POSSIBILITIES OF USING ARTIFICIAL INTELLIGENCE IN THE SCHOOL COURSE OF COMPUTER SCIENCE

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In the context of the digital transformation of education, an important trend has been the active introduction of artificial intelligence (AI) tools into the educational process. According to the Concept of AI Development in Ukraine, one of the key areas is the use of such technologies in education to improve its quality and accessibility [1]. Researchers note that AI opens up new opportunities for personalizing learning, automating assessment, and implementing creative tasks [3, 4]. The number of international studies devoted to the impact of AI on pedagogy, teaching methods, and the role of the teacher is growing [5, 6], however, in domestic practice, the introduction of such technologies is only beginning to gain momentum, which makes further study of this topic relevant.

This article will consider some aspects of the possibilities of using artificial intelligence in the school computer science course.

In the modern education system, information technologies occupy a prominent place, and the rapid development of artificial intelligence opens up new horizons for teachers and students [2]. Computer science as an academic subject is most closely related to digital innovations, so it is becoming a natural environment for the implementation of AI [9, 10].

Artificial intelligence is a branch of computer science that develops systems capable of performing tasks that traditionally require human intelligence: speech recognition, decision-making, translation, learning [2]. The ideas of creating intelligent machines date back to the 1950s, but it was only in the 21st century that AI began to be actively implemented in everyday life, including education [3, 4].

In computer science lessons, AI can be implemented in several key areas. The first is personalized learning. Systems based on artificial intelligence analyze the student's progress, adapt the presentation of material according to his needs, and provide feedback in real time [6, 8]. This allows students to learn at their own pace, and teachers to support each one more effectively. The second direction is the use of chatbots and virtual assistants that can answer questions, help with solving problems, and even create educational tests. Thanks to this, students can independently deepen their knowledge, and the teacher can focus on individual work or creative tasks. The third direction is the use of AI as a tool for project activities [7]. Platforms like Teachable Machine allow you to create your own pattern recognition models without the need for programming, which makes AI accessible even to high school students.

Analysis of scientific research and practical experience of teachers on the possibilities of using AI in the study of computer science allows us to highlight a number of effective recommendations that have already been tested in practice:

1. Use ChatGPT as a virtual assistant in the lesson. For example, when studying programming languages (Python, JavaScript), students can turn to AI for syntax tips, receive explanations of errors, or ask to generate code fragments. In HTML/CSS lessons, ChatGPT will help you create web page templates, as well as explain how tags and styles work.

2. Integrate Teachable Machine into topics about algorithms, branching, and data processing. Students can create simple models of pattern or motion recognition and test how the system's behavior changes depending on the input data. This clearly illustrates the concepts of conditional operators and the logic of AI programs.

3. Create small projects. For example, "Make questions for AI on the topic of "Networks" - students formulate queries to ChatGPT and compare answers with the textbook; "Teach AI to recognize emotions" - using Teachable Machine, students collect data (facial expressions) and test the accuracy of the model; "History of AI" - ChatGPT helps students compile short biographies of prominent AI researchers or create a timeline of events.

4. Use generative AI for creative tasks. For example, creating comics using image generators on the topic of "Internet of Things" or "Bots and their role in the future". This contributes to the development of digital literacy and critical thinking.

5. Do not be afraid of mistakes. Experiments with AI models, such as changing learning parameters or analyzing incorrect results, teach students to critically evaluate technologies. The teacher in this process acts not only as a mentor, but also as a partner in research.

Science and Information Technologies in the Modern World

However, along with new opportunities, challenges also arise: the technical equipment of schools, the level of teacher training, ethical aspects (data processing, algorithmic bias). Despite this, even partial implementation of AI today already demonstrates positive changes in student motivation and levels of knowledge acquisition.

The analysis conducted shows that the topic of the article has been revealed - the main ones. Therefore, the possibilities of artificial intelligence can already be successfully implemented in the school computer science course today, in particular through personalized learning, interactive assistants and project activities. Despite the technical and ethical challenges, the advantages, in particular increasing motivation, individualization of the educational process and development of digital competencies, make AI a promising direction for school education. Further research should be focused on developing methodological recommendations for teachers, creating educational and methodological materials using AI, as well as on systematizing cases of successful application in Ukrainian schools.

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