

CHATGPT AND ITS INFLUENCE ON MODERN HIGHER EDUCATION

CHATGPT ТА ЙОГО ВПЛИВ НА СУЧАСНУ ВИЩУ ОСВІТУ

The article explores the positive and negative aspects of artificial intelligence and especially of ChatGPT's impact on modern teaching, learning and organisation of the educational process. The use of artificial intelligence in education has the potential to revolutionize teaching and learning from the personalized learning experiences to automating administrative tasks. The article analyses the impact of artificial intelligence on education and how ChatGPT can help enhance the student learning experience and support educators. The benefits of ChatGPT include personalized feedback, academic advising, and language practice, while ethical considerations include potential biases and inequalities in education. The article also discusses the potential limitations and ethical implications of ChatGPT, such as the risk of perpetuating biases and the importance of balancing technology and human interaction in education. The integration of artificial intelligence and for instance its language models like ChatGPT in higher education has been explored as a promising tool for enhancing student engagement and academic performance. Studies have examined the use of ChatGPT in various areas, including language learning, writing assistance, and personalized education.

However, the effectiveness of ChatGPT in improving academic outcomes may vary depending on the specific context and implementation of the technology. It is crucial to consider the ethical implications of using AI in education and to ensure that AI tools are used in a responsible and transparent manner.

The potential uses of ChatGPT and other AI language models in higher education are still being explored and developed, and it will be interesting to see how they continue to be integrated into educational settings in the future. Further research is needed to investigate the long-term impact of AI language models on student learning and to identify best practices for their implementation.

Key words: artificial intelligence, ChatGPT, higher education, language education, educational process.

У статті досліджено позитивні та негативні аспекти впровадження штучного інтелекту та, зокрема, впливу ChatGPT на

сучасне викладання, навчання та організацію навчального процесу. Використання штучного інтелекту в освіті має потенціал для запровадження значущих змін у викладанні та навчанні, починаючи від персоналізації навчального процесу до автоматизації адміністративних завдань. У статті аналізується вплив штучного інтелекту на освіту та те, як ChatGPT може допомогти покращити навчання студентів і підтримати викладачів. Переваги ChatGPT включають персоналізований зворотний зв'язок, академічні консультації та можливість запровадження мовної практики студентів, тоді як етичні міркування включають потенційні упередження та нерівні можливості в навчанні. У статті також обговорюються потенційні обмеження та етичні наслідки ChatGPT, такі як ризик збереження упереджень і важливість дотримання рівноваги між впровадженням технологій і збереженням людської взаємодії в освіті. Інтеграція штучного інтелекту та, наприклад, його мовних моделей, таких як ChatGPT, у вищу освіту розглядалася як перспективний інструмент для підвищення залученості студентів та академічної успішності.

Однак ефективність ChatGPT у покращенні академічних результатів може відрізнятися залежно від конкретного контексту та впровадження технології. Вкрай важливо враховувати етичні наслідки використання штучного інтелекту в освіті та гарантувати, що інструменти штучного інтелекту використовуються відповідально та прозоро.

Потенційне використання ChatGPT та інших мовних моделей штучного інтелекту у вищій освіті все ще досліджується та розвивається, і продовжувати досліджувати вплив їхньої інтеграції в освітні процеси в майбутньому. Подальші дослідження можуть бути проведені з метою вивчення довгострокового впливу мовних моделей штучного інтелекту на освітній процес і з метою визначення найбільш ефективної практики їхнього впровадження.

Ключові слова: штучний інтелект, ChatGPT, вища освіта, мовна освіта, навчальний процес.

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Problem statement. In recent years, the interest in the use and implementation of Artificial Intelligence (AI) in the education at all levels and especially in higher education has grown significantly. Artificial Intelligence has already transformed many industries, and education is not an exception. It became clear that the use of artificial intelligence in education has the potential to revolutionize the way of teaching and learning. ChatGPT (Chat Generative Pre-trained Transformer), a large language model trained by OpenAI, is one such example of artificial intelligence that became very popular during the last months and is considered to have a significant potential influence on many aspects and ways of modern teaching and learning.

