

The Educational Impact Challenge of ChatGPT AI: An Overview

تحديات التأثير التعليمي لذكاء الاصطناعي شات جي تي

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Abstract:

In today's electronic age, the assimilation of artificial intelligence (AI) into education is an inevitable phenomenon. With the potential to revolutionize traditional teaching and learning methods, AI brings new resources to the classroom, along with their possible uses in teaching and the challenges they present. Modern chatbots such as Chat GPT and their associated algorithms that can mimic human communication have many benefits, although some of these as applied in the classroom bring real-world difficulties. This study explores the educational impact of AI ChatGPT. Even though AI, particularly ChatGPT, is important and helps the education system, several common problems have been identified and highlighted. These issues are thought to be a starting point for future research into how to solve and improve them. This study aims to answer two research questions by examining the common effects found in prior studies of the use of this technology in education, both internally and externally, particularly for teachers and students, as well as by identifying and discussing the difficulties and barriers involved, while encouraging ethical and data protection use.

Keywords: AI, ChatGPT, AI in education, ChatGPT's impact, ChatGPT's challenges.

الملخص

في عصرنا الإلكتروني، يُعدّ دمج الذكاء الاصطناعي في التعليم ظاهرة حتمية. ومع قدرته على إحداث ثورة في أساليب التدريس والتعلم التقليدية، يُقدّم الذكاء الاصطناعي موارد جديدة للفصول الدراسية، إلى جانب استخداماته المُحتملة في التدريس والتحديات التي يُمثّلها. وتُقدّم روبوتات الدردشة الحديثة، مثل Chat GPT والخوارزميات المرتبطة بها، والتي تُحاكي التواصل البشري، فوائدَ عديدة، على الرغم من أن بعضها، عند تطبيقه في الفصول الدراسية، يُثير صعوباتٍ واقعية. تستكشف هذه الدراسة الأثر التعليمي لـ Chat GPT للذكاء الاصطناعي. على الرغم من أهمية الذكاء الاصطناعي، وخاصةً Chat GPT، ودعّمه للنظام التعليمي، فقد تمّ تحديد وتسليط الضوء على العديد من المشكلات الشائعة. ويُعتقد أن هذه المشكلات تُشكّل نقطة انطلاق لأبحاث مستقبلية حول كيفية حلها وتحسينها. تهدف هذه الدراسة إلى الإجابة على سؤالين بحثيين من خلال دراسة الآثار الشائعة التي وُجدت في الدراسات السابقة لاستخدام هذه التقنية في التعليم، داخليًا وخارجيًا، وخاصةً للمعلمين والطلاب، بالإضافة إلى تحديد الصعوبات والعوائق المرتبطة بها ومناقشتها، مع تشجيع الاستخدام الأخلاقي وحماية البيانات.

الكلمات المفتاحية: الذكاء الاصطناعي، الذكاء الاصطناعي في التعليم، تأثير الشات جي تي بي، تحديات الشات جي تي.

1. Introduction

Artificial intelligence (AI) is increasingly being used in a variety of areas, including education. For schools and colleges, AI applications are becoming essential, whether for assisting staff, “smart” educational systems, automated evaluation, or tailored learning. The rapid growth of social media platforms and the introduction of several phenomena through user comments have made AI crucial for both identifying negative conduct and enhancing a vital aspect of society: education for everyone. AI has the potential to revolutionize education by making it more efficient, interesting, and customized. Natural language processing enhances the learning process (Aljohani et al., 2023.; Gopal, 2023) especially in ChatGPT. AI is transforming all domains, but particularly education. It's like having a smart human machine in your pocket. The way we learn has been profoundly impacted by AI technologies, especially because deep learning technologies have emerged and developed so quickly. However, AI in education has been a unified academic research area since at least the 1980s.

There are two methods of AI in education: using AI to improve learning, gather insight, and measure learning; and developing AI-based solutions for classrooms (Gopal, 2023).

The use of AI in education has a lot of possible advantages. One of its most important educational benefits is personalized learning, which lets students' study at their own speed and in a way that best fits their learning style, and students may perform better as a result (Adiguzel et al., 2023). Furthermore, in addition to saving teachers time and increasing productivity, chatbots, automated grading and assessment, and intelligent tutoring systems can provide more reliable and consistent feedback (Al-Smadi, 2023). ChatGPT has been a significant development in language-generating tasks. As such, teachers can make data-driven decisions by using AI to improve data analysis. AI can also improve student participation by providing engaging and dynamic learning experiences (Adiguzel et al., 2023).

