

## **THE USE OF CHATGPT IN EDUCATION: A LITERATURE REVIEW ON BENEFITS, CHALLENGES, AND STRATEGIES**

**Ziat Emilia Syafitri<sup>1</sup>, Dhea Sarfita<sup>2</sup>, Ina Silfina<sup>3</sup>, Dwi Yuli Rakhmawati<sup>4</sup>, Yoyok Soesatyo<sup>5</sup>, Retno Mustika Dewi<sup>6</sup>, Tri Sudarwanto<sup>7</sup>**

<sup>1,2,3,4,5,6,7</sup>Faculty of Economic and Business, Surabaya State University, Jl. Ketintang, Ketintang, Kec. Gayungan, Kota Surabaya, Jawa Timur 60231

E-mail: [24080925001@mhs.unesa.ac.id](mailto:24080925001@mhs.unesa.ac.id); [24080925005@mhs.unesa.ac.id](mailto:24080925005@mhs.unesa.ac.id); [24080925007@mhs.unesa.ac.id](mailto:24080925007@mhs.unesa.ac.id); [dwirakhmawati@unesa.ac.id](mailto:dwirakhmawati@unesa.ac.id); [yoyoksoesatyo@unesa.ac.id](mailto:yoyoksoesatyo@unesa.ac.id); [retnomustika@unesa.ac.id](mailto:retnomustika@unesa.ac.id); [trisudarwanto@unesa.ac.id](mailto:trisudarwanto@unesa.ac.id)

### **ABSTRACT**

The development of artificial intelligence (AI) has brought significant changes in various fields, including education. One of the increasingly popular implementations of AI is ChatGPT, a language model capable of providing interactive and informative responses. This study discusses the role of ChatGPT in education, its benefits in improving the quality of learning, and the challenges faced in its use. The method used in this study is a literature review, in which various scientific sources are analyzed to understand the impact of this technology on the academic world. The results show that ChatGPT can help students understand the material, improve the efficiency of educators in preparing teaching materials, and enable personalized learning. However, there are challenges that need to be considered, such as the potential for dependence on AI, the risk of plagiarism, and the accuracy of the information produced. Therefore, academic regulations and adequate digital literacy are needed so that this technology can be utilized optimally without reducing academic integrity.

**Key words:** *ChatGPT, artificial intelligence, education, learning, digital literacy*

### **INTRODUCTION**

The adaptation of technological developments in the world of education is essential to improve the quality of learning (Sacramento et al., 2021). The presence of technology has provided many benefits, such as facilitating access to learning, creating innovative learning methods, and enabling students to discover new and evolving information (Isma et al., 2022). One technological development that has had a significant impact on education is artificial intelligence (AI). AI has transformed teaching methods and administrative tasks in education (Dhamija & Dhamija, 2025).

ChatGPT, as a form of AI that is growing in popularity, offers a more interactive and personalized learning experience. This deep learning model is capable of understanding and generating text naturally, so it can function as a virtual tutor, academic assistant, and even a tool for teachers in developing learning materials (Mollick & Mollick, 2023). Several studies show that ChatGPT can improve students' understanding of the material, provide virtual assistant services, and help increase activity in learning (Zein, 2023). In addition, ChatGPT can also be used to quickly produce scientific papers, which shows great potential in supporting students' writing skills (Anastassia Amellia Kharis et al., 2024).

However, despite ChatGPT's various benefits, the challenges in its use cannot be ignored. Several studies show that ChatGPT can increase students' dependence on technology, which in turn can reduce their critical thinking skills (Supriyono et al., 2024). In addition, although ChatGPT can be a learning aid, many educators still consider its use unethical because it can encourage dishonest academic practices (Dwihadiah et al., 2024). This is also reinforced by research by Cotton et al. (2023), which found that ChatGPT can increase the risk of plagiarism and academic dishonesty, thus requiring clear regulations on its use.

Furthermore, the validity of the information generated by ChatGPT is still debatable. According to research by Kasneci et al. (2023), ChatGPT does not always provide accurate answers and is sometimes biased towards the information in its database. Another challenge is the potential for ChatGPT to replace social interaction between teachers and students, which can have an impact on the social and emotional aspects of the learning process (Salmi et al., 2023). Therefore, clear policies regarding its use are needed so that this AI can be utilized optimally without sacrificing the quality of learning and human interaction in the academic world (Cotton et al., 2023).

Various studies have discussed how AI, particularly ChatGPT, can contribute to the world of education. Research by Setiawan & Luthfiyani (2023) highlights how ChatGPT can increase student motivation to learn, but also faces challenges related to plagiarism and technological dependence. Another study by Amellia & Haqqi (2023) highlights that ChatGPT can be used to improve academic writing skills, but it still requires guidance and evaluation from educators to ensure that the results meet academic standards.

