The Role of Generative AI in the Modern University: Mapping Opportunities, Limits, and Risks for Academic Integrity

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ABSTRACT:

In recent years, neural networks have demonstrated rapid growth and incredibly active development and improvement, being actively implemented in all spheres of human life, including education, which requires new research on their effectiveness for didactic purposes. The purpose of the article is to investigate the opportunities and threats from the use of generative AI in higher education, in particular, in the formation of professional English language training for students of natural sciences. In the course of this study, theoretical general logical (analysis, synthesis, generalization, induction, deduction) and empirical (pedagogical observation, pedagogical experiment, description, survey) methods were used. The theoretical and methodological basis is formed by the key provisions of cognitive psychology, cognitive pedagogy and AI theory. The article provides a critical analysis of the literature, discusses the advantages and disadvantages of implementing generative AI in the educational process; describes the didactic possibilities of using neural networks ChatGPT, Copilot, and AI Tutor; conducts a pedagogical experiment and describes its results on the use of neural networks in the process of learning academic English; develops methodological recommendations for the use of AI-based programs in the educational environment of higher education. It has been established that AI can take on different roles in learning English for academic purposes, so in the pedagogical experiment, students were allowed to use AI in the following three roles: teacher, editor, and foreign-language interlocutor. The study identified and examined the following pedagogical capabilities of ChatGPT for the development of students' cognitive and

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linguistic activity: criticality, creativity, cognitive interest, motivation to learn, reflexivity, and skill development in learning English. The results of the study showed the effectiveness of using AI to compile thematic glossaries, search for contexts of term use, test vocabulary, and conduct dialogues, which stimulated their cognitive interest. The results of the final tests showed higher achievements of the experimental group in geological English terminology, comprehension of scientific texts, and listening.

Keywords: neural networks, university environment, English academic writing, terminology, term concept

1. Introduction

The modern education system is at the stage of intensive change caused by the dynamization of scientific and technological development, which determines a sharp increase in the volume, rapid aging and updating of knowledge. The use of AI in educational technologies can play a catalytic role in the transformation of education for all stakeholders, from individual students to ministries of education (Chan, 2023). In recent years, neural networks have demonstrated rapid growth and incredibly active development and improvement, being actively implemented in all spheres of human life, including education.

The term «artificial intelligence» refers to the ability of neural networks to perform tasks that were previously only possible for the human mind (Holmes et al., 2023). Nowadays, the term is used to refer to an ambitious project of developing systems that are endowed with intellectual processes characteristic of the intelligence of a living person. These processes include intelligent reasoning, the ability to generalize and analyze, receive and process information, gain experience, and expand knowledge (Al-Shanfari et al., 2023). In other words, AI is a wide range of machine learning algorithms and tools capable of receiving and processing information almost instantly: identifying patterns, optimizing, and making predictions. This principle underlies the functioning of chatbots, which are now widespread, and is also used by algorithms that generate unique texts, recognize images by analyzing and describing objects on them (Crompton & Burke, 2023).

A study conducted by Sallam et al. (2024) among university students in the United Arab Emirates showed that 85% of respondents already use ChatGPT. Comparing this data with previous regional data, the authors can see the rapid growth of ChatGPT use in other Arab countries, for example, only 11% used generative AI in medical universities in Jordan. According to a study by education journalist The Gardian, 92% of university students in the UK will use generative AI, including ChatGPT, in their academic work in 2025, which is significantly higher than 66% in 2024. Students use generative AI tools to explain concepts, summarize articles, i.e., they used it mainly to generate ideas, applying a creative and constructive approach, and only 18% of the surveyed students admitted that they pasted AI-generated texts without changes, deliberately violating the rules of academic ethics (Weale, 2025).

Changing the paradigm of the educational process, shifting the «activity vector from the teacher to the student does not make the teacher's task easier. On the contrary, the teacher's activity becomes even more creative and responsible, since in the new conditions it should be based not only on the most advanced methodological, psychological and philosophical approaches, but also on innovative technological solutions. The cognitive dialog between the teacher and the student becomes important, as it involves identifying the student's attitude, helps to reveal the student's personal position, and creates an atmosphere of mutual understanding, trust, and frankness.