Additionally, the incorporation of ChatGPT into educational settings has generated a range of viewpoints and discussions. On one hand, it is commonly known to help teachers and promote learning. However, important considerations and concerns are being raised about the effects of reliance on it in terms of academic integrity and the potential for misuse (Gopal, 2023). Regarding the reliability of AI's information when seeking ideas or recommendations for educational purposes, up to 64.4% of students in (Nguyen et al. ,2024) study survey sample

to enter text. believe that ChatGPT's material ranges from "trusted" to "totally trustworthy". However, 23.3% of the students disagreed with ChatGPT to varying degrees, while 12.3% (nine students) had no view (Figure 1).

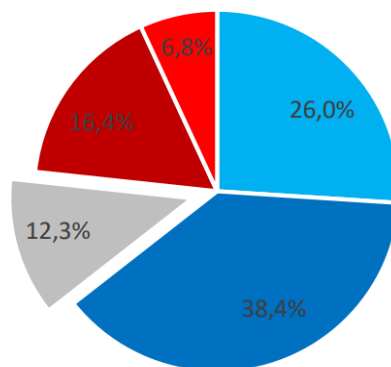


Figure 1: Students' levels of trust in ChatGPT (Nguyen et al., 2024).

This study seeks to understand the effects of ChatGPT by analyzing prior research conducted over the last five years according to certain standards. The generation of research questions (RQ), selection of source materials (electronic databases), discussion of the findings, and summarization are the primary steps in conducting the review. Two major RQs are investigated in this rapid review paper:

RQ1: How could ChatGPT AI improve instruction and learning?

RQ2: What potential challenges would ChatGPT trigger and general issues?

The paper is organized into the following sections: methods, related work review, discussion, and conclusion and research directions, with prior studies referenced throughout according to their subject matter.

2. Methods

This section outlines the study's methodology and the sample of studies that were used in accordance with its goals.

The following criteria for inclusion were established to select the sample studies to answer the review's RQs:

- Papers and research from electronic databases such as Scopus, Google Scholar, IEEE, and online digital library databases.
- Publications released within the past five years (i.e., 2020–2025).
- Publications found in index databases and conference proceedings (non-systematic).
- Results of key search terms: "AI ChatGPT in education," "impact of ChatGPT on learner."
- Deleting duplicates and studies that did not contain the keyword *ChatGPT*.

