



IMPACT OF CHATGPT ON EDUCATION: A LITERATURE REVIEW

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ABSTRACT The rapid development of generative artificial intelligence has created new opportunities and challenges for the education sector. Among these technologies, ChatGPT has attracted considerable attention because of its ability to provide instant responses, explanations, personalized learning support, writing assistance, and educational content. This review examines the impact of ChatGPT on education, with particular emphasis on its effects on student learning, academic achievement, engagement, teaching practices, and higher-order thinking. A review of existing literature indicates that ChatGPT can positively influence academic performance, student engagement, motivation, and some aspects of higher-order thinking when it is used appropriately and integrated with conventional teaching methods. Recent meta-analyses provide empirical support for these benefits, including moderate positive effects on student learning outcomes and academic achievement. At the same time, the literature identifies important challenges, including academic dishonesty, overdependence on AI, inaccurate or fabricated information, privacy concerns, bias, and potential reductions in independent learning. Systematic reviews also indicate that effective implementation requires teachers to develop appropriate knowledge and skills for using ChatGPT and to guide students in critically evaluating AI-generated information. Therefore, ChatGPT should be considered a supportive educational technology rather than a replacement for teachers or independent student learning.

KEYWORDS : ChatGPT, artificial intelligence, student learning, student engagement, generative AI,**Back ground of the study**

The emergence of generative artificial intelligence (AI) has significantly influenced the education sector. Among the most widely discussed AI tools is ChatGPT, a conversational AI system capable of generating human-like responses, explaining concepts, summarizing information, creating written content, and assisting with problem-solving. Since its public release, researchers have increasingly examined its potential to transform teaching and learning. The literature presents ChatGPT as both an educational opportunity and a source of significant challenges, particularly concerning academic integrity, accuracy, critical thinking, and students' dependence on AI.

ChatGPT as an Educational Tool

Existing literature suggests that ChatGPT can support students by providing immediate and personalized assistance. Students can use the system to ask questions, request explanations at different levels of difficulty, generate examples, and receive feedback on their writing. This can make learning more accessible and flexible.

ChatGPT Impact on Student Learning

A major theme in the literature is the potential of ChatGPT to enhance students' learning experiences. Because ChatGPT can provide explanations and examples on demand, it may function as an additional learning resource outside the classroom. Students can use it to clarify difficult topics and explore alternative explanations. However, researchers have questioned whether frequent reliance on AI-generated answers necessarily produces deeper learning. If students simply copy responses without evaluating or processing them, ChatGPT may reduce opportunities for independent reasoning. Consequently, the educational value of ChatGPT may depend less on the technology itself and more on how students use it. Research on AI-supported learning therefore increasingly emphasizes AI literacy—the ability to understand, evaluates, and appropriately uses AI-generated information. Students need to recognize that ChatGPT can produce convincing but incorrect information and should verify important claims using reliable academic sources.

ChatGPT and Academic Writing

Another important area of research concerns academic writing. ChatGPT can help students brainstorm ideas, organize arguments, improve grammar, summarize material, and obtain feedback on drafts. These capabilities may be particularly useful for students who have difficulties with language or academic writing. At the same time, the literature raises concerns about authorship and academic integrity. Cotton et al. (2023) discuss the challenges that ChatGPT creates for academic integrity, particularly when students submit AI-generated work as their own. This has forced educational institutions to reconsider traditional approaches to assessment and plagiarism. The issue is more complex than simply determining whether AI was used. Researchers have suggested that educators should focus on teaching

students' ethical and transparent AI use, rather than relying exclusively on AI-detection systems. Assignments that require personal reflection, critical analysis, oral presentations, or demonstration of the learning process may reduce inappropriate dependence on generative AI.

ChatGPT and Teachers

The literature also identifies potential benefits for educators. ChatGPT can assist teachers in generating lesson ideas, discussion questions, examples, quizzes, learning activities, and preliminary teaching materials. This could reduce time spent on some routine tasks and allow teachers to concentrate more on interaction with students. However, AI-generated teaching materials require human review. ChatGPT may produce inaccurate, outdated, biased, or contextually inappropriate information. Therefore, teachers remain essential for evaluating content, understanding students' needs, and providing pedagogical judgment. The literature consequently tends to view ChatGPT as a supporting tool rather than a replacement for teachers. Human expertise remains important for assessment, emotional support, classroom management, ethical decision-making, and developing students' higher-order thinking skills.

OBJECTIVES OF THE STUDY:

1. To examine the Importance of ChatGPT in Education
2. Identify the benefits of Chat GPT in enhancing teaching and students learning

Literature Review:

Deng et al. (2025) conducted a systematic review and meta-analysis of 69 experimental studies published between 2022 and 2024. The study examined how ChatGPT affects different dimensions of student learning. The findings showed that ChatGPT generally improved academic performance, affective-motivational outcomes, and higher-order thinking tendencies, while reducing students' mental effort. However, the researchers found no significant effect on self-efficacy. They also noted methodological limitations in existing studies, including insufficient sample-size planning and concerns about how learning was measured after interventions. Relevance: This is one of the strongest studies to cite because it synthesizes experimental evidence rather than relying only on opinions or surveys.

