

# Generative AI in Education: A Literature Review

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## Abstract

Generative AI has emerged as a transformative force in the field of education, providing innovative solutions that enhance democratic learner-centred experiences, personalise students' educational pathways, and support educators in their instructional roles. This paper examines the diverse applications of generative AI within educational settings, focusing on its ability to create tailored learning materials, facilitate immersive learning environments, and automate administrative tasks. By analysing recent literature, the study identifies key benefits and challenges of generative AI in educational settings. Moreover, the paper addresses the challenges associated with the integration of generative AI in education, such as concerns regarding data privacy and the need for adequate training for educators to effectively utilise these technologies. The implications of generative AI for the future of education are also explored, emphasising the necessity for ethical guidelines and equitable access to ensure that all students can benefit from these advancements. As generative AI continues to evolve, its potential to revolutionise teaching and learning processes becomes increasingly apparent, prompting a reevaluation of traditional educational paradigms. This paper aims to contribute to the ongoing discourse surrounding the role of AI in education, providing insights into how generative AI can be harnessed to create more personalised, engaging, and effective learning environments. Ultimately, the findings underscore the importance of collaboration among educators, technologists, and policymakers to navigate the complexities of integrating generative AI into educational practices, ensuring that its transformative potential is realised for the benefit of all learners.

**Keywords:** Generative AI, constructivist learning pedagogies, ethical guidelines, future of education