

ARTIFICIAL INTELLIGENCE IN THE HANDS OF CHILDREN: EDUCATIONAL PROSPECTS AND CHALLENGES

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Artificial intelligence (AI) is rapidly transforming our society, and its influence is already being felt in various spheres of life, including education. Over the past decade, the use of AI in children's education has become a popular trend. From educational applications and virtual assistants to programmable toys and interactive platforms, AI offers tremendous potential to enhance the educational process. These technologies can facilitate more personalized learning, access to high-quality educational resources, and the development of important skills in children.

However, along with these benefits come significant challenges related to the ethical, psychological, and social aspects of using AI with children. Data privacy, technology dependence, and potential psychological impacts are just a few of the issues that require careful consideration. In this article, we will explore how artificial intelligence can be beneficial to children in education and discuss the potential risks and ways to mitigate them.

Educational Prospects of AI for Children

One of the main advantages of using artificial intelligence (AI) in education is the ability to create a personalized approach to learning. In the traditional education system, each teacher has to work with a classroom of students with different levels of knowledge, abilities, and interests. This often makes it impossible to fully meet the educational needs of every child. Here, AI comes to the rescue, capable of fundamentally changing this process.

AI algorithms can collect and analyze data on each student: their achievements, mistakes, learning speed, and even preferred learning methods. Based on this

information, personalized learning plans are created, which are adapted to the needs and characteristics of each child.

Access to High-Quality Educational Resources

One of the significant advantages of using artificial intelligence (AI) in education is the expansion of access to high-quality educational resources. In the traditional education system, high-quality educational materials and programs are often limited and not available to all students, especially in regions with limited resources. AI helps to overcome these barriers, making education more accessible and equitable. Let's look at how AI facilitates this process.

1. Online Education and Distance Learning

Thanks to AI, educational platforms can offer online courses and distance learning programs that were previously available only at top educational institutions. Platforms like Coursera, edX, and Udacity use AI to create interactive and adaptive courses that students from anywhere in the world can take. These courses are often developed by leading universities and experts in various fields, ensuring a high quality of education.

2. Personalized Content

AI allows adapting educational content to the needs and level of each student. Platforms such as DreamBox and Smart Sparrow utilize AI to analyze students' progress and provide learning materials that correspond to their current knowledge and skills. This ensures more effective learning and helps students grasp the material at their own level without feeling overwhelmed or, conversely, underestimated.

3. Multilingual Educational Materials

AI helps overcome language barriers by providing educational materials in various languages. For example, Google Translate, powered by AI, enables the translation of educational materials into multiple languages, making them accessible to students who speak different languages. Khan Academy, also utilizing AI, offers its courses in several languages, allowing students from around the world to receive quality education in their native language.

4. Access to Experts and Mentors

AI enables the creation of virtual assistants and chatbots that can provide students with real-time help and support. Systems like IBM Watson Tutor use AI to answer students' questions and provide them with additional information on the topics they are studying. This is particularly useful for those who do not have regular access to teachers or mentors.

5. Interactive and Multimedia Resources

AI allows the creation of interactive and multimedia educational resources that make the learning process more engaging and effective. For example, virtual and augmented reality (VR and AR), supported by AI, enable students to immerse themselves in the subjects they are studying and explore them interactively. Platforms

like Nearpod and zSpace use AI to create such experiences, which are especially beneficial for visual and hands-on learning.

6. Inclusive Education

AI helps create educational resources that cater to the needs of students with various physical and cognitive disabilities. For example, text materials can be automatically converted into audio format for visually impaired students, and subtitles and sign language can be added to video materials for hearing-impaired students. Platforms like Microsoft Immersive Reader use AI to provide such capabilities.

Numerous educational platforms using AI have already demonstrated their effectiveness. For example, Khan Academy, as mentioned earlier, provides high-quality learning materials to millions of students worldwide. Duolingo, a language learning platform, uses AI to adapt the learning process to each user, enabling them to achieve high results in learning foreign languages.

Challenges and Risks of Using AI in Children's Education

•Data Confidentiality and Security Issues

The use of AI in educational platforms involves the collection and analysis of large volumes of data about children. This raises serious concerns regarding the confidentiality and security of this information. There is a risk of data leaks, their use for marketing purposes, or even hacking attacks. Strict measures are necessary to protect data and transparent privacy policies so that parents and teachers can trust these technologies.

•Dependency on Technology

With the increasing use of AI in education, there is a risk that children will become overly dependent on technology. This can negatively affect their ability to think independently and solve problems without the help of AI. It is important to balance the use of technology with traditional teaching methods to develop a wide range of skills in children.

•Ethical and Moral Issues

AI in education raises a range of ethical and moral issues. For example, what should be the boundaries of AI intervention in a child's personal space? How to avoid bias and discrimination in AI algorithms? These questions require careful consideration and the development of ethical norms and standards for the use of AI in education.

•Psychological Impact

Intensive use of AI and other technologies can impact children's mental health. Spending extended periods in front of screens can lead to problems with concentration, sleep, and physical health. It is important to consider these aspects and develop educational programs that promote a healthy balance between virtual and real activities.

Artificial intelligence has tremendous potential to improve the educational process and provide children with new opportunities for learning and self-

development. However, alongside this, it is important to consider the potential risks associated with the use of AI in education. Only a comprehensive approach, including the development of ethical standards, teacher and parent training, balancing technology with traditional methods, and ongoing monitoring, will allow for the most effective use of AI for the benefit of children and their future.