In this article, the authors will consider the didactic potential of ChatGPT, Copilot, AI Tutor neural networks for the university educational environment, in particular, in the process of learning English for academic purposes, English-language training of students of natural sciences. The problem is relevant and requires a comprehensive interdisciplinary approach.

The purpose of the article is to investigate the opportunities and threats posed by the use of generative AI in higher education, in particular, in the formation of professional English-language training for students of natural sciences. To achieve this goal, the following specific objectives were set:

- to critically analyze the literature that discusses the advantages and disadvantages of implementing generative AI in the educational process;
- to describe the didactic possibilities of using neural networks ChatGPT, Copilot, AI Tutor;
- to conduct a pedagogical experiment and describe its results on the use of neural networks in the process of learning academic English, in particular, the acquisition of ESP terminology by students of natural sciences;
- to develop methodological recommendations for the use of AI-based programs in the educational environment of higher education.

2. Literature review

The basics of AI functioning were developed in 1985 in the monograph by Haugeland (1985). The rapid use of AI-based technologies in the last decade has led to the emergence of scientific research that analyzes the ways, methods, and ethical component of using neural networks in the educational process (Agaoglu, 2016; Aluko et al., 2016; Baker & Smith, 2019; Hew et al., 2019). Zawacki-Richter et al. (2019) explored a wide range of potential applications of AI in higher education to support students, teachers, and administrators. They described them in four broad areas (profiling and prediction, intelligent learning systems, assessment and evaluation, adaptive systems and personalization).

A significant number of scientific studies have explored the prospects of using neural networks in the process of teaching foreign languages. For example, Aluthman (2016) studied the potential of artificial intelligence in improving foreign language writing skills, in particular essay writing. Researchers Barker (2011); Casamayor et al. (2009); Bartolomé et al. (2018) consider AI-based digital products only from the perspective of an assistant, i.e., the main function of these programs is to automate some processes and check tasks. Castañeda and Selwyn (2018) consider neural networks to be the main driver of the digitalization of higher education. Duzhin and Gustafsson (2018) studied the possibilities of machine learning in the process of self-education. Hinojo-Lucena et al. (2019), Hooshyar et al. (2015), Chan and Hu, (2023), Crompton and Burke (2023) studied the impact of AI on the university environment (faculty and students), as well as on the writing of scientific literature.

Some researchers have studied the use of AI in science learning (Exintaris et al., 2023), for example, in improving problem-solving and critical thinking skills in chemistry with the help of hints generated by ChatGPT. Kirwan (2023) explored the potential of generative neural networks in the humanities. Wang and Feng (2024) study the impact of engineered hints on information retrieval skills. Kuramitsu et al. (2023) and Garcia-Gorrostieta et al. (2018) evaluate the impact of AI-based assistance in programming and computer engineering education, focusing on how AI can complement traditional teaching methods, in particular, help students write codes, solve errors, and explain unknown terms. Ethical principles and norms of AI use are presented in Holmes et al. (2023).

The effectiveness of AI in foreign language learning, in particular in the process of mastering highly specialized terms, is still poorly understood, and this is the area of research the authors have chosen for this article.

3. Methodology

The theoretical general logical (analysis, synthesis, generalization, induction, deduction) and empirical (pedagogical observation, pedagogical experiment, description, survey) methods were used in this study. The method of generalization was used to analyze statistical data and formulate the conclusions of the study. The theoretical and methodological basis was formed by the key provisions of cognitive psychology, cognitive pedagogy and AI theory, which underlie the growing need for the younger generation to have certain knowledge, the need for quick perception, memorization of a huge array of critical thinking, erudition, memory, as well as readiness for

continuous development of competencies in conditions of high uncertainty.

