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**Iryna ZVARUCH**

Doctor of Pedagogical Sciences,  
Professor, Professor of the Department of  
Foreign Philology and Translation of Trade  
and Marketing Faculty of Kyiv State  
University of Trade and Economics,  
Kyiv, Ukraine

ORCID: 0000-0003-0715-9551

*e-mail: Iryna.zvarych7@gmail.com*

## **ARTIFICIAL INTELLIGENCE OF LEARNING THE FOREIGN LANGUAGE**

**Abstract.** The article deals with the systematic approach as one of the studying methods the primary discipline in higher educational institutions; the concept of artificial intelligence is clarified; the importance of artificial intelligence is highlighted, in particular: ethics, creativity of thinking, transparency; attention is focused on Grammarly – a service that helps in writing texts in English and allows you to make them more effective and clearer; the negative and dangerous influence of artificial intelligence on the study of academic disciplines is investigated, because it poses a problem, and students can rely on artificial intelligence and not learn how to solve life's problems today.

In the process of learning a foreign language, conversational artificial intelligence is widely used, which to some extent changes the role of the teacher in communicating with students. Such types of artificial intelligence as chatbots and virtual tutors, which offer quick help to students in solving questions with home assignments and writing essays, relying on independent processing of the material, can lead to superficial assimilation of this subject educational material. These methods are new and can be called revolutionary in the learning the of educational material. Thanks to natural language processing and machine learning algorithms, these chatbots and virtual tutors provide instant and personalized support to students by answering their questions as they learn a subject.

The artificial intelligence-driven learning is to some extent disrupting traditional approaches to learning in higher education institutions and shaping the future of new learning technologies in the field of education. Artificial intelligence in education predicts vast data sets using sophisticated algorithms, providing a personalized and tailored learning experience for students. They get personalized learning, instant feedback, and access to exciting technologies like augmented and virtual reality in education.

**Key words:** artificial intelligence, learning, foreign language, ethics, creativity, influence, task performance, studying, problem, educational subject.

**Problem setting.** Today, when all of Ukraine is on rusher fire, and among the destroyed educational institutions you can find smashed and broken computers and other educational gadgets, Ukrainian students are studying and making an attempt to

find and deploy new methods of learning a foreign language. Among such methods is artificial intelligence in foreign language learning.

The artificial intelligence-driven learning is to some extent disrupting traditional approaches to learning in higher education institutions and shaping the future of new learning technologies in the field of education. Artificial intelligence in education predicts vast data sets using sophisticated algorithms, providing a personalized and tailored learning experience for students. They get personalized learning, instant feedback, and access to exciting technologies like augmented and virtual reality in education.

Artificial intelligence focuses on the development of intelligent machines that can perform tasks that normally require human intelligence. This branch of computer science designs and studies intelligent machines that are widely used in industry, government, and science. Notable applications include advanced web search engines (e.g., Google Search), recommendation systems used by YouTube, Amazon, and Netflix, human language understanding (e.g., Google Assistant, Siri, and Alexa), and self-driving cars such as Waymo, and generative and creative tools such as ChatGPT and AI art, as well as superhuman gaming and analysis of intellectual strategy games such as chess.

**The purpose and objectives of the study.** To consider a systematic approach as one studying elementary disciplines methods in higher educational institutions; to clarify the concept of artificial intelligence; to highlight the significance of artificial intelligence, in particular: ethics, creative thinking, transparency; to focus on Grammarly - a service that helps in writing texts in English and allows you to make them more effective and clear; to investigate the negative and dangerous impact of artificial intelligence on the study of academic disciplines, because it poses a problem, since students can rely on artificial intelligence and not learn to solve today's life problems.

**Analysis of basic research and publications.** Artificial intelligence is studied by both Ukrainian and foreign researchers, in particular M. M. Glive and O. V. Oletsky consider artificial intelligence as an approximation to natural intelligence, and Kellner notes the negative impact of artificial intelligence on the study of the academic discipline by students.

