplinary research. The scientist used the phrase "artificial intelligence," which, in his opinion, "raised the idea like a flag" and defined the direction of the Dartmouth Summer Project. He defined AI as "the science and engineering of making intelligent machines, especially intelligent computer programs." [2]

Currently, there's a discernible trend in how supercomputers are influencing various aspects of our daily lives. Higher education stands at the epicenter of these profound changes, which bring forth both immense opportunities and risks. It's assumed that the relevance of a thorough investigation and analysis of these crucial

processes stems from the possibility of uncovering not only the positive impact of AI on the education system but also certain negative tendencies. These negative views consider technological progress as a solution or replacement for sound, human-value-driven pedagogical decisions with elementary computer algorithms. [3]

AI is penetrating universities through so-called assistive technologies, i.e., computer programs that enable text-to-speech and speech-to-text conversion, scaling, text prediction, spell checking, and search engine functionality. These examples are just some of the technologies initially developed with the aim of assisting people with disabilities or freeing employees from routine tasks. Subsequently, the use of these technological solutions expanded, and we now attribute them as general features across all personal computers and mobile devices. These technologies currently facilitate student learning interactions globally, expanding opportunities for education and the design of educational experiences. Furthermore, artificial intelligence is continuously improving tools used daily: from internet search engines, smartphone functions, and applications to public transport and household appliances.

Thus, an analysis of domestic and foreign scientific literature has shown that the most significant disadvantages of using AI in the university educational process include the following: – AI lacks purely human qualities – morality, the ability to empathize, sympathize, provide friendly support, etc.; – absence of intuitively correct reactions to various life situations; – there is a potential possibility of using AI for collecting personal information that can be applied against a person's will, and others. [4]

Despite a number of shortcomings, AI should be perceived as an innovative technology within the learning system. However, as with any technical innovation, it should be remembered that the purpose of "smart machines" is to assist humans, not to negate human pedagogical interaction or destroy the meticulously built environment for personal growth and education created in universities. As the renowned pedagogical researcher A. Schleicher noted, innovations in education are not merely a matter of introducing new technologies into the learning process; they involve changing approaches

to learning in such a way that students acquire the competencies and skills necessary for their development in a competitive global economy [5, pp. 23–25].

In this regard, scientific interest in artificial intelligence as a potentially effective direction for the development of digital technologies in education is constantly growing. However, to date, there is no clear definition of this phenomenon in scientific research from the perspective of its use in the higher education process. It is customary to describe it through a list of currently available technical solutions, technologies, and learning tools, as well as its functions in modeling human intelligence and the type of tasks it solves.

We believe that artificial intelligence in the higher education system is one of the digital learning technologies aiming to replicate the workings of the human brain. Therefore, it's capable of performing simple logical tasks, interacting with students (including in foreign languages), modeling various professional situations, processing large volumes of information, and reproducing requested data in the shortest possible time. This can significantly help participants in the educational process with routine work.

Speaking about artificial intelligence in education, we'd like to focus in more detail on the implementation of AI in foreign language learning, leveraging the capabilities of neural networks.[6]

Despite the identified drawbacks, the advantages of AI in foreign language learning are undeniable:

- Expanding opportunities for productive foreign language communication.
- Considering the individual characteristics and interests of students, as well as their proficiency level in a foreign language.
- Motivating students to learn foreign languages and linguistic phenomena, among other benefits.

According to research data from major corporations such as Intellias, Alphary, and Microsoft, which are working on the development and implementation of AI, artificial intelligence algorithms possess great potential for the advancement of e-learning in all spheres of life. International corporations are already using AI today to teach their employees foreign languages. In large universities with modern material and technical resources, for example, leading technical universities or programs focused on training transport engineers, students can also use AI to learn foreign languages anytime, anywhere. After some time, traditional schools, colleges, and universities will be able to incorporate AI-assisted language learning into their curricula to diversify and expand student opportunities.

The benefits of integrating artificial intelligence into e-learning can be astonishing.[7] Let's illustrate this point with the following examples:

1. Individualization and Personalization of Education. It's generally understood that in a group of 15–25 students, it's quite challenging for a foreign language instructor to find the right approach for everyone. However, by leveraging artificial intelligence in learning a new language, the needs of each individual student can be taken into account. With AI integrated into the educational process, instructors will be able to collect gigabytes of data about their students, including

their interests, abilities, and so on. When analyzed, this data can pave the way for personalized education.

Today, numerous AI-powered language learning platforms exist, allowing students to work at their own pace, study language material, identify areas where they face difficulties, engage in tasks they excel at, appeal to their interests, and consider their cultural background. This data can also enable instructors to understand what's happening in their students' minds and predict their future results [8].

2. Providing Instant Feedback. When learning foreign languages with the help of artificial intelligence, feedback will be swift. When students put in a lot of effort for an important test, waiting for results can be stressful. A week later, when they see their mistakes, they might no longer recall how or why they made them. An AI-powered language learning platform, however, can automatically assess test results and even analyze essays immediately after students submit them, pointing out errors and suggesting ways to avoid them in the future. This allows students to take immediate action to correct their mistakes and likely perform better on future assessments. For instructors, AI-powered language learning solutions can pinpoint weaknesses in their curriculum and help them see what can be improved in lectures or practical assignments, which aspects of the language are most challenging for students, and which students require additional guidance.

3. Eliminating Fear of Failure. Making mistakes is normal, as people learn from them. But when students make mistakes, they often receive low grades, or when they don't answer questions, they frequently experience discomfort or even fear of what the instructor might say. AI in language learning won't criticize or humiliate students; it can assess learners without judging them.