The pedagogical possibilities of using neural networks based on generative AI were investigated in a pedagogical experiment and a final survey of 1st and 2nd year bachelor's students (n=60) of the Geological Faculty of Ivan Franko National University of Lviv in the context of learning English for scientific purposes. The sample of respondents was random, the age of the participants ranged from 17 to 20 years. The pedagogical experiment was conducted from March to June 2025.

Data analysis and statistical processing. The tool used to measure the effectiveness of AI in the educational process was automated testing of students' vocabulary, including natural science terminology, as well as summarizing students' surveys on the positive and negative aspects of using neural networks in the process of learning English. The results were processed and summarized by the course instructors.

Ethical issues and methodological limitations. Students who agreed to participate in the experiment gave written consent to take part in the study. The authors believe that the gender and age differences of the participants did not have a significant impact on the study design. The study's limitations are related to the sample size and homogeneity of the participant groups.

4. Results

ChatGPT is able to not only generate answers that mimic human responses, but also memorize search queries and learn on its own by analyzing user messages. This chatbot has unique capabilities due to its ability to understand and answer a wide range of questions and tasks: it can create creative texts, imitate author's writing styles, perform language translations, and much more. The capabilities of this neural network and its accessibility to students have caused concern in the academic community due to the high probability of academic GPT dishonesty. By academic GPT dishonesty, the authors mean a type of cheating related to the performance of educational works with the help of ChatGPT, which students present as having been performed personally. ChatGPT has even passed the final exam of an MBA program, easily solving many difficult questions and receiving a B (good) grade.

The work of AI is based on a combination of three key skills:

- learning – collecting information and creating rules for its further use;

- reasoning – choosing the optimal algorithm to achieve the desired result;

- self-correction – continuous improvement, fine-tuning of algorithms to achieve the most accurate results possible.

It is important for teachers to understand what AI can do and where its capabilities are limited, to learn how the use of technology like ChatGPT can qualitatively improve the educational process, stimulate students' cognitive activity, and contribute to the effective achievement of educational goals. ChatGPT is a tool that initiates a rethinking of the education system, contributes to the formation of the educational process of the future with the need to change technologies, methods, approaches and teaching tools. Understanding how ChatGPT works will allow teachers to identify limitations in the use of this chatbot and AI technologies in the educational process. Whatever one's attitude to neural network technologies, it should be recognized that they will soon become an integral part of the educational process, which means that every university professor needs to learn how to use them effectively.

The simplest example of the use of artificial intelligence in education is automatic assessment, which eliminates the human factor. On the one hand, it reduces the risk of error to zero, and on the other hand, it facilitates objective assessment and the most accurate, unbiased results.

AI analyzes other people's experience of studying courses, suggests an effective order of studying them for a particular pupil/student, provides useful recommendations for a more thorough study of a particular topic, etc. The same applies to teachers - artificial intelligence can suggest how to present educational materials in a better way to make learning even more effective.

The main educational benefits of using neural networks are as follows:

1) Personalization. AI is already helping to create individualized academic English curricula that best suit the interests, needs, and knowledge of a particular science student.

2) The ability to organize distance learning. Artificial intelligence greatly simplifies the process of distance learning, improving the quality of education received in this way.

3) Process automation. AI takes over routine tasks, such as checking tests and other assignments, and teachers have time for more important, creative aspects of learning.

The following AI-based programs can be used to learn English, in particular, to master term concepts:

- Microsoft Copilot – the same GPT that is built into the Bing search engine, which adds links to its generation at one's request;

- Grammarly – a model for spell checking and improving the quality of written text;

- Gramma – a neural network that will become main assistant in creating a presentation.

Let's take a closer look at Microsoft Copilot's capabilities for learning English for Specific Purposes. This neural network is built into Windows applications and Microsoft online services and is designed to help users create and edit text, generate images, program, and solve work tasks using artificial intelligence. The current version of Microsoft Copilot is based on the advanced ChatGPT-4 and ChatGPT-4o language models and uses the DALL-E 3 generative neural network for image generation. This combination ensures high performance in a wide range of tasks: natural language processing (futher – NLP); content generation; data analysis; visual synthesis.