Analysis of recent research and publications.

The impact of artificial intelligence on education has been studied by many researchers all over the world. Among them we can name Seo K., Tang J., Roll I. [1], Guilherme A. [2], García-Martínez I. [3] and others. Different aspects of implementation of artificial intelligence in language education was the topic of scientific searches by Schmidt T., Strasser T [4], Shadradgah T. A., Sa'di R. A. [6], Fenxiang Zhang [7] and other researchers. The role of AI in higher education was analysed by Popenici S., Kerr S. [5] and others.

ChatGPT as a popular modern representative of artificial intelligence products has the potential to transform higher education by providing personalized

and accessible learning experiences. Some researchers have explored the impact of ChatGPT in specific areas of higher education, such as language learning and academic advising. Among them Lo C. K. [8], Firaina R., Sulisworo D. [9], Cooper G. [10] and others. Overall, these studies suggest that ChatGPT can be an effective tool in education, providing personalized feedback, academic advising, and language practice. However, it is important to note that the effectiveness of ChatGPT can vary depending on the specific educational context and the way it is implemented.

Aim of research. In the article, we explore the impact of ChatGPT on higher education, including its benefits, and limitations. Artificial intelligence has the potential to transform the way we teach and learn, from personalized learning experiences to automating administrative tasks. We also discuss how ChatGPT can help to enhance the student learning experience and support educators in their teaching. Finally, we explore some of the ethical considerations surrounding the use of AI in education and the role of ChatGPT in shaping the future of higher education.

Results and discussion. Artificial intelligence has the potential to revolutionize education by providing personalized learning experiences, automating administrative tasks, and improving the effectiveness of educational programs. Fig. 1 depicts the spheres in which artificial intelligence can be implemented in education.

Let's study these spheres more precisely:

- *Personalized learning.* Artificial intelligence can analyse students' data to provide personalized learning experiences. By understanding each student's strengths and weaknesses, AI can provide customized instruction and adapt to their individual learning styles.

- *Adaptive testing.* Artificial intelligence can study student performance in real-time and adapt tests to their individual level of understanding. This allows for a more accurate assessment of student learning.

- *Automated grading.* AI can automate the grading process, allowing teachers to focus on providing feedback and improving student learning outcomes.

- *Intelligent tutoring systems.* AI can create intelligent tutoring systems that provide individualized

support to students, including feedback and guidance on homework assignments.

- *Virtual assistants.* AI-powered virtual assistants can help students with administrative tasks, such as scheduling classes and submitting assignments, helping to improve engagement and productivity.

- *Predictive analytics.* AI can be used to analyse student data and predict which students are at risk of falling behind, allowing teachers to provide targeted support and interventions to prevent them from falling further behind.

- *Curriculum development.* AI can be used to analyse vast amounts of educational data to identify patterns and trends, which can inform the development of more effective curricula.

Overall, artificial intelligence has the potential to revolutionize modern education, providing personalized learning experiences, improving teaching and learning outcomes, automating administrative tasks, and improving the effectiveness of educational programs. However, it is important to ensure that the use of artificial intelligence in modern education is ethical and that it does not replace the role of human teachers entirely.

It is important to note that the adoption of ChatGPT in higher education should be approached with caution, and it is essential to consider its potential limitations and ethical implications. For example, there is a risk that ChatGPT could perpetuate biases and inequalities in education, and there is a need to ensure that the technology is used in a way that supports diversity, equity, and inclusion. Additionally, it is important to maintain a balance between technology and human interaction in education, as the role of teachers remains essential in guiding and supporting student learning.

