# PEDAGOGY AND EDUCATION

# The impact of Chat GPT on cognitive functions of university students

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**Abstract.** the article explores issues related to the influence of ChatGPT on the cognitive abilities of students. The purpose of this work is to study the pedagogical possibilities of using neural networks using the example of ChatGPT for the development of cognitive activity. ChatGPT is a tool that initiates a rethinking of the education system, contributing to the formation of the educational process of the future with the need to change technologies, methods, approaches and means of teaching. Understanding how ChatGPT works will allow educators to identify limitations in using this chatbot and artificial intelligence technologies in the educational process. Whatever the attitude towards artificial intelligence technologies, it should be recognized that they will soon become an integral part of the educational process, which means that every higher education teacher needs to learn how to use them effectively. In order for GPT chat to truly develop neuroplasticity and cognitive abilities, a sufficient level of education and IQ is required. Emotional IQ (EQ) is necessary to understand nuances, the effectiveness of formulations, and stimulate the imagination. A basic level of education is required to master any instrument. There's no way it can replace basic academic skills, emotional, rational, creative and critical thinking.
**Keywords:** *ChatGPT, cognitive functions, the impact of Chat GPT.*

**Main text introduction.** At the end of 2022, the academic and pedagogical community around the world was concerned about the launch of ChatGPT, a chat bot with artificial intelligence and extensive automatic text generation capabilities, which students happily began to use and abuse. However, along with concern, there came an understanding that the problem of the pedagogical capabilities of ChatGPT for the development of students' cognitive activity is extremely relevant and requires careful research, and the use of artificial intelligence in education opens up many—possibilities.

**Materials and methods.** At the same time, it should be emphasized that there is no extensive research on the effects of ChatGPT on the cognitive abilities of students. There are only fragmentary works in this direction [1-9].

Proceedings of the 15th International
Scientific and Practical Conference
«Scientific Research in XXI Century»

(February 16–18, 2024).
Ottawa, Canada

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In the process of preparing the article, methods such as analysis, synthesis, generalization, comparison and other methods were used.

**Results.** The study provided a definition of the concept of "cognitive activity". The pedagogical capabilities of ChatGPT for the development of cognitive activity related to the search, perception and processing of information are highlighted: opportunities for the development of critical thinking, creativity, cognitive interest, motivation to learn, reflexivity, and development of skills in the study of individual disciplines. The advantages and disadvantages of using ChatGPT in the educational process have been studied.

The purpose of this work is to study the pedagogical possibilities of using neural networks using the example of ChatGPT for the development of cognitive activity. ChatGPT is a tool that initiates a rethinking of the education system, contributing to the formation of the educational process of the future with the need to change technologies, methods, approaches and means of teaching. Understanding how ChatGPT works will allow educators to identify limitations in using this chatbot and artificial intelligence technologies in the educational process. Whatever the attitude towards artificial intelligence technologies, it should be recognized that they will soon become an integral part of the educational process, which means that every higher education teacher needs to learn how to use them effectively.

ChatGPT is capable of not only generating responses that imitate human ones, but also remembering search queries and learning independently 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 likelihood of the phenomenon of academic GPT dishonesty. By academic GPT dishonesty, we mean the type of cheating associated with completing educational work using ChatGPT, which students present as completed by themselves.

Christian Terwisch, a professor at the Wharton School of the University of Pennsylvania, published the first findings from the experimental use of ChatGPT for educational purposes:

1. ChatGPT does a great job with basic questions. The answers are not only correct, but also accompanied by logical

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explanations.

2. ChatGPT sometimes makes unexpected errors in relatively simple math calculations.

It is not bans or restrictions on the use of ChatGPT, but the development of cognitive activity in students that can prevent cases of possible academic GPT dishonesty.

By cognitive activity we understand the purposeful independent activity of the subject associated with the search, perception and processing of information, which involves cognitive, emotional, volitional mental processes and states, as well as various personality properties (abilities, temperament, character, orientation). We have identified the following cognitive indicators: perception, information analysis, attention, memory and speech.

Society is in a period of transition from traditional teaching methods to innovative ones, including the use of artificial intelligence.

The first step on this path should be to study the basics of artificial intelligence, including an introduction to programming methodology, the specifics of machine and deep learning (extracting algorithms and knowledge from data), creating, using and training neural networks. It is quite possible that in the near future, progressive universities around the world will introduce requirements for faculty to have competencies in the field of AI.

A study of the experience of scientists in using artificial intelligence in research work [1-9] made it possible to substantiate several important conclusions: first, as the results of search queries showed, ChatGPT is not able to provide the user with comprehensive information on the topic of work the first time. It should be borne in mind that the results obtained during the search process are determined by the accuracy of the query formulation. In addition, in order for the search results to be correct, the request must be voluminous and in some cases reaches more than a page. However, this is a problem, because if the user can competently compose a request of such a volume, he is unlikely to need the help of artificial intelligence;

Secondly, for a knowledgeable researcher, the obtained query results can and should raise questions related to the validity and reliability of the data obtained. There are cases of forgery or falsification of data on the part of ChatGPT, which incorrectly and incompletely represents scientific information. Using deliberately false input data certainly

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leads to false results;

Thirdly, ChatGPT resources are limited to the databases to which its developers have defined access. In this regard, as E. van Dis, J. Bollen, R. Van Rooij, V. Zuidema and K. Bockting and M. Halaweh note in their works, in cases where ChatGPT is not able to find and provide certain information, including scientific data, he begins to invent them, providing non-existent definitions of concepts, classifications, models or references to literature [3,9]. All these questions related to the reliability and reliability of the information obtained from ChatGPT and neural networks will force each researcher to carefully double-check it. This will turn out to be quite a time-consuming and resource-intensive task. In this regard, for many researchers, traditional and familiar methods of working with scientific information and writing scientific papers will be more effective than innovative ones. At least at the present time.

**Discussion.** To date, there has been little research into whether interaction with GPT chat promotes the development of neuroplasticity and the formation of new neural connections.

In order for GPT chat to truly develop neuroplasticity and cognitive abilities, a sufficient level of education and IQ is required. Emotional IQ (EQ) is necessary to understand nuances, the effectiveness of formulations, and stimulate the imagination. A basic level of education is required to master any instrument. There's no way it can replace basic academic skills, emotional, rational, creative and critical thinking.

Thus, a basic level of education is required to master any instrument. It cannot in any way act as a substitute for basic academic skills, emotional, creative and critical thinking.

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