The education sector can benefit greatly from artificial intelligence, especially in improving the quality of teaching materials and bringing them in line with educational standards. By integrating Copilot into Microsoft Word, teachers have a powerful tool at their fingertips. Using artificial intelligence, teachers can create lesson plans adapted to the curriculum and the diverse learning needs of students, create interesting and relevant tasks, reading materials, and multimedia resources. For example, when a teacher is planning a module on the study of science term concepts, Copilot can tell about the latest scientific discoveries or experiments that led to the emergence of a particular term.

Effective use of Copilot in an IT environment requires an understanding of its strengths and limitations. The key to successful work with the assistant is to clearly formulate requests. When addressing it, do not use colloquial phrases. Instead, rely on specific technical terms and descriptions of the desired result. In addition, in Windows, Copilot allows to manage system settings and open applications. The Edge browser provides separate buttons for text interactions and image creation. And mobile applications allow to choose between language models. According to GitHub, students who use Copilot complete tasks 55% faster and feel more satisfied with their coding experience. The study surveyed more than 2,000 developers to learn about their experience using GitHub Copilot on a large scale. Between 60 and 75% of users reported feeling more satisfied with their work, less frustrated while coding, and able to focus on more enjoyable work when using GitHub Copilot. Developers reported that GitHub Copilot helped them stay on track (73%) and save mental effort during repetitive tasks (87%). This is a developer's happiness, as the authors know from previous research that context switching and interruptions can ruin a developer's day, and that certain types of work are exhausting (Kalliamvakou, 2022).

For all the objective advantages of Copilot, it has a number of, if not disadvantages, then at least features that make it a little difficult to master. First, to get the best results, it is important to formulate queries clearly and specifically, avoiding colloquial phrases. Second, the best results are often achieved by consistently refining and adjusting queries. Third, Copilot may not be ideal as a standalone assistant. It works best when paired with other data development and analysis tools.

Integrating Copilot into the workflows can be a key factor in improving English language competence. However, it is important to remember that Copilot is a support tool, not a replacement for human intelligence and skills. To use it effectively, person needs to have a sufficient level of expertise their own.

The authors believe that the advantages of Copilot artificial intelligence are as follows:

1. Increased productivity. One of the most important benefits of Copilot is increased productivity. By automating routine tasks such as data entry, content creation, and email management, users can focus on more strategic work that requires human insight and creativity.

2. Increased creativity. Copilot acts as a brainstorming partner, offering suggestions that can generate new ideas and approaches to solving problems. This can lead to more innovative solutions and creative outcomes.

3. Improved decision-making. Thanks to its ability to analyze data and provide analytical information, Copilot can compile subject-specific glossaries, which can make it much easier for students to master the relevant terminology.

5. Accessibility and inclusiveness. Neural networks can make the digital workspace more accessible to people with disabilities or those who prefer different ways of interaction, such as voice commands or simplified interfaces.

6. Simplified collaboration. Collaboration on projects is made easier with Copilot's ability to understand context and content. It can suggest edits, summarize discussions, and keep team members informed, thereby reducing misunderstandings and increasing synergy.

Models of using AI in the process of learning foreign languages

To learn English for academic purposes, AI can take on different roles, so as part of a pedagogical experiment, students were allowed to use AI in the following three roles (Figure 1).

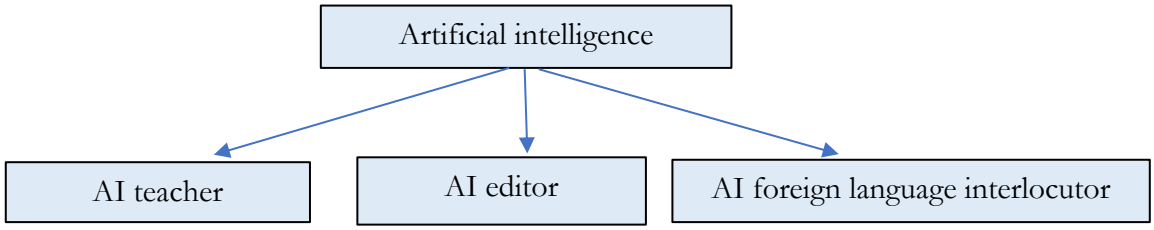

Figure 1. Possible statuses of AI in the educational process
Source: authors' development

