



CHATGPT IN THE EDUCATIONAL PROCESS OF UKRAINE

Olena Krupko

PhD Chemical Sciences

ORCID.org/0000-0003-2799-3033

Assistant of the Department of Medical and Pharmaceutical Chemistry of
Bukovinian State Medical University,
Chernivtsi, Ukraine

Abstract. The article provides information on the use of ChatGPT on the territory of Ukraine. The possibilities of the chatbot, as well as its disadvantages and advantages, the consequences of the introduction of artificial intelligence into the educational process are considered. A survey of students was conducted regarding the use of the chatbot and in preparation for classes. The reliability of generated ChatGPT answers on questions of general and inorganic chemistry, analytical chemistry, as well as solving calculation problems on the topic of solutions was checked together with students.

Keywords: educational process, ChatGPT, chat bot, artificial intelligence.

Introduction.

The rapid development of the educational process with the introduction and application of modern and new technologies in order to develop and improve innovative methods and approaches to the educational process contributes to the general development of not only pupils, students, teachers, lecturers, but also the nation as a whole.

This has become especially important and relevant for the higher education of Ukraine in the period of distance learning due to the emergence of epidemic danger and the introduction of quarantine due to the spread of the COVID-19 infection on the territory of Ukraine in 2020-2021 and the beginning of Russia's open military invasion of Ukraine in early 2022. Currently, the majority of educational institutions of Ukraine (in territories where there are no active military operations) have started a mixed form of education, but it is not yet known how such a form of education will affect the success and quality of education seekers.

Analysis of recent research and publications. The explosion among the innovations of 2022 in Ukraine was the message from the Minister of Digital Transformation Mykhailo Fedorov about the use of ChatGPT in the territory controlled by Ukraine in free access. The OpenAI company introduced the ChatGPT neural network in November 2022, which works on the basis of artificial intelligence and generates answers to questions in text form using for this content, which is published in the Internet space by 2021 [1-2].

The purpose of this work is to study the possibilities of artificial intelligence ChatGPT and its use in the educational process in order to improve the quality of knowledge of the participants of the educational process.

Main text.

The modern development of higher education in Ukraine, despite all the problems that arose with the beginning of the full-scale invasion of the Russian Federation on the territory of our country, has not been stopped. Ukrainian educators continue to implement pan-European and global innovations to improve and develop national standards of higher education.



One of the new and popular technologies that the whole world is talking about is ChatGPT artificial intelligence. The prototype is based on the OpenAI GPT-3.5 model - an improved version of GPT-3, and a new GPT-4 model has already been introduced [3]. In order to start communicating with ChatGPT, you must first register using an email address and a mobile phone number, which is not a difficult step before communicating with the chatbot. Immediately, a lot of scammers appeared on the Internet with fake links, pages, links for registration and even demanding payment for using ChatGPT at a time when it is a free service, except for the ChatGPT Plus version, which can not only work with texts, but and process images.

You can communicate with ChatGPT in different languages, including Ukrainian. This contributed to the fact that even Ukrainians without knowledge of foreign languages show extremely high interest in ChatGPT. However, the chatbot often makes various errors when processing Ukrainian-language questions and translating the generated answers from English.

A chatbot with artificial intelligence can be used for various tasks, both theoretical and computational, or for writing a poem, a fairy tale, an article, making a translation into another language, selecting a selection of literary sources, etc.

Most of the discussion after the launch of ChatGPT arose from the fear that chatbots could replace humans in various industries in the future. Experts began to evaluate various professions for the possibility of replacing humans with artificial intelligence and to spread such information on the Internet [4-9]. Such a question did not escape educators. Asking yourself the question: "Can ChatGPT really replace the teacher in the educational process?", the answer can be more than confidently given that, in fact, everything is not so simple with the use of a chatbot in the educational process. It is important to note that when checked by various specialists, artificial intelligence gives false or non-existent information. According to each profession, the risk of a chatbot being able to replace a human is different.

For example, in order to teach medical students or pharmacists a practical skill, knowledge of artificial intelligence is not enough. Competencies must be involved here, which can only be acquired through practical skill, which ChatGPT can only talk about, give examples that were previously described in the literature, but not teach based on its own practical experience. Therefore, artificial intelligence can be used as an explanation and presentation of theoretical material or previously published materials. However, the drawback of ChatGPT is that even during the generation of theoretical material, students may have additional questions, after asking which, accordingly, the chatbot will start giving answers to the newly asked questions, while not reproducing the answer to the previously asked question. Of course, the developers will surely be able to improve the artificial intelligence, for example by limiting the set of questions on this topic with a mandatory continuation of the answer to the main question. It is also important to remember that the information base of artificial intelligence is filled with data until 2020, so it may give out-of-date information.

