



Artificial Intelligence in Education Writing Assistance, Tutoring, Creativity, and Ethical Concerns


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ABSTRACT

This article explores the dual nature of AI in education. On one hand, AI tools like grammar checkers and writing assistants elevate education by improving writing quality and structure. They offer real-time guidance and personalized learning support, acting as virtual tutors. However, excessive reliance on AI raises concerns about potential declines in critical thinking and problem-solving skills. Overdependence on AI-generated content can bypass cognitive processes, weakening analytical and creative abilities. Additionally, the risk of AI hallucination, where fabricated or misleading information is generated, highlights the importance of critically evaluating AI outputs to maintain academic integrity. To harness AI's potential while mitigating its risks, a balanced approach is essential. AI should be used as an assistive tool, not a replacement for human cognition. Ethical guidelines, critical evaluation practices, and skill development are crucial to foster independent thinking and prepare students for a technology-driven future.

1. INTRODUCTION OF ARTIFICIAL INTELLIGENCE IN EDUCATION

The introduction of Artificial Intelligence (AI) has dramatically reshaped various industries, and education is no exception. While the first beta versions of AI tools were introduced as early as June

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2020, it wasn't until November 22 of a subsequent year that AI truly spiked in public awareness and use (Leiter et al., 2024). Since then, AI has made its mark as a revolutionary tool in the education sector, helping students approach assignments with greater efficiency, enhancing the quality of their work, and even transforming how teachers interact with their students. However, while AI presents vast potential, its widespread use also raises concerns about overreliance and the potential decline of critical thinking and problem-solving skills among students.

AI's most notable influence in education has been through the development of writing assistants. These tools, such as AI-guided writing assistants, provide an innovative means to improve the quality of student assignments. These tools are able to detect and correct a wide range of grammatical errors, including issues with syntax, punctuation, and spelling, thus offering immediate feedback to students (Al-Sabahi et al., 2023). Furthermore, they can help students organize their thoughts, structure outlines, and even generate initial drafts. By doing so, AI writing assistants enable students to focus on refining their ideas and improving the overall coherence of their work (Song & Song, 2023).

The accessibility and convenience of AI tools like these are undeniable. When students input their ideas into AI systems, the tools can help them organize and develop their thoughts into cohesive, well-structured assignments. Unlike traditional search engines such that of a Google browser, where students typically find sources and information to piece together, AI writing tools offer a more interactive and supportive process. AI systems can synthesize these inputs into coherent drafts, providing suggestions for revisions and improving the clarity of the writing (Pividori & Greene, 2024). This process can substantially improve the overall quality of students' assignments, allowing them to maximize their output and enhance their writing skills.

However, despite these advantages, there is an increasing concern over the potential negative impacts of overreliance on AI in educational settings. One of the main issues with widespread use of AI is that it could contribute to a decline in students' critical thinking and problem-solving abilities. As students grow accustomed to having AI tools handle much of the cognitive load associated with writing and organizing their work, they may become less inclined to develop their own creative and analytical thinking (Cui & Alias, 2024). In particular, the ease with which AI tools assist students might lead to an overdependence on these technologies, limiting the opportunity for students to practice their own problem-solving skills.

Moreover, AI's potential to take over routine tasks could inadvertently degrade the development of essential skills, such as creativity and original thought. The process of critical thinking, argumentation, and idea formulation can be compromised when students rely too heavily on AI-generated content. For instance, students may skip the step of drafting their own initial ideas or exploring different approaches to an assignment. Instead, they may use AI to generate initial drafts, thereby bypassing a valuable opportunity for intellectual engagement (Çela & Potluri 2024). Over time, this reliance on AI could create a dependency where students struggle to think critically and independently.

Another crucial concern in the use of AI tools is the phenomenon of "AI Hallucination." This term refers to situations where AI generates seemingly credible but entirely fabricated information, often including references or sources that do not exist (Jančařík & Dušek, 2024). This presents a major challenge in ensuring the credibility of AI-generated content. Students may be unaware that the references provided by the AI are not real, and thus, they may inadvertently include false or misleading information in their assignments. This issue underscores the importance of critical evaluation when using AI tools, as students need to be vigilant in checking the validity of AI-generated references and verifying the accuracy of the information provided.

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