THE USE OF ARTIFICIAL INTELLIGENCE IN FOREIGN LANGUAGE CLASSES IN AN INSTITUTION WITH SPECIFIC LEARNING CONDITIONS

Abstract. Scientific progress has covered the entire life of society, and its highest manifestation today is the creation of artificial intelligence (AI). Pattern recognition methods using artificial intelligence are used in medicine, manufacturing, diagnostics, and national security; AI systems are used by banks in insurance and property management. AI helps to simplify technological processes, can perform dangerous tasks, help people with special needs, and contribute to the study of our planet. AI has a special place in education, which involves a personalised approach to knowledge acquisition. Artificial intelligence is defined as the ability of a system to autonomously select the best possible solution to a problem, the ability to correctly interpret external data in accordance with the goal. A striking example of the use of artificial intelligence for effective foreign language learning in a higher education institution is the use of specially designed programmes, applications and so-called speaking robots, which involves many types of different controlled activities in a variety of formats and provides individual feedback.

The use of AI in foreign language classes at higher education institutions makes it possible to create more visual and interesting classes, increases the intensity of the learning process, creates motivation for cognitive activity, activates mental abilities, engages passive students, forms abstract and logical thinking, and promotes individualisation and intensification of learning through independent work with digital resources. However, the issue of AI safety remains controversial. Only taking into account all the risks will allow for effective foreign language learning with the help of AI. Prospect for further research is a detailed analysis of the positive and negative aspects of using artificial intelligence in the process of foreign language learning by students of higher education institutions.
Keywords: artificial intelligence, foreign language, security, progress, individualisation, higher education institution.

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ВИКОРИСТАННЯ ШТУЧНОГО ІНТЕЛЕКТУ НА ЗАНЯTTЯХ З ІНОЗЕМНОЇ МОВИ У ЗАКЛАДІ ІЗ СПЕЦІФІЧНИМИ УМОВAMI НАВЧАННЯ

Анотацiя. Науковий прогрес охопив усю життєдіяльність суспільства, і найвищим його проявом сьогодення є створення штучного інтелекту (ШІ). Методи розпізнання образів за допомогою штучного інтелекту використовуються у медицині, виробництві, діагностиці, для забезпечення національної безпеки; системи ШІ використовуються банками в страховій діяльності та управлінні власністю. ШІ сприяє спрощенню технологічних процесів, може виконувати небезпечні завдання, допомагати людям із особливими потребами, а також сприяє вивченню нашої планети. Особливе місце ШІ займає в освіті, що передбачає персоналізовані підходи до здобуття знань. Штучний інтелект визначеня як можливість системи автономно підбирати найкращий варіант вирішення проблеми, властивість коректно інтерпретувати зовнішні дані відповідно до поставленої мети. Яскравим прикладом застосування штучного інтелекту для ефективного вивчення іноземної мови в закладі вищої освіти є використання спеціально розроблених програм, додатків та так званих speaking robots, що передбачає багато видів різноманітної контролюваної діяльності у різноманітному форматі та забезпечує індивідуальний зворотній зв’язок.

Використання ШІ на заняттях із вивчення іноземної мови у закладах вищої освіти дозволяє створити занятьтя більш наочні та цікаві, підвищує інтенсивність навчального процесу, формує мотивацію до пізнавальної діяльності, активізує розумові здібності, залучає до роботи пасивних студентів, формує абстрактне та логічне мислення та сприяє індивідуалізації та інтенсифікації навчання через самостійну роботу з цифровими ресурсами. Однак дискусійним залишається питання безпеки застосування ШІ. Лише врахування усіх ризиків дасть змогу ефективно опановувати іноземну мову за допомогою ШІ. Перспективи подальших досліджень полягають в детальному аналізі позитивних та негативних сторін використання штучного у процесі опанування іноземної мови студентами закладів вищої освіти.

Ключові слова: штучний інтелект, іноземна мова, безпека, прогрес, індивідуалізація, заклад вищої освіти
Statement of the problem. Today, every branch of science and social life exists in close connection with machines or so-called robots. They perform tasks that previously only humans could do. Scientific progress has covered all aspects of society, and its highest manifestation today is the creation of artificial intelligence (AI). Pattern recognition methods using artificial intelligence are used in medicine, manufacturing, diagnostics, and national security; AI systems are used by banks in insurance and property management. AI helps to simplify technological processes, can perform dangerous tasks, help people with special needs, and contribute to the study of our planet. AI has a special place in education, which involves a personalised approach to knowledge acquisition [4].