"What is the role of ChatGPT in the education of Ukraine today?" It is not possible to give a reliable answer to this question at such an initial stage of implementation and application of ChatGPT at different levels of education. However, by educating pupils, students, post-graduate students, researchers, teachers or lecturers on the legitimate use



of academic integrity, the use of chatbots can be encouraged and directed to the benefit of all participants in the educational process.

When surveying students of the 1st year of the Faculty of Pharmacy of the Bukovyna State Medical University, it was found that none of the 43 students use the ChatGPT chat, and more than 75% of the students do not even know what it is. After inviting students to sign up and explore the chatbot's capabilities together, only 5% did so. During the processing of the material, which was issued by artificial intelligence to five students on the same questions, it was established that the chat generates different answers to the same questions. Although the answers are generated and different, the same information is followed, which is formulated differently. ChatGPT also gave a false answer to a question about divalent silicon compounds. After asking additional clarifying questions, the chat corrected the error and justified why it was made. When checking for the possibility of calculation tasks in general and inorganic and analytical chemistry, ChatGPT works perfectly. To the question about the division of cations into analytical groups according to the acid-base classification, ChatGPT generated an incorrect answer: Pb^{2+} , Hg^{2+} , Bi^{3+} , Cu^{2+} , Cd^{2+} , As^{3+} , As^{5+} and Fe^{3+} cations were classified as cations of analytical group I according to the acid-base classification, combining them in one group of cations of the second, third, fourth, fifth and sixth analytical groups.

Of course, students can use artificial intelligence for their own purposes when preparing for classes and can even solve homework problems using a chatbot, but if they do not understand the solution algorithm, then they will not be able to solve a similar or different problem. This can easily be checked in pairs, for example, call a student to the blackboard and ask him to explain the problem solved at home.

Therefore, students need to be explained about the possibilities of ChatGPT, together with them to check the capabilities of the chat, and to explain that artificial intelligence should be used for the benefit of oneself, one's knowledge, skills, improvement of general and professional competences, and not just writing off the generated material and appropriating it, neglecting academic charity. Prohibiting the use of artificial intelligence when preparing for pairs, on the contrary, may encourage students to cheat and use the generated ChatGPT material as self-prepared. Information obtained from a chatbot may also be referenced, indicating that some information was generated by artificial intelligence. For example, using the help of artificial intelligence, the student can refine the information received, check the given answer with the materials of lectures, textbooks or other sources, draw a conclusion on the given material or conduct a comparative characterization, necessarily indicating that part of the material was prepared by ChatGPT, thus not violating the rules of academic integrity regarding the appropriation of someone else's material. Also, with the help of artificial intelligence, you can make a selection of literature or check the correctness of the translation of the text into a foreign language.

When asking students whether they will use artificial intelligence dishonestly, 3% of students admit that they can appropriate the material generated by the chatbot. Therefore, the work of teachers and lecturers in the educational process to explain that the generated ChatGPT material cannot be used as copyright should be at the core of all disciplines. It is necessary to convey to students that without basic knowledge, they



will not be able to understand whether artificial intelligence gives them true and reliable information on the question they are looking for.

It is already known about the unscrupulous use of ChatGPT in the European scientific world. For example, [10] provides information about a Spanish chemist who managed to publish 58 author's works in 2023 using ChatGPT.

No one knows how many such pseudo-works with generated material have already been published in scientific publications. We hope that in the near future an appropriate program will be created to check the text generated by artificial intelligence for anti-plagiarism.

The largest review article (more than 50 articles), which is covered in scientific journals about the impact of ChatGPT on education, is the work of the Chinese scientist Chung Kwan Lo [11], which describes the possibilities of the chatbot in various fields of science and the educational process, together with consideration of possible problems due to the use of artificial intelligence. Attention is focused on the need for training for the use of artificial intelligence in the educational process for both teachers and students, updating assessment methods in educational institutions, and academic integrity of all participants in the educational process.

Studying the possibilities of using ChatGPT in the educational process of Ukraine is currently at the beginning of the newest era of using artificial intelligence. The Ministry of Education and Science of Ukraine advertises on the ministry's website the first Ukrainian-language platform created by the educational project "Na Urok" based on ChatGPT - a special chat "Chat "Na Urok": communication with outstanding figures of the past" ([https://naurok.com.ua /chat](https://naurok.com.ua/chat)). This is the first step towards the introduction of artificial intelligence in the educational process of Ukraine [12].

Conclusions.

As a result of free access to the artificial intelligence of Ukrainian citizens, it became possible to use a chatbot for various purposes (writing text, solving problems, exercises, examples, creating algorithms, translating text into different languages, etc.). It is important to note that such use is not always legitimate in the field of academic integrity. Therefore, it is extremely important to educate everyone (students, teachers, students, teachers, etc.) who use the help of ChatGPT to write materials about the principles of academic integrity and not to forget about the rules of academic writing. This applies to all branches of science and all participants in the educational process.

Therefore, we will not be able to assess all the disadvantages or advantages of using ChatGPT in the educational process, as it takes time for such research.

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