The emergence of artificial intelligence has provided new opportunities for enhancing the educational process. One such opportunity is the use of chatbots, particularly ChatGPT, in education. ChatGPT is a large language model that uses deep learning techniques to generate human-like text responses to natural language queries. It can understand and generate responses to a wide range of topics, making it a powerful tool for educational applications. ChatGPT

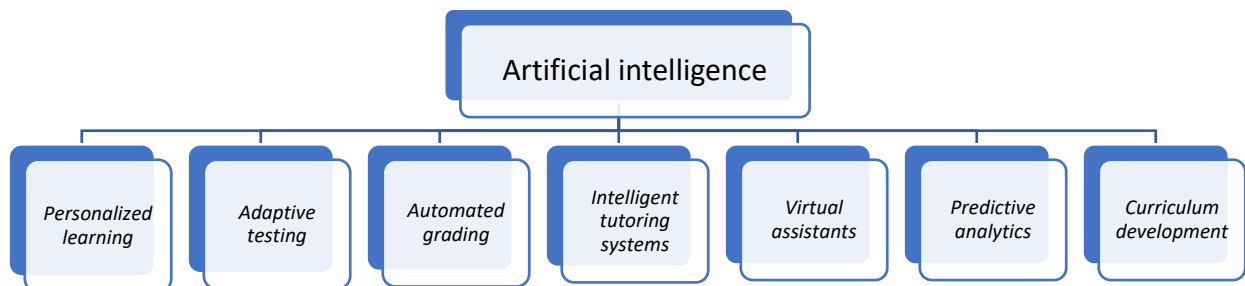


Figure 1. Spheres of artificial intelligence influence on education

has several advantages in education. They are represented in Figure 2.

ChatGPT has several advantages in education:

- it can provide personalized learning experiences to students. By analysing a student's queries and responses, ChatGPT can tailor its responses to the student's individual learning style and knowledge level. This can enhance the student's understanding and retention of the material, leading to improved academic performance.

- ChatGPT can act as a virtual tutor, providing students with immediate feedback and guidance. This can help students overcome the barriers to learning, such as lack of access to resources or guidance. ChatGPT can also identify areas where the student may be struggling and provide additional resources or assistance.

- it can enhance the accessibility of education. It can be accessed from anywhere, at any time, making it a valuable tool for distance learning and online education. It can also be integrated into existing learning management systems, making it easy for teachers to incorporate it into their lessons.

- ChatGPT can provide a safe and non-judgmental environment for students to ask questions and seek help. Many students may feel embarrassed or intimidated to ask questions in a classroom setting, but ChatGPT can provide a safe space for them to seek help without fear of judgment.

- it can also be used as a tool for assessment. It can generate quizzes and tests, and grade them automatically. This can save teachers time and effort, allowing them to focus on other aspects of teaching.

However, there are also some potential limitations of ChatGPT in education. One concern is the accuracy and reliability of the responses generated by the model. While ChatGPT is designed to generate human-like responses, it may still make errors

or provide inaccurate information. This underscores the importance of ensuring that ChatGPT is properly trained and tested before it is used in an educational setting.

Artificial intelligence is playing an increasingly important role in language education, offering a range of tools and resources to help students learn languages more effectively. Figure 3 represents some ways in which artificial intelligence is being used in language education.

So, the advantages of the implementation of artificial intelligence into language learning are the following:

- Automated language assessment: AI-powered language assessment tools can be used to automatically grade and provide feedback on written and spoken language assignments, freeing up teachers' time for more personalized feedback.

- Personalized language learning: AI can be used to personalize language learning by identifying individual learners' strengths and weaknesses and providing tailored exercises and learning materials to address them.

- Language translation: AI-powered translation tools are improving rapidly and can be used to help learners better understand language texts, audio, and video content in real-time.

- Chatbots and virtual assistants: AI-powered chatbots and virtual assistants can provide learners with immediate language practice and feedback. These systems can mimic human conversation and provide personalized feedback to learners.

- Adaptive learning: AI can be used to create adaptive language learning environments that provide personalized learning paths for each student based on their individual needs.