Artificial intelligence (AI) is a branch of computer science that studies the creation of programmes and systems that can reproduce human thinking and learning. In recent years, AI has become an integral part of the modern English language teaching system. The use of artificial intelligence in education opens up new perspectives and opportunities for students and teachers. Let's look at the key aspects and advantages of using AI in the process of learning English, as well as analyse the disadvantages of this approach and provide examples of specific systems [3].

Artificial intelligence (AI) is the ability of intelligent machines to perform tasks accurately and efficiently. AI is a complex blend of computer science, mathematics, and other complex sciences that helps machines reproduce human cognitive abilities. AI in education involves adaptive, personalised, interval learning and automatic assessment. In IMPS classes, AI performs four main functions: independent assessment of student achievement, learning assistance, global learning, and individual approach. Positive aspects of AI in IMPS classes include adaptation to students' strengths and weaknesses, appropriate support template based on results, adaptive learning at the initial level, prevention of shyness, and continuous practice in a convenient mode. However, the excessive use of AI can also have negative consequences: a decrease in students' cognitive abilities; complete dependence of mood on failures and successes in the AI system; loss of real connections between participants in the learning process; a decrease in the role of the teacher; deterioration of health; and loss of personal data. The use of artificial intelligence is an integral part of the educational process. AI, as an effective supplement in IMPS classes, can enrich the process of learning a foreign language, as well as provide adaptability, personalisation and satisfy the desire for globalised learning [1].

It has been determined that higher education institutions have switched to the latest educational approaches and methods that allow the use of classroom, combined and distance learning. The innovative methods of teaching English include the use of intelligent chatbots, organisation of multimedia lectures, creation of virtual language laboratories, introduction of mobile applications, and use of technological games. The use of methods based on artificial intelligence technology
contributes to more effective teaching of higher education students. An example of an AI-based technology that is widespread in English language learning and teaching is the ChatGPT chatbot. AI-based tools such as Grammarly (www.grammarly.com), IBM Watson Education, Duolingo, Memrise, Busuu, and others are equally popular in English language learning. The main outcomes of the transformation of English language learning and teaching methods in higher education institutions were identified as personalised support and interaction between the teacher and students, stimulation of students’ activity, promotion of critical thinking and practical communication skills, mobility and convenience of learning [4].

**Analysis of the latest research and publications.** The topic of practical use of AI in education is relevant and not new today. A number of studies have already examined various areas of AI application in the educational process, in particular, in the works of A. Dubchak and Y. Lytvynenko. The problem of using AI systems in adaptive learning is considered by V. Demianenko, while Y. Peruchok focuses on analysing the benefits and risks of using these technologies. AI is considered as a multimodal linguodidactic system. Li Wei-hua pays special attention to the multimodality of the AI system, considering it a key condition for successful implementation for learning foreign languages. The general aspects of the use of AI technologies in the educational process are considered by V. Hrytsyshyn, N. Gabruseva, A. Shevchenko, and G. Androshchuk. A. Turchyn also contributes to the study of this issue [2].

Certain aspects of the research are covered in a number of scientific publications. In particular, N. Akopyants considered the use of ChatGPT, a statistical language model developed by OpenAI, as an effective tool for learning English. The author emphasised the importance of this technology as an innovative tool for English language learners, which contributes to further research and development of this area in the academic environment [1]. V. Krasnopolskyi, T. Pakhomova, and Y. Kurylova outlined the realities and prospects for the development of artificial intelligence in Ukraine and drew attention to the use of such technologies for the independent learning of foreign languages by students. The authors noted that teachers should combine computer technologies and modern forms and methods of teaching, synchronous and asynchronous communication with students. Various applications such as: Meet, Zoom, Google Assistant, MyEnglishLab, SendPulse, Google Forms, Querium, AitabyKnewton, Thinkster, Duolingo, ChatGPT, Slido, etc. O. Khoroshailo and S. Kochergina focused on the study of such issues as perception of equality, data privacy, the moral side of using AI and improving the quality of foreign language teaching in higher education. Solving these problems can help implement new practices that are necessary and important for some of the leading institutions in society, including higher education [10]. N. Koroliova, O. Overchuk, and M. Pabat investigated the relationship between intensive foreign
language learning and the development of artificial intelligence technologies in the context of philological aspects. By analysing this issue, the authors also aimed to find out how to solve the problem of effective foreign language learning in the context of the increasing influence of the latest technologies [7].

