Impact of Generative AI On Student Critical thinking Skill

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Abstract: *Generative Artificial Intelligence (AI) has rapidly emerged as a transformative technology in the field of education. Tools such as AI-based chatbots, automated content generators, and intelligent tutoring systems are increasingly used by students for learning, problem solving, and completing academic tasks. While these technologies provide quick access to information and enhance productivity, their growing use has raised concerns about their potential impact on students' critical thinking abilities. Critical thinking is an essential cognitive skill that enables learners to analyze information, evaluate arguments, and make logical decisions. This study examines the impact of generative AI tools on the development of students' critical thinking skills in modern educational environments. The research explores both the positive and negative effects of generative AI on learning behavior, problem-solving approaches, and independent thinking among students. On one hand, generative AI can support learning by providing explanations, examples, and interactive assistance that encourage deeper understanding of complex topics. On the other hand, excessive reliance on AI-generated responses may reduce students' ability to think independently, analyze problems critically, and develop original ideas. The study analyzes how students interact with generative AI tools in academic settings and evaluates their influence on cognitive development and learning outcomes. The findings highlight the importance of integrating generative AI in education in a balanced and responsible manner to ensure that it enhances learning without weakening essential analytical skills. The study also emphasizes the need for educators to design instructional strategies that promote critical thinking while using AI as a supportive educational tool rather than a replacement for intellectual effort.*

Keywords: Generative Artificial Intelligence, Critical Thinking, Student Learning, Educational Technology, AI in Education, Cognitive Skills, Digital Learning