Communications in Mathematics and Applications
Vol. 14, No. 5, pp. 1799–1813, 2023
ISSN 0975-8607 (online); 0976-5905 (print)
Published by RGN Publications
DOI: 10.26713/cma.v14i5.2687

http://www.rgnpublications.com

Research Article

Tutoring and Education: Identifying the Opportunities and Challenges of ChatGPT Among Students

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Received: September 22, 2023 **Accepted:** November 5, 2023

Abstract. In recent years, a significant number of enhancements are observed in the field of artificial intelligence. ChatGPT is one of the growing technologies which are trained to provide a better understanding of several aspects. ChatGPT can assist the learners with their projects, homework and detailed briefing about different topics with an interactive learning experience. This systematic literature review aims to identify the opportunities and challenges of ChatGPT among students specifically for tutoring and education. As part of systematic literature review, the study accesses various research databases and filters them to identify the opportunities and challenges of ChatGPT among students. The study provides a comparison of current literature to examine the existing limitations and suggests the countermeasures to overcome the identified challenges. The findings of the study provides a detailed explanation of the potential benefits and the limitation of implementing the ChatGPT in the educational environment, in addition to this significant insight into its most effective use for students via an in-depth examination of current literature. Finally, the goal of this systematic review is to add to an extensive understanding basis that can educate teachers, researchers, and administrators on the successful use of ChatGPT in tutoring and education, enabling enhanced learning experiences for students in the digital era. Despite these valuable insights, the study has an impediment that the study completely relies on the systematic literature review which gives a scope for the future researchers to accomplish a quantitative study by using a real time database.

Keywords. ChatGPT, Students, Education, Tutoring, Artificial intelligence, Challenges, Opportunities

Mathematics Subject Classification (2020). 62R07, 68P30

1. Introduction

Artificial intelligence generated content is one of the most engrossing technologies which supports the artificial intelligence users to generate videos, text and image automatically in accordance with the personalized instructions (Wu *et al*. [22]). Experts are looking at *Automated Feedback Systems* (AFS) to help students learn better by providing natural-sounding and thorough replies. This is motivated by recent advances in pre-trained language models, such as ChatGPT, which can scale successful practices while also providing cost-efficient solutions. This method tries to improve existing understanding of textual feedback production (Dai *et al*. [1]). The ChatGPT phenomena indicates a change from algorithmic towards linguistic artificial intelligence, in which human-machine interaction is critical both online and in real-time. IEEE/CAA JAS is investigating the influence of its technology on industrial development, notably in control and automation for the production and manufacture of goods (Wang *et al*. [20]).

The study gaps underscore the need for more data-driven studies to help with the appropriate and successful implementation of AI technology in educational settings. The comprehensive literature evaluation on ChatGPT in education indicates significant research gaps. The study recognises the need for more data-driven studies to provide statistical insights into the real impact and usefulness of ChatGPT in educational contexts. It also emphasizes the importance of doing additional data-driven research that can provide statistical insights into the real impact and usefulness of ChatGPT in educational contexts. Therefore, this paper acknowledges the ethical difficulties with ChatGPT in teaching but does not go into detail. It also emphasizes the need for more study on ChatGPT's long-term influence on students' learning results and educational practices.

2. Literature Review

Dai *et al*. [1] investigated the reliability and feasibility of deploying ChatGPT in the field of education to support the students by providing them a detailed response. The study looked into using ChatGPT to offer students feedback for better learning. It evaluated the clarity of ChatGPT-generated comments, the agreement between ChatGPT and teachers, and the input's efficacy. The findings demonstrated that ChatGPT was capable of providing more thorough, coherent responses than human teachers, obtained a high level of agreement with instructors, and could offer suggestions for improving the manner in which students achieve their goals, all of which aided in the enhancement of learning abilities. Jalil *et al*. [8] investigated how well ChatGPT performed when given practice questions from a prominent software testing curriculum. The study discovered that, given its capabilities at the time, ChatGPT was able to answer 77.5% of all of the queries the study tested. It was able to deliver accurate or completely correct answers to 55.6% of the queries, while providing accurate or completely correct explanations to 53.0% of them. When the tool was prompted in a commonly used inquiry context, the total number of accurate responses and justifications increased modestly. Based on these data, they examined the possible benefits and drawbacks of using ChatGPT by teachers and learners. The transformational implications of ChatGPT, an AI-based chatbot, on modern education are discussed by Gill *et al*. [7]. It assesses its talents in a variety of areas,