**Presentation of the main tasks.** Despite the fact that there is a full-scale war, students quickly orient themselves in their professional activities and they make an attempt to find new approaches to learning a foreign language that will help improve the quality of learning, and teachers offer their methods for using artificial intelligence in the educational process to increase the level of students' knowledge. The use of artificial intelligence in education to improve learning, help teachers stimulate the study of the academic discipline is an interesting exciting process and at the same time a little dangerous. In order to communicate about artificial intelligence in education, it is necessary to first move away from imaginary science fiction scenarios of computers

and robots teaching students software material, changing the methods and approaches to teaching the educational discipline of teachers, reducing the professional activity of teachers. Teachers, their communication with students cannot be replaced by any computers and robots in the learning process. This technical equipment can only be an auxiliary tool in the process of studying the educational discipline, which will make the educational material more accessible for students to perceive.

Scientists M. M. Glive and O. V. Oletsky argue that artificial intelligence in one sense or another should approach natural intelligence and in some cases be used instead of it; just as, for example, artificial kidneys work instead of natural ones [1]. In their opinion, the more situations in which artificial intelligent systems can replace people, the more intelligent these systems will be considered. Of course, artificial intelligence is important in the process of mastering an educational subject.

Despite the fact that there is a full-scale war, students are quickly orienting themselves in their professional activities and they are trying to find new approaches to learning a foreign language that will help improve the quality of learning, and teachers are offering their methods for using artificial intelligence in the educational process to increase the level of students' knowledge. Using artificial intelligence in education to improve learning, helping teachers stimulate the study of an academic discipline is an interesting and exciting process and at the same time a little dangerous. In order to talk about artificial intelligence in education, you must first move away from imaginary science fiction scenarios of computers and robots teaching students software material, changing the methods and approaches to teaching the academic discipline of teachers, reducing the professional activity of teachers. Teachers, their communication with students cannot be replaced by any computers and robots in the learning process. This technical equipment can only be an auxiliary tool in the process of studying the academic discipline, which will make the educational material more accessible for students to perceive.

In the process of mastering a foreign language, conversational artificial intelligence is widely used, which to some extent changes the role of the teacher in communicating with students. It is precisely such varieties of artificial intelligence as chatbots and virtual tutors, which offer quick help to students in solving homework problems and writing written works, relying on independent study of the material, can lead to superficial mastery of the educational material in the discipline. These methods are new and can be called revolutionary in the study of educational material. Thanks to natural language processing and machine learning algorithms, these chatbots and virtual tutors provide instant and personalized support to students, answering their questions in the process of studying the educational discipline. Creating an interactive and engaging learning experience allows students to more easily perceive concepts and better remember information. Artificial intelligence has become an integral part of the educational process, in particular in learning a foreign language. It changes students'

visions of studying the academic discipline and opens up new opportunities for them in mastering grammatical structures and lexical units.

The artificial intelligence system easily adapts to the individual needs of students in studying the primary subject, and it can also be oriented to gaps in the study of educational material, in particular strengths and weaknesses. It is able to assess the students' level of knowledge and provide instructions in studying the subject, in particular in foreign language learning. The artificial intelligence system in foreign language learning is used to plan courses on checking grammar and spelling. A well-known example is Grammarly in language learning.

In 2009, the Grammarly service was created to help students and employees of various companies write texts in English. No one imagined that this startup would be widely used to learn different languages and it would bring the huge income. Today, this company has offices in San Francisco, New York, Vancouver and Kyiv. And its product is used daily by 30 million users and this figure continues to grow. This artificial intelligence startup was created in Ukraine. It can imitate the voice of students, help in writing creative works in a foreign language. The service helps students, educators and employees of various professions to communicate in English more actively and convey their thoughts both in writing and orally, as they intended and want to convey to the interlocutor.

Grammarly is a service that helps in writing texts in English and allows you to make them more effective and clear. Such an artificial intelligence system analyzes language, corrects errors in writing a creative task, and indicates when to restructure a sentence if necessary, or to supplement or rephrase it [3].