Model "AI teacher". When learning a new skill or studying a new topic, additional explanations or examples are needed. Students asked in the chat for information on how to create English terminology, requested the context of each natural science term, and asked for explanations of polysemy and variants of individual terms. Students also received annotations and short summaries for each topic of the seminar, as well as explanations of discussion questions. To use AI as a teacher, a minimum understanding of the topic is required to formulate questions correctly and receive high-quality answers.

The AI Editor model was used by students to write academic essays in English for research purposes. After the essay was written, AI was used to improve the stylistic and lexical perfection of the text, replacing certain words with terms or lexemes of a higher level of language proficiency. By gradually interacting with such a model, one can quickly reach the desired result. It is also worth checking the text for "paraphrases", as this is a common problem with GPT answers.

The AI-English Interlocutor model. This model of communication between a student and a robot powered by artificial intelligence is a very effective way to develop speaking and writing practice. Of course, there is nothing better than real-life communication or practice with a native speaker. However, when this is not available, there is a great alternative. This tool allows to have dialogues in any language one is learning. Within a single chat, people can ask the model to mark the language mistakes and help build sentences and their variations. In addition, ChatGPT can suggest synonyms and help improve the vocabulary. Moreover, if people are preparing for a professional English language exam, people can ask GPT to take quizzes for people on grammar, English terminology and science. This approach helps to organize the language learning more efficiently and interactively.

To implement the interlocutor model, it is best to use the AI-Tutor program. It is an educational platform based on artificial intelligence that aims to provide high-quality and effective learning with the help of AI. It can be used to conduct an

in-depth analysis of individual student problems; generate progress reports for a certain period; track student progress; make individual recommendations for students to eliminate knowledge gaps; create additional forms of assessment (tests, tasks, etc.) to check students' understanding of the material, taking into account individual knowledge gaps; monitor knowledge In addition, the program collects typical mistakes made by all students on the platform so that they can be worked on. During the analysis, the program identifies topics that a student should know but does not use to solve certain tasks. Based on this data, AI Tutor offers additional materials on this topic and exercises to reinforce it. In a study conducted among psychology students at UniDistance Suisse (also known as FernUni Schweiz, an accredited university institute for distance learning in Switzerland) (Baillifard et al., 2025), AI-Tutor generated individualized questions, and as a result, students who actively worked with this digital tool showed up to 15% higher academic performance compared to the control group that did not use AI-Tutor.

In our pedagogical experiment, the authors applied all three models of AI in education. Based on the results of ChatGPT testing during English classes for geology students, the authors created 2 groups – experimental and control, with 30 students in each group, respectively. In the experimental group (30 students), during the semester, students' independent work was organized using AI-based programs. The essence of the tasks was as follows:

1. Compiling thematic thesauri in English with translation into Ukrainian using GPT chat.

2. Finding the context for each geological term by using time.

3. Training of audiolingual and communication skills through the use of the AI Tutor program.

The control group did not use AI-based neural networks during their independent out-of-class work.

The survey of the experimental group revealed the development of critical thinking in the perception of the results generated by AI (Figure 2).

The study of ChatGPT's capabilities in terms of developing criticality found that 46% of students sometimes notice logical errors or mistakes in the reasoning and generated answers of the chatbot, while 17% of students have never noticed such errors. However, the majority of students (58% of respondents) always carefully check, think about, and analyze the material provided by AI before using it for educational purposes. This indicates that students develop their critical skills when working with data provided by ChatGPT. In the context of creativity development, about 60% of the surveyed students believe that ChatGPT contributes to the development of this competence. Students can use the generated answers as starting points for developing their own, more thoughtful and creative solutions, which allows them to go beyond standard methods and traditional ideas.