including money, coding, arithmetic, and public inquiries. However, it has limitations such as the possibility of erroneous data and plagiarism detection. It also does not have a stochastic metric for genuine communication. Academic norms and assessment practices must be revised in order to employ ChatGPT effectively in education. It is critical to educate instructors and students about its potential and limits. Dempere *et al*. [2] looked at the influence of AI chatbots on *Higher Education Institutions* (HEIs), especially OpenAI's ChatGPT. The study indicates advantages such as research assistance, automated grading, and improved human-computer connection. Concerns have been raised about online testing security, plagiarism, job displacement, the digital literacy gap, and AI-induced anxiety. The report also emphasizes dangers like privacy violations, abuse, prejudice, disinformation, diminished human connection, and accessibility difficulties. The report calls for appropriate regulation in the use of AI within HEIs, asking faculty members to utilize AI technologies responsibly in order to avoid dangers, including academic fraud. Table 1 contains the comparative analysis of the opportunities and challenges.

Table 1. Comparative analysis

Source	Author	Opportunities	Challenges	Countermeasures
IEEE Xplore	Dai *et al*. [1]	ChatGPT has the potential to produce a wide range of processes-concentrated responses and is thought to be more helpful than assignment-focus responses in altering learners' assignment approach.	ChatGPT was unable to provide a credible assessment of how students performed in comparison to the teacher.	Connect with teachers, researchers, and artificial intelligence professionals to create more complex AI-assisted evaluation algorithms that correlate closely with teacher assessments.
	Jalil *et al*. [8]	Adopting specific prompting tactics that give more question context can increase the likelihood of right replies and explanations.	Certain conditions make it harder for ChatGPT to respond effectively, and this type of configuration might be utilized as a means of avoiding cheating, particularly in situations where internet connectivity is required.	Create a safe and secure platform for using ChatGPT in the context of education. Access to other webpages or materials that might be exploited for cheating should be restricted in this environment.
	Domenech [3]	ChatGPT, a natural language model, can be a valuable resource in scientific and technical studies due to its understanding of specific jargon and terminology.	ChatGPT raises academic integrity concerns, including cheating, uneven availability, and potential inaccuracies due to its natural language strength and difficulty with mathematical notations.	Educators should establish academic integrity policies, implement secure assessment environments, ensure inclusive access, promote human oversight, and encourage feedback to improve AI models and reduce technology access disparities.
	Strzelecki [17]	ChatGPT offers complete training across academic fields, allowing students to obtain explanation and help while also allowing instructors to innovate teaching techniques by using AI-powered technologies.	With ChatGPT, data privacy and security are critical considerations, while over-reliance may lead to students depending on AI for answers rather than actively participating in the learning process.	Continuous fine-tuning, rigorous content filtering, ethical standards, user education, data security measures, academic integrity regulations, teacher training, and a user feedback loop can all help to improve ChatGPT's efficacy.

Table *Contd*.