By checking the self-written work in English using the Grammarly program, we will make sure of the correctness of the corrected errors and the search for correctly selected lexical units. Artificial intelligence program technologies penetrate our everyday life and continue to develop. It is by using artificial intelligence that we are convinced that this is a new method of studying academic disciplines, in particular a foreign language, using the latest technologies. Artificial intelligence can be used to study all academic disciplines. It penetrates the sphere of everyday life and continues to revolutionize our personal and professional lives. The use of artificial intelligence helps students keep up with modern trends and make the performance of their tasks more effective. It is important that artificial intelligence can help in solving modern world problems. When a specialist holds a high position and manages a project, but does not know a foreign language very well, you can use artificial intelligence in writing a report on the implementation of such a project.

In the United States, experts from the federal government, non-profit sectors, and industry have come together to develop and implement a government department (GAO – Government Accountability Office) that provides information on the management, data collection, effectiveness, and monitoring of artificial intelligence.

This department ensures accountability and is responsible for the use of artificial intelligence in government programs and processes [3].

When studying artificial intelligence, it should be noted that the use of certain technologies has changed the lifestyle of both students and teachers, in particular in the educational process, they have changed the methods and approaches to teaching and learning a foreign language. That is why the use of artificial intelligence can affect the educational process and be destructive, because machines are created to look and behave like students, so they penetrate deeply into the educational process and can change the relationship between students and teachers. Since artificial intelligence has advantages and disadvantages in the study of an academic discipline, it is worth mentioning the human factors that belong to students and teachers, in particular: *ethics, creative thinking, transparency*.

Let us consider the *ethics of artificial intelligence* as a system of moral principles and methods aimed at the intelligence development and its responsible use in the educational process. Since ethics is a human factor, and artificial intelligence is an integral part of services in the study of an educational discipline by young people, organizations and developers are beginning to develop codes of ethics for artificial intelligence. It can be highlighted that ethics should be one of the main factors for any company or organization that wants to update or implement artificial intelligence technology, and it has its advantages and disadvantages.

The disadvantages of artificial intelligence include creativity of thinking, since this is artificial intelligence and it refers to machines, therefore special programs are being developed for varying the work complexity. Creativity of thinking reflects the mental activity of thinking people, therefore, an artificial intelligence system is not equipped with the mental activity, like humans, to recognize relevant changes in the context of programs or data that may affect the reliability of predictive assumptions. Thus, an artificial intelligence system may unknowingly apply the programmed methodology to assess the level of knowledge of students in an inappropriate way, which will lead to an error.

*Transparency in artificial intelligence* refers to what information is collected or used, what programs are programmed and entered into the tasks of intelligence.

Students try to establish relationships with inanimate objects and treat them as if they were people, for example, with dolls of different ages and types. They talk to them because they are the tool that gives students exactly what they need: communication on their favorite topics and interests and preferences. Thus, artificial intelligence will perfectly figure out what exactly the student-partner needs, what he wants to hear and will give an answer: in particular, solving tasks of varying complexity, writing a work and a scientific report in a foreign language and, if possible, an abstract.

The scientist Kellner is the founder of the Super Human Society, who brings together experts from various professions to address the challenges and opportunities

associated with artificial intelligence and other emerging technologies. Kellner noted that students are giving human characteristics to inanimate objects, such as games and toys, and establishing connections that can surpass their human relationships [5]. However, this approach can be dangerous because it poses a problem, as students may rely on artificial intelligence and not learn how to solve problems that arise in the learning process, including in solving homework and in communicating with peers and teachers. Thus, it is worth artificial intelligence to help students, including gifted students, in solving tasks and, of course, in communicating. It is important for artificial intelligence to help students develop not only learning skills, but also life skills that facilitate interaction with people, and not completely replace communication with them, because no machine can replace live communication and the expression of individual emotions of teachers.