Research on the use of ChatGPT in education is still evolving. Therefore, this study aims to analyze various literature discussing the benefits, challenges, and opportunities in implementing ChatGPT in education. By

understanding these aspects, this study is expected to provide deeper insights and recommendations for educators and policymakers in optimizing the effective and ethical use of this technology.

## METHOD

This study uses the literature review method to analyze and synthesize various relevant literature sources related to the use of ChatGPT in education. According to Sugiyono (2019), the literature review method is a systematic approach to collecting, analyzing, and summarizing data from various existing literature sources. The purpose of this method is to identify the benefits, challenges, and optimization strategies for using ChatGPT in the context of learning. First, the researcher identified research questions focused on three main aspects: the benefits of using ChatGPT in education, the challenges faced, and the optimization strategies that can be applied. Sugiyono (2019) emphasizes that identifying clear research questions is an important first step to ensure the focus and direction of the research.

Next, a literature search was conducted using academic databases such as Google Scholar and Scopus, using keywords such as "ChatGPT in education," "AI in learning," and "Ethical issues in AI education." The search was limited to articles published between 2021 and 2025 to ensure relevance to the latest developments. According to Sugiyono (2019), selecting relevant and up-to-date literature sources is crucial to ensure that research is based on accurate and current data.

After the literature was collected, a selection process was carried out based on inclusion and exclusion criteria. The inclusion criteria included articles discussing the use of ChatGPT or AI in education, whether empirical studies, literature reviews, or theoretical articles, as well as articles published in English or Indonesian. Meanwhile, exclusion criteria included articles that were not relevant to the research topic, did not have peer review, or only discussed AI in general without focusing on ChatGPT or education. Sugiyono (2019) stated that the literature selection process must be carried out strictly to ensure that only quality and relevant sources are used in the research.

After selection, the data was analyzed and synthesized to identify the main themes that emerged, such as benefits, challenges, and optimization strategies. The synthesis process was carried out by comparing and combining findings from various studies to produce a comprehensive understanding. According to Sugiyono (2019), data analysis and synthesis are critical steps in literature review research to identify patterns and significant findings from various literature sources. With this literature review method, this study is expected to provide a comprehensive overview of the role of ChatGPT in education as well as useful recommendations for education practitioners and policy makers.

## RESULTS AND DISCUSSION

ChatGPT has brought significant changes to the world of education by providing various conveniences for students and educators in accessing and managing learning. Supriyono et al. (2024) show that ChatGPT increases student engagement in learning through a more adaptive learning experience. This technology can function as a virtual tutor, providing additional explanations anytime without time and place limitations (Kurnia Ramadhan et al., 2023). In addition, research by Dhamija & Dhamija, (2025) found that ChatGPT helps reduce the administrative workload for educators, allowing them to focus more on developing more effective teaching methods.

However, the use of ChatGPT also poses various challenges. According to (Dwihadiah et al., 2024), although academics' awareness of ChatGPT is high, there is no social system that clearly regulates its use. The majority of educators still consider the use of AI in learning to be controversial due to the potential for academic cheating and a lack of in-depth understanding on the part of students. This is in line with the findings of Cotton et al. (2023), who found that ChatGPT increases the risk of plagiarism and academic integrity issues, thus requiring strict regulations on its use.

### 3.1. Benefits of Using ChatGPT in Education

One of the main benefits of ChatGPT in education is that it increases accessibility and equality in learning. Kasneci et al. (2023) found that ChatGPT can help students from remote areas obtain information and teaching materials more easily, bridging the educational gap between urban and rural areas. With ChatGPT, students can learn anytime and anywhere without being limited by time and place. Research by Zein (2023) also shows that ChatGPT has the potential to improve student understanding by providing quick access to information and virtual assistant services. In addition, research by Setiawan & Luthfiyani (2023) highlights that the use of ChatGPT in the Merdeka Curriculum can increase student motivation and learning outcomes.

Furthermore, ChatGPT enables a more personalized learning experience by tailoring learning materials to individual needs. (Teräs, 2022) revealed that AI can adapt to students' learning styles by providing responses that are more suited to their preferences. Cotton et al. (2023) found that students who received feedback from AI were more motivated to learn because of the quick responses that were tailored to their level of understanding. Research by Amellia & Haqqi (2023) also shows that ChatGPT can be used to improve academic writing skills by utilizing effective prompts. In an experiment, ChatGPT was able to produce a 693-word scientific paper in about 7 minutes, demonstrating its great potential in supporting the writing skills of students in schools and universities.