Source	Author	Opportunities	Challenges	Countermeasures
	Qadir [13]	ChatGPT provides engineering students with 24/7 virtual coaching, while AI language models produce efficient material for assignments, quizzes, and examinations, saving teachers time and delivering different assessment items.	AI language models pose challenges in accuracy, misinformation, ethical concerns, equity, and assessment integrity, potentially leading to plagiarism, disparities in educational outcomes, and the need for traditional methods.	AI language models in education require verification, community guidelines, plagiarism detection, equity efforts, developing evaluation methodologies, ethical education, and continual improvement.
	Shoufan [16]	By assessing its effects across various educational levels, the study shows that duplicating it with varied participants can improve the flexibility and efficacy of ChatGPT in education.	Replicating a study across school levels, programmes, and subjects may be time-consuming and resource-intensive, making inter-rater reliability and correlational research difficult and necessitating careful preparation and coordination.	Collaboration with educational institutions, educating coders, and creating specialized research designs using findings from correlational studies can improve resource allocation, regularity, and the establishment of significant links.
	Shidiq [15]	ChatGPT, an AI-based chatbot, provides students with quick support, boosting their learning experience and enabling personalized learning based on individual requirements and styles.	ChatGPT faces challenges in emotional connection and limited creativity, hindering essential aspects of education like empathy and innovation.	Teachers should blend AI-based learning tools with human engagement for emotional connection and modeling, as well as cultivate students' creativity by means of original thinking and creative activities.
	Wang *et al*. [20]	ChatGPT may be configured for creativity, context enhancement, effective knowledge transmission, and continuous learning, making it a wonderful resource for staying up to speed on the newest information and advances.	ChatGPT struggles to grasp creative concepts and provide precise information, limiting its applicability for activities that need nuanced comprehension and context-aware answers.	By training on creative and ambiguous phrases and employing natural language processing for greater understanding, ChatGPT may be fine-tuned for creativity and context augmentation.
	Wu *et al*. [20]	ChatGPT promotes academic and commercial realms by improving education, customer service, and content development. Microsoft collaborates with search engines to improve the quality and relevancy of search results.	It is necessary to comprehend its algorithmic components, ensure correct replies, and define ethical standards for responsible usage in educational and professional settings.	Implementation of validation mechanisms can ensure reliability and validity.
ScienceDirect	Dwivedi *et al*. [4]	ChatGPT's quick acceptance, with 100 million active users in two months, opens up prospects for organizations in education, customer service, content development, and productivity enhancement.	ChatGPT confronts errors and originality issues, needing fact-checking and critical review.	To improve reaction quality, countermeasures include training and better context management.
	Eke [5]	ChatGPT boosts academic creativity and productivity by aiding with idea invention and content production, as well as delivering personalized coaching for better understanding and information retention.	The inaccuracy of ChatGPT and the possibility of factual bias might affect the quality and correctness of academic work.	Developing review methods to assure the quality and accuracy of AI-generated information, and encourages users to critically evaluate and improve it.

Table *Contd*.

Source	Author	Opportunities	Challenges	Countermeasures
	Kohnke *et al*. [11]	ChatGPT offers personalized language learning experiences, responding to individual needs and giving language help 24 hours a day, 7 days a week, making it suitable for busy or distant learners.	ChatGPT may create unsuitable or linguistically wrong language rules or examples, making it difficult to provide adequate language content and explanations.	ChatGPT's language learning skills may be improved by concentrating on language-specific settings and objectives, which improves the model's capacity to deliver meaningful feedback.
	Kasneci *et al*. [9]	By offering personalized learning experiences, adapting material and teaching approaches to individual student requirements, improving learning results, and boosting student engagement.	Large language models can generate biased or improper information, raising ethical issues in educational contexts; hence, it is critical to follow ethical principles.	Implement algorithms and rules to decrease bias in AI-generated material, promote ethical usage in education, and encourage students to critically analyze AI-generated knowledge.
	Kocoń *et al*. [10]	Automation of suggesting procedures lowers manual inputs, allowing for the efficient and sustainable usage of ChatGPT and AI models in a variety of industries.	ChatGPT's replies are most likely attributable to human trainer regulations, making it difficult to fix and assure ethical AI behavior.	Reduce possible biases and increase performance in complicated NLP tasks by implementing bias mitigation strategies and task-specific training for ChatGPT.
Google Scholar	Gill *et al*. [7]	ChatGPT improves learning by giving students quick access to information and explanations on a variety of topics, augmenting traditional resources and assisting students in mastering complicated concepts.	ChatGPT's legitimacy may be jeopardized if faulty or fraudulent data is produced. To combat this, a strong fact-checking procedure and unambiguous labeling of AI-generated material are advised.	The use of real-time fact-checking technologies will assure the correctness and dependability of ChatGPT's data.
	Tlili *et al*. [19]	ChatGPT improves the engagement of students by offering a conversational interface that encourages active involvement and inquiry during classes.	ChatGPT poses difficulties in assuring answer quality and accuracy since it may deliver wrong or missing information, possibly deceiving students.	To assure the quality and dependability of ChatGPT's replies, a fact-checking system is being built.
	Dempere [2]	Faculty should use AI chatbots such as ChatGPT to improve teaching, research, and service while minimizing academic fraud and developing new answers to future concerns.	The philosophical and ethical implications of AI's growing role in education, such as the influence on human connection and the evolution of ability to interact with others.	The development of AI-based solutions such as ChatGPT enhances the probability of low-cost chatbot-based interactions replacing human-based educational experiences.
	Wardat *et al*. [21]	The study emphasizes ChatGPT's ability to improve students' arithmetic abilities and knowledge, providing a dependable resource for both students and instructors.	The limitations of ChatGPT in mathematics and misunderstanding correction make it difficult to solve sophisticated math problems and provide appropriate explanations.	ChatGPT's efficacy may be increased by investing in extensive math training data, especially when it comes to mathematics, and adjusting the model to rectify misunderstandings.
	Zhai [23]	ChatGPT improves education-related quality by enabling instructors and educators to swiftly and efficiently develop course materials, research articles, and educational resources in a timely manner.	ChatGPT has difficulty ensuring content quality and accuracy since it might generate partial or completely accurate information, thereby deceiving learners or researchers.	Implementing strong quality control procedures, such as peer review, modifying, and fact-checking, can increase the correctness and dependability of instructional materials created by ChatGPT greatly.