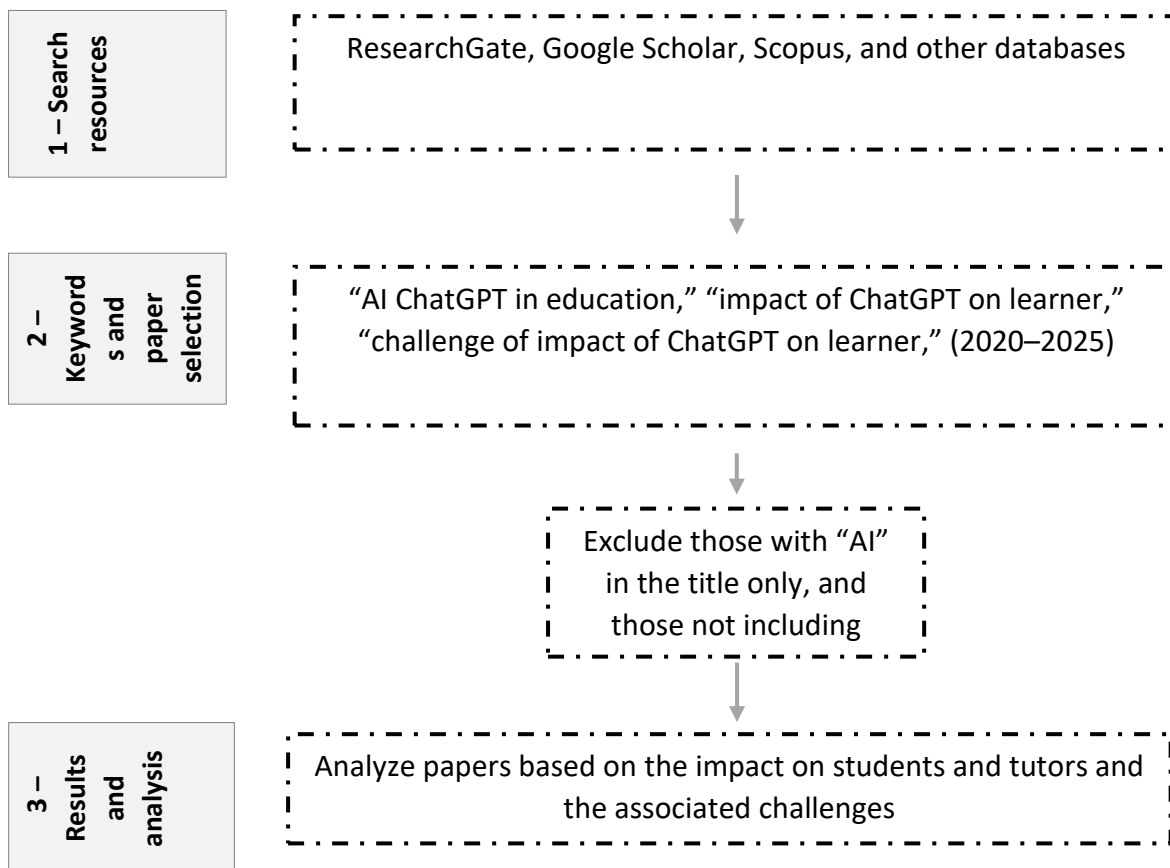


Figure 2: Method chart

3. Review of related work

According to the review of related literature from the past five years, ChatGPT AI’s use in education has expanded quickly. ChatGPT has been utilized as an interactive learning tool, virtual tutor, learning assistant, and assignment corrector in several educational settings. Increasing the accessibility of learning resources, offering prompt, tailored feedback, and promoting student involvement and motivation to study are just a few advantages of implementing ChatGPT AI in the classroom. However, certain obstacles must be overcome, such as ethical and data privacy issues, and technological constraints. This research assumption led to a search and analysis of the literature using the learners’ and educators’ perspectives as a starting point. The following sections categorize the main issues associated with all uses.

3.1 The learners’ and teachers’ perspectives

(Annuš’s 2023) study investigates ChatGPT’s application in the field of education. It discusses the possible advantages and difficulties of incorporating chatbots into teaching and learning procedures. The study also covers the implications for

teachers and students from various angles, for example, in assisting teachers to create supplementary materials, tests, and assignments, thus enriching the curriculum and helping students' personal and developmental learning. However, the most challenging aspect of using ChatGPT AI to advance education is discussed. (Thi Nguyen et al. 2024) assess the effect of ChatGPT on the learning habits of students from Ho Chi Minh City University of Technology and Education (HCMUTE), integrating methods from both qualitative and quantitative research. Students utilize ChatGPT for learning and information retrieval, and many believe it facilitates tasks such as idea generation and assignment completion. It was also found to be useful for academic activities for instructors in the learning area. However, concerns were voiced regarding an excessive dependence on ChatGPT in addition to moral issues including data privacy, information veracity, and plagiarism.

(Grassini ,2023) discusses advanced AI models' applications in educational settings. The study finds that for students, ChatGPT technology has the potential to greatly improve educational experiences and pedagogical procedures in the classroom, and shows promise in automating and enhancing grading systems. Meanwhile, teachers can utilize AI-generated reports to supply effective student feedback and assessments and AI can contribute to impartial grading and assist in exam preparation. Although AI tools may lower workloads, they may also result in job losses in the education sector. In addition, biases in training data can impair AI's objectivity and evaluation capabilities.

(Oranga ,2023) conducts a literature evaluation on the benefits and problems of AI in education, focusing on ChatGPT. For all users of ChatGPT for educational purposes, personalized learning experiences were found to have adapted to individual needs and speed.