The level of knowledge quality that students receive in higher education institutions shows some progress, but many also attend additional courses to improve and increase their own knowledge level. Thus, the education system has the potential to be very effective and adapted to the individual abilities of students and the using the artificial intelligence. Students who have difficulties in learning academic disciplines, in particular a foreign language, have a chance to improve the quality of their own knowledge, using the potential of artificial intelligence.

The founder of computer science, Alan Turing, noted in 1947 that by the end of the century the use of words and the general informed opinion will change so much that it will be possible to talk about machine thinking, despite the fact that this will contradict reality. Alan Turing was right, because today we can say that due to the nature of discovery, when previously improbable things become reality and the old give way to the new, new methods of learning are taking their place, including learning a foreign language through artificial intelligence [2].

The phrase “artificial intelligence” was first used in the 1950s, although the idea of thinking machines dates back centuries, including in mythology and legend. Since then, the technology of artificial intelligence has changed and advanced, as have its applications. The study of neural networks dominated the history of artificial intelligence from the 1950s to the 1970s; machine learning programs began to appear in the next three decades, from the 1980s to the 2010s [4].

Continuous to development the computer technology and new learning tools, the growing interest in machine learning and its widespread use, the study of academic disciplines has become more interesting and meaningful. Currently, scientists are working to improve artificial intelligence to think and act like humans in solving more complex tasks. Thus, artificial intelligence is software that allows technology to understand, make decisions, and solve problems like humans, given certain data. Artificial intelligence can perform tasks that save a person time - it can be something as simple as asking for the weather forecast or skipping a song from a playlist.

Using artificial intelligence opens the endless opportunities for students' research and various scientific discoveries. Making technology fully reveal its potential also means testing its capabilities. The imagination of students is limitless, and there are many concepts in this field that can radically change the course of the future growing generation. The widespread use of artificial intelligence can be exciting or worrying about the future of humanity. Whether students perceive the development of artificial intelligence as a positive or negative aspect of humanity's rapidly evolving achievements, and considering the ways in which it can be developed or the obstacles to some aspects of it can be intellectually satisfying.

Interestingly, trying to make AI act and think like students reveals who they are now and who they want to be. If a particular technology is to act like students, it is important to first get to know those among them whom you know. As a result, as a teacher, you begin to understand students while simultaneously developing their critical thinking skills and solving important problems of today.

Students who choose to study and use artificial intelligence, that opens up significant opportunities for their career growth in machine learning, engineering, or research. Perhaps they are interested in robotics or enjoy working with numbers and data, then artificial intelligence can help them find new tasks. If students are interested in further researching a scientific topic and contributing new findings to it, then artificial intelligence will help find new sources and references to them. Using artificial intelligence is a profitable solution for students and teachers. On the one hand, it helps students improve the level of quality of knowledge or close gaps in the study of an academic discipline, and on the other hand, it helps to evaluate the level of quality of acquired knowledge. The knowledge gained gives students an understanding of the latest achievements that are changing everyday life in society.

One of the benefits that students immediately feel when they start using artificial intelligence is the efficiency it offers when applying it to daily tasks. Artificial intelligence makes life easier for both students and teachers. For example, when you write an email, Gmail shows relevant suggestions for completing sentences, evaluating the content. Various digital calendars are available that help send reminders to remember everything you have set as a task. You may have even been surprised when an event you had scheduled appeared on your Apple calendar at a specific time and place, but you didn't specify it there. Artificial intelligence technology can process large amounts of data that would otherwise be tedious for students and teachers, leading to possible errors. Thus, automating repetitive tasks will save both students and teachers a lot of time and energy that they can spend on more meaningful and creative work, since achieving academic success is an important outcome in education. By analyzing this data, artificial intelligence-based technologies can help create personalized learning for students, which can lead to a decrease in their chances of dropping out of higher education institutions. In addition, it can be an informative source for teachers to understand the preferences and abilities of their students. With

this information, teachers can optimize the teaching of the academic discipline accordingly. Higher education institutions can also benefit from chatbots answering frequently asked questions from students. This way, teachers can focus on their academic work, while students can save time on homework and focus on answering difficult questions to better master the subject. Artificial intelligence can help students with disabilities with daily tasks or monitor their health using voice recognition. Voice assistance is useful because it helps them communicate and understand their surroundings. Artificial intelligence can be useful not only for saving time and avoiding misunderstandings between students and teachers that sometimes arise during the learning process, but also for solving real-life problems.