Table *Contd*.

Source	Author	Opportunities	Challenges	Countermeasures
PubMed	Fütterer *et al*. [6]	ChatGPT is an improved learning resource for instructors and students, delivering rapid explanations, assignment aid, and personalized support to improve the learning experience.	There is a risk of disinformation and academic cheating, since students may utilize the service to acquire answers without comprehending the topic.	Clear ethical rules and procedures must be implemented to ensure the ethical usage of ChatGPT in educational contexts, eliminating cheating, plagiarism, and improper content production.
	Sallam [14]	ChatGPT assists researchers in producing high-quality scientific publications such as research papers, journals, and grant proposals, while also improving speed and availability in the writing process.	ChatGPT raises ethical issues regarding attribution of authorship and responsible AI usage in research and education, necessitating remedies such as following extant criteria and developing new guidelines for AI-authored material.	To secure critical health care and research data from possible intrusions, strong cybersecurity measures must be implemented.
	Talyshinskii *et al*. [18]	ChatGPT improves the efficiency of urologists' work by streamlining clinical recording, creating accurate patient records, and decreasing administrative duties.	ChatGPT poses issues owing to limited internet availability, which limits its capacity to give real-time, up-to-date information, particularly in fast expanding disciplines like medicine.	Developers may improve ChatGPT's learning dataset by including reliable medical resources, giving urologists better access to the most recent research and guidelines.

Domenech [3] investigated the educational potential of OpenAI's ChatGPT, concentrating on its uses as a writing helper, study tool, and personal instructor. It attempts to present a complete understanding of its benefits and problems in higher education, emphasizing its potential for improving learning and teaching processes. Dwivedi *et al*. [4] investigated the possible benefits and ethical problems of ChatGPT, a technology that produces text that is indistinguishable from human language, in a variety of businesses. It emphasizes its potential for increasing productivity while also highlighting limits, privacy issues, and possible biases. To solve these concerns, more study is required. OpenAI's ChatGPT highlights worries regarding Gen-AI systems' influence on academic integrity. While these technologies have the potential to transform academics, their application may have the opposite effect. Institutional and multi-stakeholder actions are required to reduce hazards (Eke [5]). The fast expansion of ChatGPT has inspired global interest in education, but educators have had conflicting views. An analysis of Twitter data indicated that education was the most talked about issue, with diverse feelings about anything from cheating to possibilities. The study focuses on the impact of authority choices on public opinion, as well as the consequences for scientific and policy communication in quickly changing environments (Fütterer *et al*. [6]). Large models of language, which represents a significant leap in artificial intelligence, may be utilized in education to produce content, increase student engagement, and personalize learning experiences. Developing capabilities, executing a clear approach, and eliminating potential biases and abuse are all obstacles. Resolving these issues is critical for sustainable and ethical use (Kasneci *et al*. [9]). Engineering education is making use of constructive AI technologies such as ChatGPT to provide personalized learning experiences. It does, however, have drawbacks such as biases and possible disinformation. Concerns about ethics and eventual unemployment are also highlighted. It is critical for educators to modify the environment to accommodate