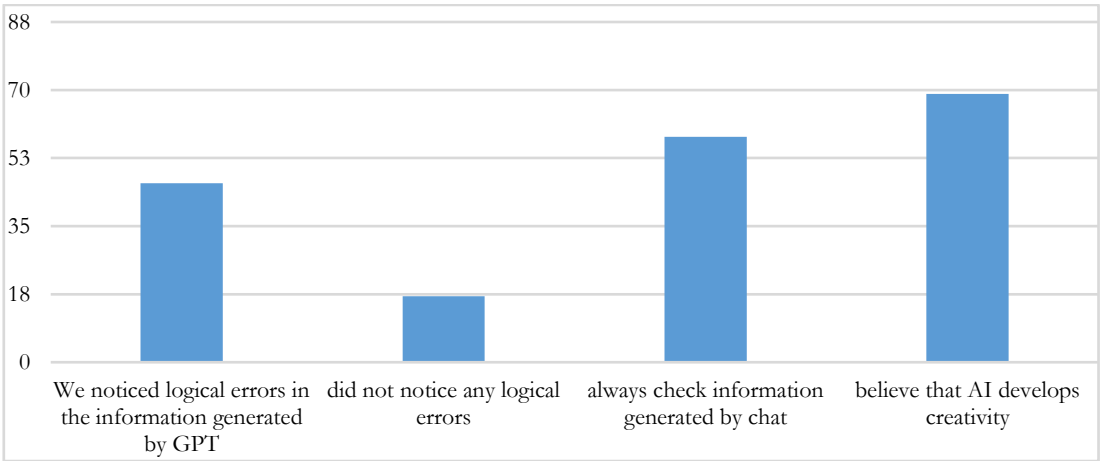

Figure 2. Students' perception of results generated by AI
Source: authors' development

Among other things, the students participating in the experiment on the use of neural networks were asked how they used AI most often. The answers were distributed as follows (Figure 3).

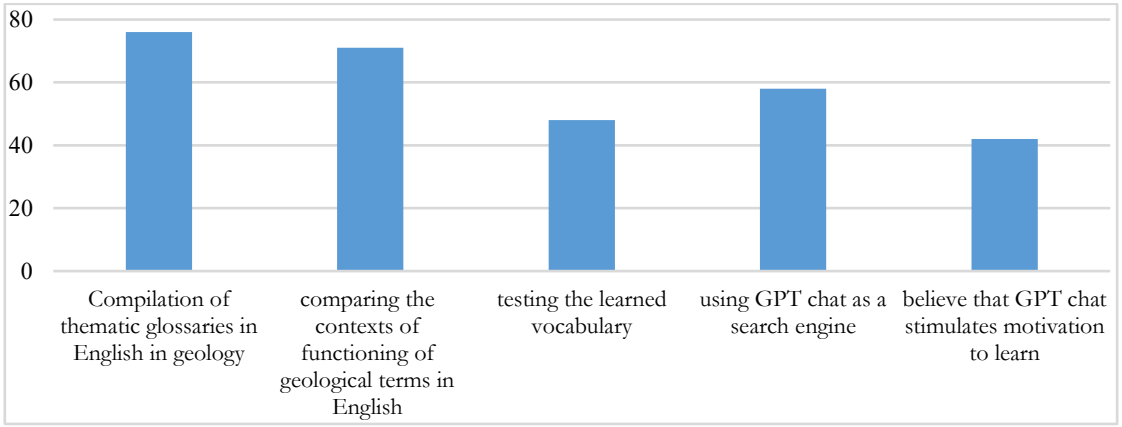

Figure 3. Ways of using AI by students of the experimental group
Source: authors' development

As the authors can see, students actively used ChatGPT to perform such tasks as collecting and systematizing data (in our case, compiling thematic glossaries in English on geology) (76% of respondents), searching and comparing the contexts of geological terms in English (71%), testing the learned vocabulary (48%), and using AI programs as an interlocutor. This emphasizes that ChatGPT can stimulate cognitive interest and deep immersion of students in the topics under study. At the same time, more than half (58%) of the respondents use ChatGPT instead of traditional search engines to find information, new ideas, and concepts. The study of ChatGPT capabilities in the context of developing motivation to learn showed that 42% of respondents believe that ChatGPT is a means of increasing motivation to learn.

