ARTIFICIAL INTELLIGENCE AS A DIGITAL TOOL IN FOREIGN LANGUAGE TEACHING

ШТУЧНИЙ ІНТЕЛЕКТ ЯК ЦИФРОВИЙ ІНСТРУМЕНТ У ВИКЛАДАННІ ІНОЗЕМНИХ МОВ

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In today's rapidly developing digital technology environment, the field of artificial intelligence and its practical application are becoming increasingly relevant and significant. Particular attention is paid to the development of large language models, which represent a significant breakthrough in the field of artificial intelligence and have brought new opportunities to many areas of life. Many educators agree that the future of English language teaching is closely linked to advances in the latest technologies, new devices, and revolutions in the fields of information, electronics, and communications. The development of higher education is inextricably linked to advances in new technologies and increases in the computing power of intelligent machines. Advances in artificial intelligence in this field present both new opportunities and a number of challenges that have the potential to radically change the management and internal structure of higher education institutions. In the past, the process of creating teaching materials was labour-intensive and required significant time and resources. However, with a chatbot with generative artificial intelligence, this process can be simplified and accelerated. Educators are given the opportunity to develop materials effectively and reliably, allowing them to focus on more meaningful aspects, such as planning classes and conducting training. In addition, educational materials created using artificial intelligence can be superior in quality and focus. This technology is capable of generating content based on specific topics and intended for a specific audience. This contributes to improving the effectiveness of learning and the level of education in general. In this article, we will provide examples of the use of artificial intelligence and other neural networks that demonstrate the effectiveness and prospects of applying this technology in English language teaching.
Key words: *artificial intelligence, English language teaching, neural networks, digital technologies.*

У сучасному світі, що швидко розвивається в галузі цифрових технологій, сфера штучного інтелекту та його практичне застосування стають все більш актуальними та значущими. Особлива увага приділяється розробці великих мовних моделей, які є значним проривом у галузі штучного інтелекту та відкривають нові можливості в багатьох сферах життя. Багато освітян сходяться на думці, що майбутнє викладання англійської мови тісно пов'язане з досягненнями в галузі новітніх технологій, нових пристроїв та революційними змінами в сферах інформації, електроніки та комунікацій. Розвиток вищої освіти нерозривно пов'язаний з досягненнями в галузі нових технологій та збільшенням обчислювальної потужності інтелектуальних машин. Досягнення штучного інтелекту в цій галузі відкривають як нові можливості, так і низку викликів, які можуть радикально змінити управління та внутрішню структуру закладів вищої освіти. У минулому процес створення навчальних матеріалів був трудомістким і вимагав значних витрат часу та ресурсів. Однак завдяки чат-боту з генеративним штучним інтелектом цей процес можна спростити та прискорити. Педагоги отримують можливість ефективно та надійно розробляти матеріали, що дозволяє їм зосередитися на більш значущих аспектах, таких як планування занять та проведення занять. Крім того, навчальні матеріали, створені за допомогою штучного інтелекту, можуть бути вищої якості та більш цілеспрямованими. Ця технологія здатна генерувати контент на основі конкретних тем і призначений для конкретної аудиторії. Це сприяє підвищенню ефективності навчання та рівня освіти в цілому. У цій статті ми наведемо приклади використання штучного інтелекту та інших нейронних мереж, які демонструють ефективність і перспективи застосування цієї технології у викладанні англійської мови.
Ключові слова: *штучний інтелект, викладання англійської мови, нейронні мережі, цифрові технології.*

Problem statement. The development of artificial intelligence and its further implementation are becoming increasingly relevant in the context of the rapid development of digital technologies. In recent years, one of the most important areas in the field of artificial intelligence has been large language models (LLMs), which have revolutionized many industries and aspects of our lives (chatbots, text writing and translation, search engines, navigation, smart homes, Siri personal assistants, biometrics). In the rapidly changing world of technology, new developments do not gain momentum as quickly as ChatGPT, Claude, Gemini (Google) or Mecrosoft Copilot have. In less than four months, the artificial intelligence (AI)-based language model has taken the world by storm, with everyone from researchers to everyday internet users pondering its potential. While tech-savvy people celebrate its incredible functionality, the education sector is both amazed and apprehensive.

Recent studies reveal that AI is fundamentally transforming English language education, yet significant unresolved tensions persist between technological potential and practical implementation challenges. Many educators agree that the future of English language teaching depends on how well it can keep pace with the latest technologies and new devices, as well as the revolution in information, electronics and communications. In this area, AI achievements open up

new opportunities and raise a number of issues that could fundamentally change the management and internal architecture of higher education institutions [1].

The purpose of this article is to provide a comprehensive analysis of recent studies and publications regarding the use of artificial intelligence (AI) in teaching English. It aims to highlight the advancements and benefits that AI technologies bring to language education, such as personalized learning experiences, enhanced teaching tools, and measurable improvements in student performance.