Educators also benefit significantly from using ChatGPT in the teaching process. According to research by Dhamija & Dhamija (2025), AI can help teachers find teaching materials, create exam questions, and provide automatic feedback on student assignments. Research by Suharmawan (2023) found that ChatGPT can be used to translate languages, provide recommendations, and help students complete assignments and solve problems. In addition, research by Anastassia Amellia Kharis et al. (2024) shows that ChatGPT can assist in academic writing, enabling students to be more productive in completing their academic assignments.

### **3.2. Challenges of Using ChatGPT in Education**

Despite its many benefits, the application of ChatGPT in education also faces a number of challenges that need to be considered. One of the main concerns is the potential for students to become overly dependent on AI in completing academic assignments. Zein (2023) found that one of the biggest risks of using ChatGPT is excessive dependence by students, which can reduce their creativity and analytical skills. A study by Amellia & Haqqi (2023) also highlights that although ChatGPT can improve efficiency in writing academic papers, guidance and evaluation from educators are still needed to ensure that the results meet academic standards.

In addition, ChatGPT still faces challenges in the accuracy of the information it generates. Kasneci et al. (2023) emphasize that ChatGPT does not always provide accurate answers or answers that are appropriate for the correct academic context. This is reinforced by Cotton et al. (2023), who highlight that AI is still prone to information bias and inaccuracy in answering academic questions. Therefore, students need to be taught to always verify the answers provided by AI so that they do not accept information at face value.

Ethical and academic integrity issues also pose challenges in the application of ChatGPT in education. According to research by Cotton et al. (2023), the use of AI in completing academic assignments can increase the risk of plagiarism and academic cheating. Research by Salmi & Setiyanti (2023) also shows that ChatGPT has the potential to replace social interaction between lecturers and students, which can reduce the quality of communication and collaboration in learning. A study by Subiyantoro et al. (2023) found that although artificial intelligence can improve the accessibility and personalization of learning, there are still concerns about how AI can affect students' critical thinking skills.

Another challenge is the lack of clear regulations regarding the use of ChatGPT in academia. According to research by Dwihadiah et al. (2023), the majority of educators still consider the use of AI in learning to be unethical because it can reduce students' intellectual efforts. Cotton et al. (2023) emphasize that universities need to develop more sophisticated plagiarism detection policies and systems to prevent the misuse of this technology in academia.

### **3.3. Strategies for Optimizing the Use of ChatGPT in Education**

In order for ChatGPT to be used in education to provide maximum benefits without compromising the quality of learning, several strategies need to be implemented. First, digital literacy training for educators and students is very important so that they can use ChatGPT effectively and ethically in learning. According to Mollick & Mollick (2023), workshops on AI literacy can raise awareness of the benefits and risks of AI in learning. Second, educational institutions need to develop clear policies regarding the limitations and methods of AI use in order to continue to encourage critical thinking skills in students. Cotton et al. (2023) suggest that universities and schools implement strict regulations regarding the use of AI in academic assignments in order to maintain academic integrity. In addition, a study by Setiawan & Luthfiyani (2023) emphasizes that educational policies regulating the limits of ChatGPT use in learning must be developed immediately so that this AI is not misused. Third, the integration of AI with balanced learning methods needs to be carried out, where ChatGPT is used as a tool, not as a substitute for interaction between students and teachers. Dhamija & Dhamija (2025) highlight that combining AI with traditional learning methods can create a more balanced and effective learning experience. In a study by Amellia Kharis et al. (2024), it was found that ChatGPT should be used to support academic writing skills, but it still requires evaluation by educators to ensure that students understand the concepts they are writing about.

With the right implementation strategies, ChatGPT can be an innovation that supports educational transformation without eliminating the essence of human-centered learning. Therefore, there needs to be synergy between technology, regulations, and appropriate pedagogical approaches so that the use of AI truly provides optimal benefits for the world of education.

## **CONCLUSION**

ChatGPT has had a significant impact on the world of education by providing more flexible learning access, improving educator efficiency, and helping students better understand the material. This technology enables personalization in learning, assists in the preparation of academic materials, and increases student engagement. However, there are challenges in its use, such as the potential for student dependence on AI, the risk of plagiarism, and the accuracy of the information generated. In addition, the lack of clear regulations regarding the use of ChatGPT in academia is one of the main obstacles. To overcome these challenges, several strategies are needed, including digital literacy training for educators and students so that they are able to use ChatGPT effectively and ethically. Educational institutions also need to develop academic regulations in the form of clear policies and guidelines to prevent misuse and maintain academic integrity. In addition, it is important to integrate AI with

conventional learning methods, where ChatGPT is used as a tool, not a substitute for direct interaction between educators and students. Students must also be taught to always verify information obtained from AI to avoid the spread of inaccurate or biased information. With the right strategies, ChatGPT can be an innovation that supports educational transformation without eliminating the essential values in the teaching and learning process.

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