The purpose of the article is to determine the role and importance of using artificial intelligence in the process of mastering a foreign language in higher education institutions with specific learning conditions in ESP classes. The subject is the peculiarities of learning a foreign language with the help of artificial intelligence. Object – the process of applying artificial intelligence in foreign language classes in higher education institutions [1].

Presentation of the main material.

The main purpose of teaching a foreign language in higher education institutions is to develop the skills of fluency in that language for successful communication in the graduate's future professional field. To achieve this goal, it is important to adhere to the following principles:
– integrity
– interdisciplinarity
– methodological pluralism,
– openness of the learning process,
– integration of various information to ensure effective communication interaction.

To optimise the educational process of a higher education institution and increase its flexibility and efficiency, new educational approaches and methods are needed that allow the use of classroom, combined and distance learning [5].

The introduction of innovative approaches to teaching English as a foreign language with the help of an artificial intelligence system marks the beginning of a new stage in the development of pedagogy. This stage of evolution began in recent years and has had a significant impact on the language learning process. Thanks to the ability of AI technology to analyse the specifics of learning needs, the teacher can develop individual tasks and materials that match the level and learning style of each student. Artificial intelligence in education is used to develop new technologies and tools, simplify the learning process, and increase the overall efficiency of the educational process. Currently, there are many innovative AI technologies being implemented in the educational process. For example, adaptive learning systems can create individualised curricula that are tailored to the personal needs of each student. These systems take into account the level of knowledge, interests and learning ambitions of each participant in the learning process, applying a personality-based approach to learning [6].

An example of an AI-based technology that is widespread in English language learning and teaching is the ChatGPT chatbot, a basic model capable of generating
text based on context. It is based on the Transformer architecture, which allows the model to understand the context and generate responses to user queries. The ChatGPT model has been trained on a huge amount of textual data in English, which includes a variety of content. The training process uses a reinforcement learning method where the model is rewarded for generating correct and meaningful answers [10]. The ChatGPT model has significant potential for teaching English, which helps to improve:

- spoken language skills
- listening skills
- comprehension of English text,
- adding and activating vocabulary,
- improving the use of grammatical patterns.

Examples of artificial intelligence systems for teaching English include:

Duolingo: This platform uses AI to deliver personalised language learning by adapting tasks and exercises to each student's level of proficiency.

ChatGPT: This AI system can interact with students in the form of a virtual assistant, helping them practice English and improve their speaking skills.

Grammarly: This tool uses AI to automatically check grammar, spelling, and style in English text [3].

The use of AI in English language teaching opens up new opportunities for learners to learn the language in an effective and engaging way, helping to develop their skills and knowledge. However, it is important to take into account the disadvantages and limitations of this approach, ensuring a balanced approach to learning.

Many studies confirm that the use of AI in the field of foreign language learning, in particular through the above-mentioned learning resources, contributes to the convenience and efficiency of learning. These resources are designed to engage and optimise the time needed to learn foreign languages. They are programmed to provide real results, make the learning process exciting and improve the level of knowledge [5]. Thus, we can identify a significant trend: the development of AI contributes to the formation of a technology of individualised foreign language learning that meets the requirements of informatisation of education. This technology models individual trajectories of knowledge acquisition, taking into account the learner's personal characteristics in a dynamic model of their characteristics. AI systems even take into account the emotional stability of the learner, notifying teachers or adapting the programme on their own [4].

The use of AI technologies implies the openness of user data on the Internet. Although this data is currently depersonalised, the results of recent cybersecurity research require a more cautious approach to decision-making regarding the use of AI technologies in the educational process. Nowadays, the more information a user
transmits about himself or herself (in social media, web search history, geolocation, visits to web resources, etc.), the more personalised the content of the curriculum offered by AI becomes. Learning foreign languages at universities today requires not only a deep understanding of grammar and vocabulary, but also active use of the language in different situations. AI innovations can address these challenges and become a powerful tool for improving English language learning at universities. One of the key advantages of using AI is the ability to recognise and correct pronunciation. AI-based systems can analyse students’ pronunciation, identify errors and provide individualised recommendations for improvement [7].

Artificial intelligence can analyse learned patterns and individualise learning for each student. Using machine learning algorithms, systems can tailor learning materials and tasks to the needs and level of knowledge of each student.

AI systems can automatically grade written assignments, check for correct grammatical structures, and reproduce correct pronunciation. Upon completion of the tasks, students are automatically provided with reports that indicate their successes and mistakes [2].

AI allows you to create interactive lessons, educational games, and simulations that make learning more interesting and effective. For example, virtual assistants can simulate real-life communication situations and help learn authentic English.