Overall, artificial intelligence can offer many benefits to language learners, including personalized

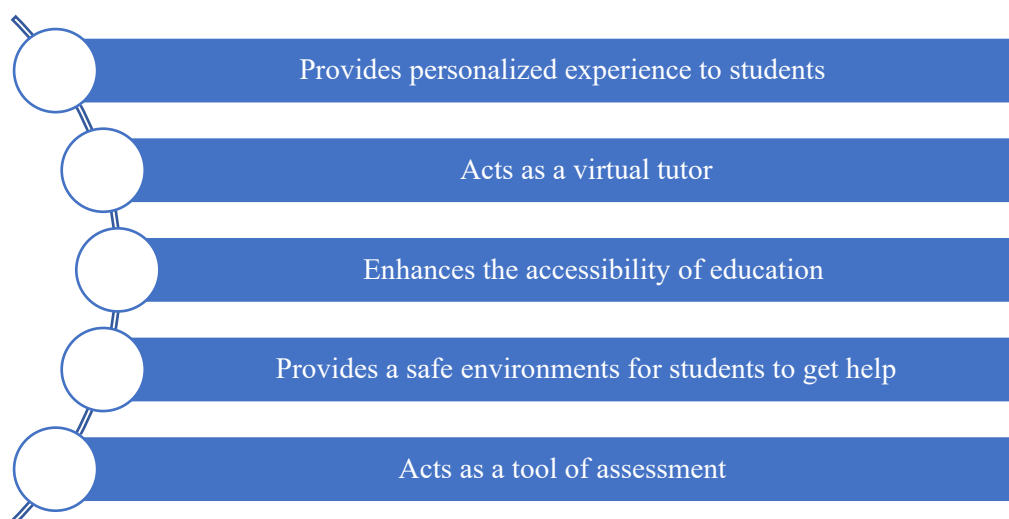


Figure 2. Advantages of ChatGPT in education

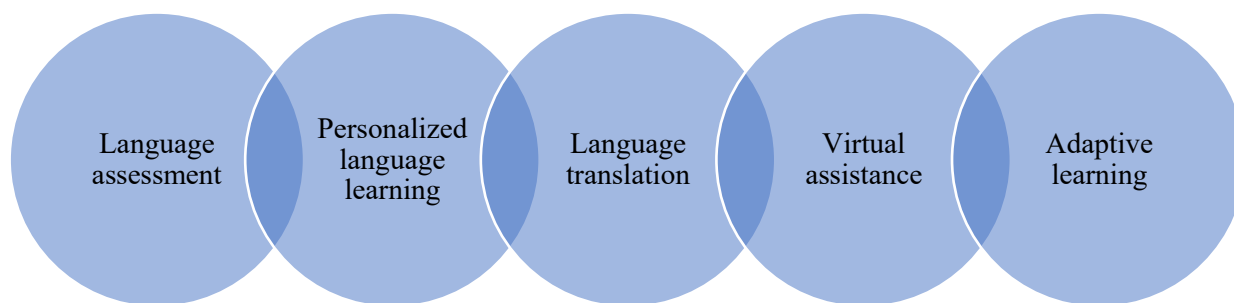


Figure 3. Use of AI in language learning

learning, instant feedback, and improved access to language resources. However, it is important to ensure that the use of artificial intelligence in language education is ethical and that it does not replace the role of human teachers entirely. Teachers still play an essential role in guiding learners, providing support, and ensuring effective learning outcomes.

Conclusions and research perspectives. In conclusion, we should admit that artificial intelligence in general and ChatGPT in particular is a powerful tool for enhancing the educational process. It has the potential to provide personalized learning experiences, act as a virtual tutor, enhance accessibility, and provide a safe space for students to seek help. However, it is important to ensure that AI is properly trained and tested, and used as a supplement to traditional teaching methods. As the technology continues to evolve, ChatGPT has the potential to revolutionize the way we teach and learn, so future research is needed to further explore the impact of ChatGPT in higher education and to address these concerns.

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