The emergence of each new technology always causes a lot of skepticism about its consequences for society. The uniqueness of GPT chat lies in its ability to imitate the author's writing style, from translation to answering questions, writing coherent essays and creating computer programmes. The capabilities of this neural network and its accessibility to students have caused concern in the academic community due to the high probability of the phenomenon of academic GPT misconduct.

By academic GPT misconduct, we mean a type of cheating involving the completion of educational assignments using artificial intelligence which students present as their own work [2].

Open AI CEO Sam Altman, in an open letter, called on developers to suspend the development of AI for models larger than GPT-4 and assured that the next generation of GPT would not be released until they had devised ways to use it safely and responsibly. Until then, foreign language teachers have a little time to develop ethics of use and a responsible attitude towards the application of neural networks, discussing their advantages, problems and risks with students, which is a better strategy than trying to ignore the topic.

In this article, we will look at examples of the use of chatbots and other neural networks that demonstrate the effectiveness and prospects of applying this technology in teaching English.

The main body. With the development of technology, and neural networks in particular, we have witnessed a revolution in English language teaching methods. Neural networks are computer systems based on modeling the workings of the human brain. They are capable of processing vast amounts of information and extracting patterns, making them ideal tools for language learning. Modern English language teaching methods that use neural networks offer unique opportunities for teachers and students.

ChatGPT-4 (Chat Generative Pre-Trained Transformer) is an advanced version of a chatbot created by OpenAI with Microsoft as its leading partner in March 2023, which had one of the fastest adoption rates of any technology in history. OpenAI is an American non-profit company engaged in machine learning technologies. The founders of the company are SpaceX CEO Elon Musk and Y Combinator CEO Sam Altman. OpenAI is engaged in the development of artificial intelligence and the study of The company's founders are SpaceX CEO Elon Musk and American company Y Combinator CEO Sam Altman. OpenAI is engaged in the development of artificial intelligence and the study of its potential applications to simplify human life. Open AI has released four versions of its GPT language model.

The GPT neural network is a language multimodal deep learning model (it is capable of learning from its mistakes and constantly improving) that can generate text similar to natural language, can capture the nuances and variations of language, and process images. It has been trained on a huge amount of text data from the Internet and can be used to automatically create articles, chatbots, generate text answers to questions, and conduct conversations similar to human ones [3].

The Open AI article "GPT-4 Technical Report" states that "despite the fact that GPT-4 has fewer capabilities than humans in many real-world scenarios, it demonstrates human-level results on various professional and academic criteria, including passing a simulated bachelor's degree exam with a score of about 10% of the best test takers." Each method of teaching English is undoubtedly effective in its historical context. However, with the development of neural networks in society, there are changes in the mentality of students, which requires the mastery of new technologies that can meet their needs and ensure optimal learning of the English language. In light of this, it is necessary to conduct research and develop innovative methods based on the use of modern information and communication technologies, as well as artificial intelligence. Such research will make it possible to create an interactive and individualized learning environment that promotes active participation and independent work by students. All this will make it possible to effectively overcome problems associated with the learning process and create conditions for the successful mastery of the English language in today's information society.

Many educational institutions do not have the opportunity to use the language being studied outside the classroom. Students are often given only artificial language exercises that do not correspond to the everyday use of English. Since neural networks excellently mimic human interactions, students can easily initiate authentic conversations with a chatbot.

The application "Talkpal" is capable of providing students with an (oral) communication experience that is indistinguishable from communicating with a native speaker. Such applications can increase students' awareness of English pronunciation and phonology, an area that is often overlooked when learning English.

In a recent review of conversational AI in language education, the authors found that there are five main uses for conversational AI inteaching, the most common of which is the use of large language models as conversation partners in written or oral form for example, in the context of a task-oriented dialogue that

provides opportunities for language practice, especially pronunciation training [4].

Another study investigated the ability of modern conversational chatbots to respond appropriately to students in educational dialogue. Both models used in this work (Blender and GPT-3.5) were able to respond adequately to the learner and generated conversational dialogues, giving the impression that these models understand the learner (in particular, Blender). However, they lag significantly behind human performance when it comes to helping students [5].

The creation of intelligent assistants based on Chat GPT technology represents a promising direction in the field of education and training. The use of such assistants can lead to significant changes in the learning process, providing students with the opportunity to solve complex problems and receive answers to questions in real time. Intelligent assistants developed on the basis of Chat GPT can Intelligent assistants developed based on Chat GPT can be effective and competitive, capable of performing tasks that previously required the presence of experienced teachers. These assistants can be configured to work with students of different levels of preparation and provide personalized assistance depending on their individual needs. One of the main problems that often arise with distance learning and online courses is the lack of feedback from teachers. Intelligent assistants based on chatbots can solve this problem by providing students with the necessary support and feedback. It should also be noted that intelligent assistants are available to students at any time of the day, allowing them to work on assignments and study at a time that is convenient for them. This is especially important for students who have other commitments, such as work or family matters.

The creation of teaching materials is one of the most suitable applications of AI technology. By using this advanced technology, teachers can creatively develop articles, lectures and presentations of high quality and effectiveness.