Wu et al. (2026) conducted a meta-analysis of 35 experimental and quasi-experimental studies involving 4,193 participants. The study found a moderately positive overall effect of ChatGPT on student learning outcomes, with an effect size of $g = 0.670$. The researchers reported improvements in both cognitive and non-cognitive outcomes. The effect varied according to subject, duration of intervention, and instructional approach. The strongest effects were reported in areas including physics, chemistry, and English, while combining ChatGPT with traditional teaching methods produced particularly positive results. Relevance: This study provides quantitative evidence that ChatGPT can improve learning when it is integrated appropriately into instruction.

Meta-Analytic Study (2026) examined 66 studies and 129 effect sizes concerning ChatGPT use among undergraduate students. The study reported a large positive effect (Hedges' $g = 1.14$) on undergraduate learning outcomes. The researchers concluded that ChatGPT can have substantial benefits for undergraduate learning across different academic disciplines, although the results should be interpreted in relation to differences in how ChatGPT was implemented across studies. Relevance: This study is particularly useful if your research focuses on higher education or university students.

Tlili et al.(2026) examined ChatGPT as a case study of chatbots in education. Their research identified opportunities such as personalized learning, accessibility, feedback, and support for teaching and learning. At the same time, they identified concerns involving misinformation, academic integrity, privacy, and the changing role of teachers. Relevance: This study can be used to establish the benefits and challenges of ChatGPT in education.

Kasneci et al. (2023) argue that large language models such as ChatGPT have considerable potential in education because they can support personalized learning, tutoring, brainstorming, and content creation. The authors also emphasize that these benefits depend on responsible implementation and appropriate human supervision.

Tlili et al. (2023) examined ChatGPT from an educational perspective and identified opportunities including personalized learning, improved accessibility, and assistance with teaching activities. However, they also highlighted concerns related to misinformation, academic dishonesty, privacy, and the changing role of educators.

Research Methodology:

The study adopts a descriptive research design to explore the significance, Importance, benefits and challenges of Chat GPT in education. The approach is qualitative, utilizing content analysis to review existing literature on the topic. Key aspects of the methodology include.

Data Collection: Secondary data were sourced from peer-reviewed journal articles, academic publications and reputable online databases, studies published from 2023 to 2026 were prioritized to ensure relevance and recency.

Analysis Process: A content analysis framework was employed to identify recurring themes, insights, and trends in the reviewed literature. The data were categorized into thematic areas such as significance, Importance, benefits and challenges of Chat GPT in education.

Scope of the study: The research focuses on Impact of Chat GPT in education used in diverse contexts. Both qualitative and quantitative aspects of previous studies were examined to provide a holistic understanding.

LIMITATIONS:

As the study relies on secondary data, findings are interpretative and dependent on the quality of reviewed literature. The absence of primary data collection limits the scope for contextual insights.

Findings of the study: From the literature review it can be analyzed that:

- ChatGPT generally improved academic performance, affective-motivational outcomes, and higher-order thinking tendencies, while reducing students' mental effort.
- Moderately positive overall effect of ChatGPT on student learning outcomes. The researchers reported improvements in both cognitive and non-cognitive outcomes. The effect varied according to subject, duration of intervention, and instructional approach.
- ChatGPT can have substantial benefits for undergraduate learning across different academic disciplines
- Identified opportunities such as personalized learning, accessibility, feedback, and support for teaching and learning
- ChatGPT have considerable potential in education because they can support personalized learning, tutoring, brainstorming, and content creation.

CONCLUSION & SUGGESTIONS:

The literature indicates that ChatGPT has considerable potential to influence education by providing personalized assistance, supporting academic writing, helping teachers prepare educational materials, and increasing access to learning resources. At the same time, concerns

regarding academic integrity, misinformation, privacy, bias, over-dependence, and reduced independent thinking cannot be ignored. Overall, existing research suggests that the educational impact of ChatGPT is neither entirely positive nor entirely negative. Its effectiveness depends largely on the way it is integrated into teaching and learning. Appropriate guidance, AI literacy, teacher supervision, ethical policies, and redesigned assessment practices are therefore essential. Future research should move beyond identifying the advantages and disadvantages of ChatGPT and investigate evidence-based approaches for integrating generative AI into education while preserving academic integrity and developing students' independent intellectual abilities.

The most important recommendation is that education systems should adopt a balanced approach to ChatGPT. Completely rejecting the technology may prevent students from developing the AI skills increasingly required in modern society, while unrestricted use may create problems related to academic integrity and independent learning. A combination of AI literacy, teacher guidance, ethical policies, critical thinking, and innovative assessment can help maximize the educational benefits of ChatGPT while minimizing its potential risks.

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