Summarizing, artificial intelligence has the potential to positively impact the world in several ways. Through applications in healthcare, artificial intelligence can improve the accuracy and speed of disease diagnosis, help identify patterns that may indicate a patient is at risk for certain conditions, and lead to earlier diagnosis and treatment that can improve patient outcomes and potentially save lives. In education, artificial intelligence can personalize the learning experience for students, improving learning outcomes and making education more accessible to a wider range of students. In transportation, artificial intelligence can improve the efficiency and safety of transportation systems, contributing to a better experience for travelers and fewer road accidents. In agriculture, artificial intelligence can optimize crop yields and improve the efficiency of farming methods, helping to feed the world's growing population and reduce the environmental impact of agriculture. In the field of environmental protection, artificial intelligence can be used to monitor and protect the environment, helping to conserve natural resources and protect biodiversity. Finally, in disaster response, artificial intelligence can quickly analyze data and identify patterns that can help first responders respond more effectively to natural disasters and other emergencies, ultimately saving lives and reducing the impact of the disaster on the affected community.

**Conclusion and perspectives of further research.** Based on the above, we draw the following conclusions: learning guided by artificial intelligence, to some extent, destroys traditional approaches to learning in higher education institutions and shapes future new learning technologies in the field of education. Artificial intelligence has a positive impact on students and has good results in communication, learning grammar and language skills.

As artificial intelligence continues to develop, it is likely that it will have an even greater transformative impact on society and the way we live and work. Artificial intelligence in education predicts huge data sets using complex algorithms, providing individual and adapted learning experiences for students. The use of artificial intelligence contributes to individual learning, instant feedback and access to exciting technologies such as augmented and virtual reality in education. It is worth creating and using intelligent robots and other automated systems that perform dangerous and

complex tasks, in particular, helping students in learning academic disciplines, including mastering a foreign language. They receive personalized learning, instant feedback, and access to exciting technologies such as augmented and virtual reality in education.

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## ШТУЧНИЙ ІНТЕЛЕКТ У ВИВЧЕННІ ІНОЗЕМНОЇ МОВИ

**Ірина ЗВАРИЧ**

доктор педагогічних наук, професор,  
професор кафедри іноземної філології та перекладу  
Київського державного торговельно-економічного університету  
м. Київ, Україна  
ORCID: 0000-0003-0715-9551  
*e-mail: Iryna.zvarych7@gmail.com*

**Анотація.** У статті розглядається системний підхід, як один із методів вивчення начальних дисциплін у закладах вищої освіти; з'ясовуються поняття штучний інтелект; висвітлено значимість штучного інтелекту, зокрема: *етику, креативність мислення, прозорість*; зосереджено увагу на Grammarly – сервісі, який допомагає у написанні текстів англійською мовою і дозволяє їх робити ефективнішими та чіткішими; досліджено негативний і небезпечний вплив штучного інтелекту на вивчення навчальних дисциплін, зокрема іноземної мови, бо він становить проблему, оскільки здобувачі освіти можуть покладатися на штучний інтелект і не навчитися вирішувати життєві проблеми сьогодення. Штучний інтелект позитивно впливає на здобувачів вищої освіти і має хороші результати у спілкуванні, вивченні граматики та мовних одиниць, тому варто створювати і використовувати розумних роботів та інші автоматизовані системи, які виконують небезпечні та складні завдання, зокрема допомагатимуть здобувачам освіти у вивченні навчальних дисциплін, в тому числі оволодінні іноземною мовою.

**Ключові слова:** штучний інтелект, навчання, іноземна мова, етика, креативність, вплив, виконання завдань, вивчення, проблема, навчальна дисципліна.

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