As modern higher education students increasingly interact in a digital environment, there is a growing demand for more reliable scanning of written discourse. Several AI-powered writing tools have emerged on the market, including Grammarly (www.grammarly.com), which offers spelling and grammar checking, as well as features that analyse clarity, coherence, interaction and comprehension, providing a reliable scan of written text.

AI-based writing tools can help higher education students develop a greater awareness of the universality of language. They can realise that language is not only about checking spelling and grammar, but also about expressing phenomena that are highly context-dependent and coherent [10]. IBM Watson Education, an AI-based platform, includes data analytics, individualised learning programmes, and adaptive testing systems, among other things. Cognii uses natural language and machine learning to create interactive virtual assistants that can provide learning support and answer questions from students [3].

In today's environment, when the number of classroom hours for learning English is decreasing, and given the need to train highly qualified specialists, the use of Content and Language Integrated Learning (CLIL) is becoming especially important. It is based on an integrated interdisciplinary approach that promotes intercultural knowledge and stimulates the development of creative thinking of higher education students, as well as helps to develop both professional and general language competences. The use of such a methodology in the university
environment will help to increase the motivation of students to learn English, to focus on intercultural communication and the development of flexible skills, and to perceive language as a tool for achieving different goals [2].

**Disadvantages of using AI in English language teaching:**

Lack of emotional communication: AI systems may be limited in emotional expression and interaction with students, which can be important for language learning and intercultural interaction.

Imperfect speech recognition: Speech recognition technologies can misinterpret accents or atypical pronunciation, which can lead to incorrect corrections or advice.

Dependence on technical aspects: The use of AI requires computers, an internet connection and other technical tools that may be difficult to access for some learners.

In today's world, artificial intelligence is playing an increasingly important role in various areas of life, including education. At our university, we use AI to enhance the English language learning process, providing students with new opportunities for creativity and learning [7].

One of the applications of artificial intelligence in education is the creation of visual works on a specific topic or illustrations of travel-related idioms. For example, students can be asked to create their own artistic embodiment of the topic of «Travel» using AI tools. They can use generative algorithms to create unique visuals that reflect their ideas about travel.

After creating the visuals, students are invited to share their impressions and comments on the results. This gives them the opportunity to express their thoughts on how their work reflects the travel theme or idiom, as well as discuss the technical aspects of using artificial intelligence in the process of creating visuals [6].

This approach helps students not only develop their creativity and ability to use modern technologies, but also deepens their understanding of the subject matter and language constructs. In addition, it stimulates active collaboration and exchange of ideas between students and teachers, which contributes to more effective learning.

The use of artificial intelligence in English language teaching opens up new opportunities for creative and innovative learning that meets the requirements of modern education.

**Conclusions.** Learning a foreign language in the modern world is a key component of success in a person's life. Due to global transformations in society, including the current development and geopolitical vector of Ukraine, the role of English in the education system has changed, which has affected the methods of learning and teaching it. Higher education institutions have switched to new educational approaches and methods that allow the use of classroom, combined and distance learning. Innovative methods of teaching English include the use of
intelligent chatbots, organising multimedia lectures, creating virtual language laboratories, introducing mobile applications, and playing technological games [8].

Summarising the practical principles of using AI methods in foreign language teaching, we note that this process contributes to improving the quality of learning by providing an individualised approach, interactive teaching methods and automated assessment tools. This opens up new opportunities for the effective development of students' language skills and increases their motivation to learn English. The theoretical basis is the analysis of language material on the example of European languages (Greek, Latin, Church Slavonic), which allowed us to conclude that it is advisable to use AI when the ascending and descending terms are digitised, taking into account the Index Order, Index Value and other indicators to assess the adequacy of the translation. This makes it possible to logically perceive alphabetic symbols of European languages as mathematical sets, while the translation process itself can be explained not at the verbal but at the phonemic level.

Prospects for further research may include analysing the ethical aspects of using artificial intelligence in education and determining the optimal balance between traditional and innovative approaches to teaching English in higher education.

References:


Література:

2. Вікторова Л. В., Кочарян А. Б., Мамчур К. В., Коротун О. О. Застосування штучного інтелекту та чат-ботів під час вивчення іноземної мови. Інформаційно-комунікативні технології в освіті, 2021. Вип. 32. Т. 2. С. 166–173.


5. Дем’яненко В. Системи штучного інтелекту в адаптивному навчанні. Звітна наукова конференція Інституту інформаційних технологій і засобів навчання НАПН України. Київ, 2019. С. 19–21.