THE ROLE OF ARTIFICIAL INTELLIGENCE IN CREATIVE LEARNING: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Creativity is a key 21st-century skill, valued for innovation, problem-solving, and adaptability. AI tools like generative models and adaptive feedback systems have transformed how students develop creative skills and engage with knowledge. Using the PRISMA methodology, a structured search in SCOPUS and WoS (2015–2024) resulted in 16 relevant publications after removing duplicates and unrelated content. The analysis focused on theoretical frameworks, implementation strategies, and AI's impact on creativity and ethical challenges.

Regarding the relationship between AI and creativity, Kanakulya (2024) notes that AI can reshape creative processes but not replace human creativity. This aligns with Beghetto's (2019) concern that standardized assessments may restrict creative expression. Henriksen et al. (2024) reinforce this by advocating for a holistic approach that combines creativity and sustainability in education, with AI acting as a catalyst for new creative processes. Savvani and Liapis (2019) show how educational games with AI tools stimulate creativity and critical thinking by encouraging problem-solving strategies. Lim et al. (2024) also show that students' drawings were more creative than AI-generated ones, but AI allows students to explore different artistic approaches.

AI's capacity for personalization also emerges as a key theme. Medina-Zuta et al. (2023) highlight AI's ability to adapt learning environments to individual needs, and Ali et al. (2024a) show that text-to-image AI tools enhance visual creativity. Collaborative learning also benefits from AI integration, as demonstrated by Daungcharone et al. (2023) and Tantry et al. (2024), who found that AI tools boost motivation and problem-solving skills. Alves Moreira et al. (2019) add that AI-supported artifact creation stimulates critical thinking and practical creativity. Finally, Ali et al. (2024b) illustrate how AI-assisted narrative creation enables students to explore new forms of creative expression.

Truesdell et al. (2023) show that AI enhances creative expression and artistic development. Mahapatra et al. (2021) report that AI-supported flipped classroom models increase student engagement and creativity by offering greater control over learning. Ragone et al. (2024) suggest that AI creates more inclusive learning environments, but Raimi et al. (2024) warn that excessive automation may homogenize creativity. Imadi et al. (2023) find that AI literacy increases creativity and problem-solving capacity.

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Despite its benefits, AI in education raises ethical and social concerns. Beghetto (2019) warns that standardized assessments may undermine originality and critical thinking. Ali et al. (2024a) highlight algorithmic bias and data privacy issues, while Truesdell et al. (2023) warn that automation could replace creative professionals. Henriksen et al. (2024) emphasize the environmental impact of AI, stressing the need for sustainable technological practices.

This review shows that AI significantly enhances creative learning by enabling personalization, experimentation, and innovation. It fosters critical thinking, problem-solving, and artistic expression through generative models, personalization tools, and collaborative approaches in basic and higher education. However, challenges remain regarding ethics, data privacy, and over-reliance on automation. Future research should focus on AI models that preserve human agency, originality, and diversity. Promoting AI literacy among students and educators will be key to navigating AI's role in education.

Keywords: artificial intelligence, creative learning, personalized learning, ethical challenges, education, student engagement

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