In the recent past, the process of creating teaching materials was very labour-intensive, requiring a significant investment of time and resources. However, with AI, this process can be simplified and accelerated. Teachers are given the opportunity to develop materials efficiently and reliably, allowing them to focus on more important aspects, such as lesson planning and teaching.

In addition, teaching materials created using AI can exceed in quality and focus. This technology is capable of creating content based on specific topics, designed for a specific audience. This contributes to improving the effectiveness of teaching and improving the level of education in general.

The creation of tests and assignments is a relevant area of application for AI technology. This technology allows teachers to simplify and improve the quality of the process of developing tests and assignments for students.

The use of AI allows you to create tests and assignments based on specific topics, as well as provide students with personalized options depending on their level of preparation, which allows students to learn the material more effectively and quickly.

AI technology can be used to create a variety of test types, including multiple-choice tests, open-ended tests, and others. Teachers can create tests tailored to a specific audience and area of knowledge. In addition, AI can be used to create high-quality tests and assignments. The technology provides students with materials based on relevant and interesting topics, making learning more engaging and enjoyable.

It is important to note that questions, commands and tasks should be formulated clearly, one should specify the style and volume of the text, and express thoughts and requests in simple and understandable language.

The areas of application for chatbots and other neural networks in English language teaching are very diverse:

Working with vocabulary: preparing a word list (WORDLIST) based on texts or videos; creating exercises with missing words; generating text based on a word list; explaining the difference in the use of words that are easily confused and creating training exercises; selecting synonyms and antonyms; Google's Semantris game (English level not lower than Intermediate with a vocabulary of 2000 words) does not help to learn new words, but is an excellent trainer for using already known ones; writing definitions for words and examples, translations (the ready-made list of wordscan be inserted into QUIZLET); translating words (one of the main advantages of Chat GPT is its ability to change the translation depending on the context or additions provided by the user, while Google Translate, which was the best until recently, cannot do this).

Working with grammar: creating homework tests and analyzing written work; practising grammatical structures; checking texts; explaining complex rules in simple language in the native language; creating series of exercises; developing materials for students.

GPTchat is not a specialized grammar checking tool like Grammarly or other similar tools, but it can certainly help improve the clarity and accuracy of your writing. The methods used by these tools, such as NLP (neuro-linguistic programming) and machine learning, are also used in ChatGPT, which suggests that ChatGPT understands grammar and uses an approach similar to other tools for correcting errors in written language to check and correct it.

Since the pace of AI adoption in education is still slow compared to other areas, such as industrial applications (e.g., finance, e-commerce, automotive) or medicine, there is less research examining the use of large language models in education. A recent review of

the opportunities and challenges of chatbots in education showed that research related to chatbots in education is still in its early stages, and only a few empirical studies explore the use of chatbots in education, effective learning projects or teaching strategies [6].

From this perspective, a pilot study involving European teachers positive attitude towards AI in education and a high motivation to introduce AI-related content in schools. The teachers who participated in the study appeared to have basic digital skills but low skills related to artificial intelligence [7].

Since it is believed that teachers' views on the general use of artificial intelligence in education have much in common with the aforementioned attitude towards chatbots in particular, the responsible integration of artificial intelligence into education by drawing on the experience of various communities is crucial [7].

While AI opens up many opportunities for significant changes in English language teaching and learning, there are challenges and risks associated with the use of large language models: copyright issues; learners may rely too heavily on the model; information obtained without much effort may negatively affect students' critical thinking and problem-solving skills; teachers may become overly dependent on AI.

To counter this risk, it is important to be aware of the limitations of large language models and to use them only as a tool to support and enhance learning, rather than as a replacement for human authorities and other authoritative sources [8]. It is important to mention that the use of large language models should be integrated into the curriculum in such a way as to complement and enhance the learning process rather than replace it. Strategies for using other educational resources (e.g., books, articles) and other authoritative sources should be employed to evaluate and confirm the factual accuracy of the information provided by the model, i.e., to question the generated content.

G. Chinnery emphasizes the need to prioritize the use of educational technologies based on artificial intelligence and develop strategies to address their shortcomings. Consequently, teachers and students must develop the specific digital competencies necessary to use such tools in ways that are pedagogically useful and ethical [9]. This includes learning how to interact with ChatGPT, as well as requiring a critical awareness of ChatGPT's shortcomings and risks.

Traditionally, educational institutions have helped students master basic technological skills, such as the ability to use electronic platforms (e.g., Padlet, Google Docs), electronic portfolios, and tools for producing videos. However, in response to rapid digital progress, scholars have emphasized the need for more advanced digital literacy among students [9].

Conclusion. The author of the article is convinced that after the initial wave of concern, teachers will begin to see the bright side of using AI and will be able to take full advantage of the benefits and opportunities offered by new technologies. Similarly, AI has opened up a wealth of topics for researchers to explore. The potential of chatbot technology for education and scientific research is limitless. Finally, education departments, universities, and schools need to consider how best to prepare students for a world where digital tools powered by artificial intelligence are a normal part of everyday life.

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