students who want to become engineers (Qadir [13]). Zhai [23] piloted ChatGPT to write an academic paper, titled Artificial Intelligence for Education. The results showed ChatGPT can help researchers write coherent, accurate, informative, and systematic papers. The paper suggests adjusting learning goals to focus on improving creativity and critical thinking, rather than general skills. Researchers should design AI-involved learning tasks to engage students in solving real-world problems. However, concerns arise that students may outsource assessment tasks, suggesting the need for new formats to focus on creativity and critical thinking that AI cannot.

RQ1. How does ChatGPT enhance student's performance through interactive tutoring experience?

RQ2. What are the opportunities and challenges of ChatGPT in the field of education?

RQ3. What are the measures to be taken to minimize the limitations of ChatGPT?

3. Methodology

The systematic literature review is one of the most used methodology, because this a very essential tool for evidence based research. The study obtains relevant literature from several academic databases such as IEEE Xplore, ScienceDirect, Google scholar and PubMed. The study used a particular keyword for searching appropriate research papers. After data collection, the study filtered the papers with respect to their title and the abstract. The detailed methodology is explained in the succeeding sections.

3.1 Search Strategy

IEEE Xplore, ScienceDirect, Google scholar and PubMed were the selected databases. Table 2 tabulates the search string used in the four databases in the categories of title, abstract, and/or keywords. In the initial phase the study found 179 records and this literature search was carried out during the months of August and September 2023.

Table 2. Keywords used as search string for literature identification

Databases	**Keywords/Phrases**
IEEE Xplore	"ChatGPT"/ "ChatGPT overview"/ "ChatGPT in education"/ "ChatGPT for students"/ "ChatGPT teaching"/ "ChatGPT for interactive learning"/ "Benefits of ChatGPT"/ "Future of education in ChatGPT"/ "ChatGPT"/ "Opportunities in ChatGPT"/ "ChatGPT challenges in education"/ "ChatGPT learning"/ "ChatGPT response for students"/ "ChatGPT for tutoring"
ScienceDirect	
Google scholar	
PubMed	

3.2 Inclusion and Exclusion Criteria

After collecting the 179 records from the database the study excluded some records due to the inclusion and exclusion criteria which is tabulated in Table 3. The main motive of this criteria was to limit and focus on the objective of the study. The inclusion and exclusion criteria was based on the title, type, publication, language, timeline and availability of the articles.

Table 3. Article selections criteria

Criteria	Inclusion	Exclusion
Title	Incorporating education	Not incorporating education
Type	Empirical, and Theoretical studies	Inauthentic essays, blogs, opinion papers, editorials and conference abstracts
Publication	Peer reviewed and published	Pre-printed and unpublished
Language	English	Non English
Timeline	Published between 2022 - present	Published before 2022
Availability	Full text	Not available

3.3 Data Extraction

The four electronic databases examined yielded a total of 179 entries. After deleting non related records ($n = 54$) and duplicate data ($n = 26$), studies were evaluated for eligibility ($n = 99$) based on title and abstract. 77 studies were eliminated because they did not match the defined inclusion and exclusion criteria. Finally, 22 papers were considered for inclusion in the review.