All students of the experimental group used AI-Tutor to train their communicative and audiolingual skills in professional English during the experiment. All students of the control and experimental groups completed 3 tests at the end of the experiment: to determine the level of knowledge of English geological terminology, to determine the level of reading English scientific texts and reading comprehension, and a listening test (a scientific text on geological topics). The results of the comparison of the test results of both groups can be presented in the form of a diagram (Figure 4).

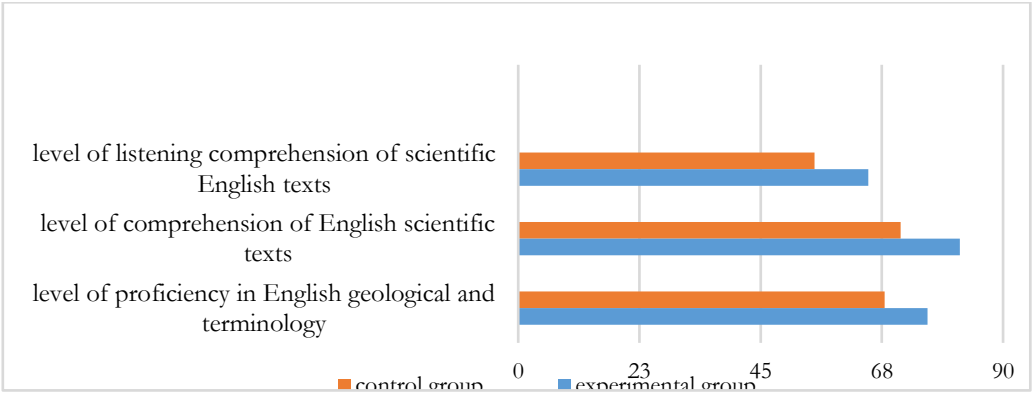

Figure 4. Comparison of test results of the control and experimental groups
Source: authors' development

The average rate of correct answers in the experimental and control groups shows that the level of success in all three tests was higher in the experimental group: the level of proficiency in English geological terminology – by 8%, the level of understanding of English scientific texts – by 11%, the level of listening comprehension of English scientific texts – by 10%.

The pedagogical experiment of using neural networks in the process of teaching academic English showed the development of the following cognitive indicators (Table 1).

Table 1. Cognitive indicators positively influenced by neural networks

Cognitive indicators	Direction of influence
Development of criticality	ChatGPT generates information from various sources and helps students analyze and evaluate it. It provides tools for checking the reliability and accuracy of information, drawing their own conclusions, and discussing different points of view
Creativity development	ChatGPT provides access to many ideas and solutions based on existing data. Students can use the chatbot to develop innovative approaches to learning the material
Increasing cognitive interest	Increase cognitive interest. ChatGPT helps to find answers to questions and deepen knowledge in a particular field, offers students different topics and areas of research, and broadens their horizons
Increase motivation to study	ChatGPT provides personalized materials and tasks that allow students to better understand and absorb information, help set goals and motivate students to achieve them
Development of reflexivity	ChatGPT helps analyze thoughts, actions, evaluate progress in learning, realize strengths and weaknesses, thus improving self-analysis and self-assessment skills, which allow to effectively use learning opportunities

Source: authors' development

5. Discussion

The authors fully share the fears of some scientists (Howard et al., 2021) that the expansion of AI's influence on education may result in a number of serious problems: reduced socialization, less contact between students and teachers, which will negatively affect the acquisition of social skills, and problems with the development of critical thinking. It is believed that due to the widespread use of neural networks, students will have difficulty making important decisions, as they will be able to solve many tasks automatically thanks to artificial intelligence. AI can radically change teaching methods by offering a personalized approach to learning.