With AI, learners can access material at any time of the day or night. It also enhances accessibility for people with disabilities through text-based interactions, and instant feedback on assignments and tests allows for rapid revisions. It also gives access to a large knowledge base on a variety of topics, and grammar corrections and conversational practice help students' language skills. Nevertheless, there is still a limitation in terms of actual understanding and critical thinking capacities. Limited-context knowledge can result in improper responses.

(Baidoo-Anu and Owusu Ansah ,2023) evaluated publicly available resources between November 2022 and March 2023 to review ChatGPT's interaction, merits, shortcomings, and consequences. Their research shows that resolving student

misunderstandings can improve learning results. AI can automate essay grading, which saves professors time, and delivers consistent feedback. ChatGPT also facilitates language translations and interactive learning experiences. On the other hand, adaptive learning systems that employ ChatGPT can modify teaching approaches in terms of student performance. Thus, collaboration among educators, academics, and politicians is crucial for safe AI incorporation. There is further research that supports these findings, such as (Viorennita et al. ,2023), which is employed to understand previous research, identify knowledge gaps, and develop a theoretical basis for future research. As a result, it helps with jobs such as essay writing and coding, which increases efficiency, and can help with writing and lesson planning, which allows for faster production of materials.

AI has the potential to influence language acquisition in higher education. However, research on chatbots in education is still in its early stages, with opportunities for future inquiry. Ethical problems about academic integrity and plagiarism arise with the employment of ChatGPT. Furthermore, (Pokkakillath and Suleri ,2023) add that the impact of ChatGPT on education is expected to be significant and pervasive. In addition, the accuracy of the data produced by AI systems is a matter of concern. Moreover, while plagiarism detection software is improving, it cannot be 100% effective against content produced by AI. In contrast, even though ChatGPT gives instructors and other stakeholders in the educational system access to academic resources and self-learning tools, there are serious worries about potential student abuse and job displacement (Abdillah et al., 2023). Related to this, (Tossell et al.,2024) looked at how students used ChatGPT for writing essays. To learn more about students' perceptions, both qualitative and quantitative assessments were carried out. Although they pointed out problems with accuracy and feedback, participants thought ChatGPT was useful, and students preferred instructor supervision of grading via ChatGPT. Although they encountered difficulties with ChatGPT's usability, pupils acknowledged the educational benefit.

3.2The main challenge of ChatGPT AI

(Sharma et al. ,2023) outline the possible advantages and disadvantages of implementing ChatGPT in the classroom. Although it can help to provide instructional content and support personalized learning, questions are expressed regarding its limitations in comprehending context, managing difficult subjects, and the possibility of encouraging pupils to become dependent on technology (García-López et al.,2025).

(Chinonso et al. ,2023) explain ChatGPT's benefits as a conversational agent that can support interactive educational activities. They do, however, also highlight certain shortcomings, such as the possibility of inaccurate information and responses' improper citation. This dichotomy highlights the necessity of integrating AI tools in educational settings carefully to optimize advantages and minimize hazards. Even though using AI technologies is strongly advised, it is important to consider its limits.

(Rapp et al.,2021) claim that judging a chatbot merely based on its usefulness, efficacy, and capacity to satisfy and engage users is insufficient. First, it presents moral questions about possible deceit and abuse. Instead of interacting with chatbots, users might think they are speaking with actual people (Adamopoulou & Moussiades, 2020). There are significant worries about how ChatGPT "may manipulate and deceive people," according to the Deputy Director General of the European Consumer Organization (BEUC) (Melián-González, 2021). Russia, China, Venezuela, Belarus, and Iran have already banned ChatGPT on the grounds that it disseminates political propaganda from the United States (Xia et al., 2022).

Chatbot programming and development present another significant obstacle (Dwivedi et al., 2021). Computational linguistics and natural language processing systems also raise some of the most important possible problems, including failure of the dialogue system, the effect of social chatbots on interpersonal communication, and problems with system performance (Jia et al., 2021). It is important to note that the input data determines the chatbot's accuracy in providing information.

The following table summarizes the most important issues regarding the use of ChatGPT AI in education.

