

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON CHILDREN

Vinnitsia National Technical University

Abstract

This article explores the impact of artificial intelligence (AI) on children, focusing on its positive and negative effects on learning and development.

Keywords: Artificial intelligence, children, education, critical thinking, development.

Анотація

У цій статті досліджується вплив штучного інтелекту (ШІ) на дітей з акцентом на його позитивний та негативний ефект на навчання та розвиток.

Ключові слова: Штучний інтелект, діти, освіта, критичне мислення, розвиток.

Introduction

Artificial Intelligence (AI) has significantly influenced children's lives, shaping their learning, social interactions, and cognitive development. While AI-powered educational tools enhance personalized learning experiences, the technology also poses challenges.

Positive Effects of AI on Children

AI-driven educational platforms, such as adaptive learning systems, provide students with personalized learning paths based on their strengths and weaknesses [1]. These tools help children grasp complex subjects at their own pace, improving engagement and retention. Additionally, AI-powered language learning applications offer real-time feedback [2]. Such advancements create a more inclusive and accessible educational environment, fostering a culture of independent learning.

Moreover, AI-assisted tutors and chatbots support children in solving problems independently, fostering self-learning habits. AI also plays a crucial role in supporting children with disabilities. For example, speech recognition technology helps children with speech impairments communicate more effectively, while AI-powered text-to-speech applications assist visually impaired students in accessing digital content [3]. These innovations contribute to equal learning opportunities, enabling children of all abilities to thrive academically and socially.

Negative Effects of AI on Children

Despite its advantages, AI presents several risks to children's development. One major concern is its impact on critical thinking skills. As AI-generated answers become increasingly accessible, children may rely on them without analyzing information critically, reducing their problem-solving abilities [2]. This reliance can lead to passive learning, where students accept AI-generated content without questioning its validity. Encouraging children to verify information and think independently is essential to preventing intellectual stagnation.

AI also affects children's social skills. Excessive interaction with AI-based virtual assistants and chatbots can limit real-world communication experiences, leading to difficulties in developing empathy and emotional intelligence [3]. Children may become accustomed to interacting with AI, which lacks genuine emotions, making it harder for them to navigate human relationships effectively. Therefore, it is crucial to balance AI interaction with real-world social experiences to promote emotional intelligence.

Privacy concerns are another critical issue. AI systems often collect large amounts of personal data from children, raising concerns about data security and unauthorized access [1]. Many children may not fully understand how their information is used, potentially exposing them to cyber risks and targeted advertising.

Furthermore, AI-generated content, including deepfake videos and misinformation, poses psychological risks. Exposure to AI-created fake news can mislead children, affecting their understanding of reality. Social media algorithms, powered by AI, may also contribute to anxiety and low self-esteem by promoting unrealistic beauty standards and reinforcing echo chambers that limit diverse perspectives [2]. Teaching digital literacy and critical thinking skills is essential to help children navigate the vast and often misleading online world.

Conclusion

AI is transforming childhood education and daily life, offering both opportunities and challenges. While its tools enhance learning and accessibility, they also risk diminishing critical thinking, weakening social skills, and exposing children to privacy threats. Addressing these challenges requires a proactive approach: educating children on responsible AI use, improving digital literacy, and strengthening data protection policies. A balanced strategy, where AI supports but does not replace human interaction and reasoning, is essential to ensuring children benefit from technology without compromising their well-being.

REFERENCES

1. HealthyChildren.org. (2024). *How Will Artificial Intelligence (AI) Affect Children?* Retrieved from: https://www.healthychildren.org/English/family-life/Media/Pages/how-will-artificial-intelligence-AI-affect-children.aspx?utm_source=chatgpt.com
2. UNICEF. (2024). *How AI Can Have Negative Impacts on Children.* Retrieved from: https://www.unicef.ch/en/current/blog/2024-11-20/how-ai-can-have-negative-impacts-children?utm_source=chatgpt.com
3. Harvard Graduate School of Education. (2024). *The Impact of AI on Children's Development.* Retrieved from: https://www.gse.harvard.edu/ideas/edcast/24/10/impact-ai-childrens-development?utm_source=chatgpt.com

Явна Ольга Олександрівна – студентка групи ЗКН-24б, факультет інтелектуальних інформаційних технологій та автоматизації, Вінницький національний технічний університет, м. Вінниця. E-mail: o.yavnaa@gmail.com

Науковий керівник: Крютченко Олена Олександрівна, викладач англійської мови, кафедра іноземних мов, Вінницький національний технічний університет. E-mail: olena.kriut@gmail.com

Olha Yavna – a student of Faculty of Intelligent Information Technologies and Automation, 3CS-24b group, Vinnytsia National Technical University, Vinnytsia. E-mail: o.yavnaa@gmail.com

Scientific supervisor Kriutchenko Olena Oleksandrivna – a teacher of English, a Department of the Foreign Languages, Vinnytsia National Technical University. E-mail: olena.kriut@gmail.com