



Artificial Intelligence in Education: Opportunities, Challenges, and Future Pathways

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Abstract

Artificial Intelligence (AI) is changing education by making learning more personalized and effective. AI tools like smart tutoring systems, automatic grading, and data-based analysis help teachers plan better lessons and help students learn according to their needs. These developments create many opportunities to improve student engagement and learning results. However, along with these benefits, some serious ethical challenges also come. Issues like student data privacy, bias in AI systems, lack of transparency, accountability, and digital inequality create concerns about fairness and safety. If proper rules and safeguards are not followed, AI systems may increase social differences and put students' personal information at risk. This paper studies AI in education by looking at its opportunities, challenges, and future pathways, with special focus on ethical, safe, and fair use. Based on recent international research and policies, the study explains the importance of human-centered AI design, clear rules and regulations, and proper ethical guidelines. It also highlights the need for teacher training, AI awareness, and regular monitoring of AI systems to maintain transparency and responsibility. The paper concludes that responsible and inclusive use of AI can positively change education if strong ethical standards and fair policies guide its use. A balanced and regulated approach is necessary to build trustworthy AI systems that support quality education for everyone.