Table 1: The most common issues for ChatGPT AI in education

Issues	Explain
Responsible use:	Educational institutions should develop frameworks for the responsible use of AI, ensuring that students understand its limitations (Leng, 2024).
Ethical:	The consequences of AI use in education, especially regarding academic integrity, must be considered (Kiryakova & Angelova, 2023) and in (Ly, R., & Ly, B.,2025).
Training and support:	Continuous teacher training on AI tools is essential to maximize their potential and mitigate risks(Heng & Sol, 2023).
Research directions:	Further studies are needed to explore the long-term effects of AI on education and to develop best practices for its integration(Chinonso et al., 2023).

4. Discussion

As previously stated, to address the research questions, this study was predicated on two research objectives, defined at the outset of this study: reviewing the findings from earlier studies that discussed the effects of Chat GPT on students and academic practitioners, and consolidating common problems.

This research has found that most studies in the sample were conducted at the peak of interest in and use of AI, particularly ChatGPT, was lot in the beginning in 2023 until now in education, such as (Thi Nguyen et al. 2024), (Grassini ,2023) (Annuš's 2023) , but there is still a gap in terms of the accuracy and reliability of information when dependent on all information without checking it. This conclusion was drawn from an aggregate analysis of scientific papers summarized from the previous five years. The figure below shows the number and distribution of publication dates of the scientific studies sampled in this study based on various databases, whether it discusses the upsides of ChatGPT in education or the issues and obstacles.

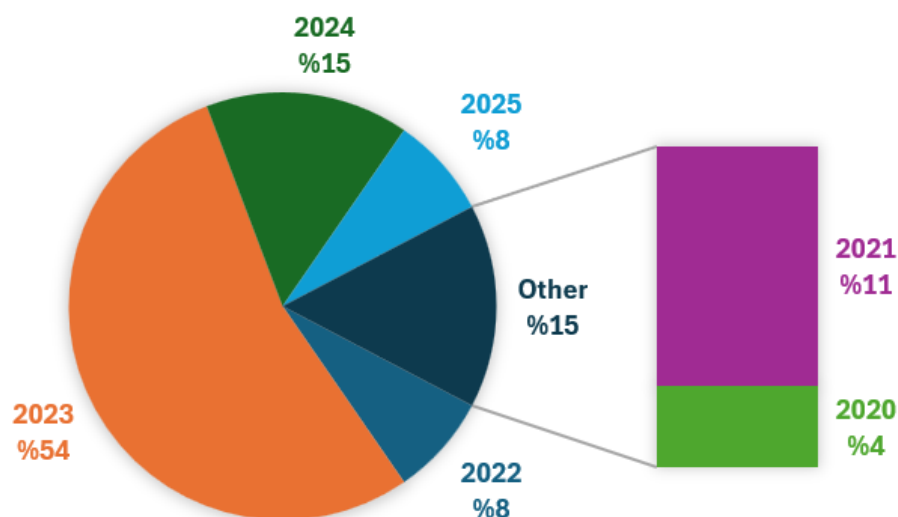


Figure 3: Publication dates of studies review

In summary, the future of education lies in effectively combining human interaction with AI technologies to foster a more personalized and efficient learning environment. However, further control is required for proper data collocation. Indeed, because there are occasional conflicts between requirements and some of ChatGPT's responses are out of context such as in studies((Leng, 2024), (Kiryakova & Angelova, 2023) and in (Ly, R., & Ly, B.,2025), we are eager to see this technology develop in terms of the two most crucial aspects: more privacy and a logical framework appropriate for human use.

5. Conclusion and future research directions

This paper concludes that AI chatbots such as ChatGPT have a lot of potential to improve education but also come with drawbacks that need to be addressed. It highlights the need for cautious supervision and critical thought when integrating AI into education for all students and teachers.

The research addressed two key questions: what are the positive aspects of ChatGPT's impact on teachers and on students' education, and what are the main obstacles? It consulted a wide range of research, some of which calls for good practice, such as being careful to identify and correct any inaccurate data and covering other significant points that constituted a significant challenge.

Therefore, every study consulted recommends that future investigations concentrate on the long-term effects of AI tools on learning outcomes and ethical implementation frameworks, as well as the influence of AI on academic engagement. More oversight, privacy, and ethical integrity can be ensured if supported by appropriate tools. Future research trends are made possible by one crucial point: because there are methods that assist AI in safeguarding information and guaranteeing its correctness, growing its capacity to assist users is not as necessary. Additionally, the study missing survey data on students and academic teachers utilizing ChatGPT is required.

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