Through adaptive learning and data analysis, AI is able to customize curricula to the individual needs of each student, improving engagement and understanding of the material and creating a personalized learning environment (Camacho-Sánchez et al., 2023). The widespread use of AI in education may limit students' social interaction and critical thinking. It is important to find a balance between the use of technology and the development of interpersonal skills through group work and communication.

There is no denying the fact that the creation, development, acceptance and transmission of ethical norms by all participants in the educational process allows for legitimate, authentic and genuine learning outcomes.

Establishing clear rules, explaining the consequences of unethical behavior, and the importance of adhering to moral principles can be measures to prevent academic dishonesty.

One cannot but agree with Tung (2023) that it is necessary to create a pedagogical atmosphere in which freedom and responsibility are cultivated. It is important to create a positive and friendly educational climate in which students feel supported and engaged by teachers, as well as to apply new teaching practices that value collaboration and teamwork. In such an environment, ChatGPT can become an effective educational tool for activating students' personal potential in the context of digitalization of university education (Zeb et al., 2023), providing individualized education and facilitating preparation for the future use of AI-based technological solutions, in particular in the process of mastering foreign language vocabulary (Capon-Sieber et al., 2022). Not banning or restricting ChatGPT, but developing students' cognitive activity can prevent cases of possible academic GPT dishonesty.

The main methodological recommendations that can be formulated on the basis of the study are as follows:

1. AI should be used according to predefined and agreed upon rules between students and teachers, while respecting the boundaries of academic integrity;
2. it is necessary to constantly check the results generated by AI;
3. programs based on neural networks are best used for summarizing results, compiling dictionaries, searching for contexts, searching and processing data;
4. the use of AI-based applications and programs is most appropriate for organizing independent extracurricular work of university students;
5. AI-based robotic interlocutors can be used to develop stable communication skills and correct mistakes in students' oral or written speech, which can partially replace communication with native speakers.

6. Conclusion

The use of AI, in particular ChatGPT, AI-Tutor, and Capilot neural networks, can improve the quality of the educational process, solve the problem of material variability, and become an effective assistant for both students and teachers. This study has identified and studied the following pedagogical possibilities of ChatGPT for the development of students' cognitive and linguistic activity: criticality, creativity, cognitive interest, motivation to learn, reflexivity and skills development in learning English. One of the key features of the effective use of AI is openness and agreement with teachers on the rules for using AI. Openness in the use of innovative technologies in education helps to create trust and understanding among participants in the educational process, which can reduce the level of academic dishonesty and increase students' emotional involvement in the educational process. The task of teachers is to teach students how to use all the possibilities of AI productively and honestly. The need for further restructuring of the educational process using AI is a critical factor in the development of modern education, but it requires the declaration of universally recognized «rules of the game» that will allow both students and teachers to clearly define the boundaries of academic integrity, automate learning and knowledge testing processes, and not perceive the use of AI as «compromising with one's own scientific conscience» but as a reliable assistant and advisor that can greatly facilitate the educational process for all participants.

The students in the experimental group demonstrated active use of AI to compile thematic glossaries, search for contexts of term usage, test vocabulary, and conduct dialogues, which stimulated their cognitive interest. The majority of respondents said they always check and analyze AI answers, which develops critical information analysis skills. It was also found that more than half of the students use ChatGPT instead of traditional search engines, which indicates a shift in the way they obtain and process knowledge. The results of the final tests showed higher achievements of the experimental group in mastering geological English terminology, understanding scientific texts, and listening. This confirms the effectiveness of integrating AI into the educational process to improve the quality of learning. Thus, the introduction of artificial intelligence tools is a

promising area for modernizing foreign language teaching methods in professional training.

Prospects for further research include the use of AI to create mind maps in a foreign language, systematize the terminology of various fields of knowledge, and study the didactic capabilities of various neural programs that have been actively emerging in recent years.

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The authors declare that there are no conflicts of interest, financial or otherwise, that could have influenced the research design, data collection, analysis, interpretation, or the presentation of the findings.