4. Changing the Role of the Instructor. AI won't force instructors out of universities, but it will redefine their role. Instead of being the "sage on the stage," the instructor will become a guide to knowledge, a consultant, and an assistant. This means technology will handle the instructors' daily, routine duties, freeing up their time for communication and supporting students. With the advent of AI-assisted foreign language learning, instructors will have more time to coordinate the learning process and mentor students. The most technically savvy instructors may even try their hand as data specialists, analyzing and utilizing data obtained during the learning process.

5. Conscious Approach to Learning. Thanks to AI used for foreign language learning, students can study from anywhere in the world at their own pace, set their own goals, and follow an individualized learning plan. Instructors won't have to cover the same material every year due to the personalized approach that varies from student to student. Furthermore, AI will help develop engaging games, quizzes, and other educational and research activities that combine learning programs with students' interests.

Next, let's focus on the possible directions for using artificial intelligence in foreign language learning.[9]

Learning a new language is a challenging but rewarding and highly sought-after endeavor. New acquaintances, business opportunities, travel, and access to vast amounts of information are just some of the benefits. But can one truly grasp the nuances of a language without conversing with native speakers? Artificial intelligence claims it's possible. Here are just a few of the technologies made feasible with AI:

1. **Language Bots.** Chatbots have come a long way from often useless "dummies" to intelligent assistants, whose conversations are sometimes indistinguishable from talking to an educated person with a good sense of humor. After their functionality became more sophisticated, chatbots began to be used in foreign language learning. Students can engage in dialogue with a bot at any time and learn through foreign language communication, which is often severely lacking in real-world settings. AI-powered chatbots provide individualized responses to the interlocutor's queries and can even assess their language skills or offer advice on what they need to improve. Importantly, the student does not experience the stiffness and fear of making mistakes as they might in a conversation with a real teacher. Today, there are many widely used chatbots available online, including A.L.I.C.E., Mitsuku, Splotchy, Cleverbot, Existor, Elbot, iGod, and others. From our point of view, linguistic communication with such chatbots is beneficial for overcoming the language barrier and providing opportunities for unlimited foreign language interaction.

2. **Personalized Textbooks.** Since people learn differently and at varying speeds, it's unreasonable to expect that using the same textbook will be effective for all students. This is why personalized textbooks are highly sought after. When AI can assess a student's preparedness level and learning pace, it can adapt to their needs and provide them with the necessary educational materials.

Customizing textbooks can also be beneficial for instructors. If instructors could upload their educational programs to an artificial intelligence system, the system would be able to generate textbooks tailored for a specific educational institution, course, or even a group of students.

3. **Artificial Intelligence Learning Algorithms.** There are hundreds of algorithms combining artificial intelligence and foreign language learning that help computers become smarter. Some of these, such as "Decision Tree," "K-means," and "Dimensionality Reduction Algorithms," can be successfully applied in education. "Decision Tree" is used to help AI systems make informed decisions based on data that needs to be classified. AI needs to think quickly, and "Dimensionality Reduction Algorithms" can help when there is too much data.

"Language Processing," "Phrase Extraction," and "Pointwise Mutual Information" are also used to help AI become a valuable tool for language learning. Lan-

guage processing allows machines to read and understand human language; phrase extraction can be used for information retrieval, document classification, and solving language generation problems.

4. **Intellias's Experience with AI in Foreign Language Learning.** When it comes to the implementation of artificial intelligence in language learning, the German IT company Intellias is considered a leader in this process. In collaboration with Alphary, they created a set of intelligent applications for Android, iOS, and web-based language learning that help students master English vocabulary. These applications use the Oxford Learner's Dictionaries and an integrated AI called FeeBu (Feedback Butterfly) to mimic the behavior of an English language teacher, providing automated intelligent feedback.

It can be confidently stated that once artificial intelligence and education fully merge, the tasks of acquiring learning experiences will reach a new level. The personalization of learning, instant feedback, and adaptation to individual needs will significantly impact student development. Artificial intelligence technologies will also enhance the effectiveness of foreign language learning through language bots, machine translation, and personalized textbooks.

References

1. Luger G.F. Artificial intelligence: structures and strategies for complex problem solving. Boston: Pearson Education, 2009.
2. Childs M. John McCarthy: Computer Scientist Known as the Father of AI. *The Independent*, 2011
3. Russell S.J., Norvig P. Artificial Intelligence: a Modern Approach. Upper Saddle River, 2010. 1152 p.
4. Pasquale F. The Black Box Society. The Secret Algorithms That Control Money and Information. Cambridge, 2015. 320 p.
5. Schleicher A. Schools for 21st-Century Learners: Strong Leaders, Confident Teachers, Innovative Approaches. OECD Publishing, 2015. 80 p. <http://dx.doi.org/10.1787/9789264231191-en>.
6. Есионова Е.Ю. Искусственный интеллект как альтернативный ресурс изучения иностранного языка. *Гуманитарные и социальные науки*. 2019; № 2: 155–166.
7. Maderer J. Artificial Intelligence Course Creates AI Teaching Assistant [Электронный ресурс] // Georgia Tech News Center. URL: <http://www.news.gatech.edu/2016/05/09/artificial-intelligence-course-creates-ai-teaching-assistant> (дата обращения: 18.10.2020).
8. Gardner H. Multiple Intelligences. New Horizons, completely revised and updated. New York: Basic Book, 2006.
9. Костюнина С.А. Роль искусственного интеллекта в изучении иностранных языков. *Вестник науки*. 2022; №2 (47): Available at: <https://cyberleninka.ru/article/n/roliskusstvennogo-intellekta-v-izuchenii-inostrannyh-yazykov>