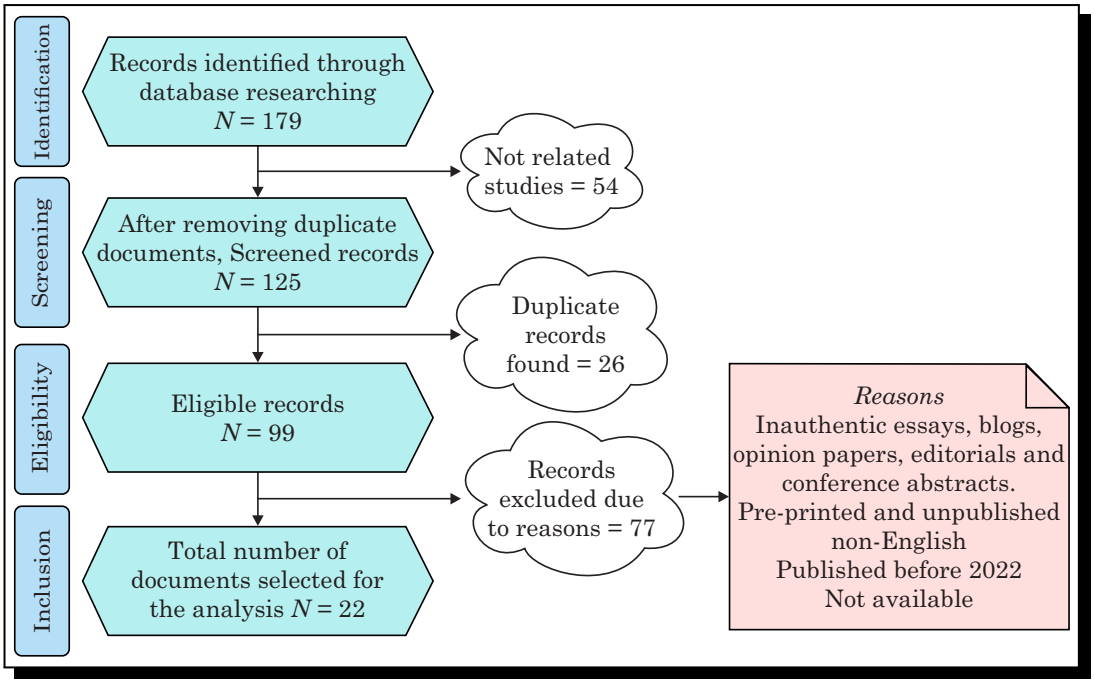

Figure 1. Flow chart of the study selection process

The flow chart of the record selection procedure according to the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) recommendations is shown in Figure 1 (Page *et al*. [12]). Table 4 displays a summary of database searches within the scope of the study. After eliminating 157 papers, 22 were chosen and individually evaluated for extensive data. Thematic meaning and interpretation of the obtained data were identified via a methodical procedure. Separate anecdotal records were kept, and the ChatGPT research was reviewed several times to establish the importance of themes. In the systematic review of the included research, the PRISMA staged procedure was employed.

Table 4. Phases of systematic review and the distribution of records on the basis of source of data

Databases	Phase 1	Phase 2	Phase 3	Phase 4
IEEE Xplore	41	27	21	9
ScienceDirect	37	24	18	5
Google scholar	65	51	44	5
PubMed	36	23	16	3

The steps of a systematic review are presented in the table, which is based on four databases: IEEE Xplore, ScienceDirect, Google Scholar, and PubMed. At each step, a distinct number of records are fetched from the database. The first step is when researchers do a preliminary search to find pertinent records. This column's values show the number of records obtained at this early stage. The second phase of the procedure refines the search and selection process by deleting duplicate entries and applying inclusion and exclusion criteria to restrict the list of relevant records. The values in this column show the number of records that remain following this refining. Phase 3 involves a more extensive examination of the records, with each record being examined for relevance to the study topic. The numbers in this column represent the records that survived this assessment. Phase 4 is the final phase, where researchers make the final selection of records for inclusion. The numbers in this column represent the records that have been selected for inclusion in the systematic review. The number of records retrieved decreases as the systematic review progresses through the phases, as researchers aim to filter out irrelevant records and focus on those most pertinent to their research question. The specific numbers in each phase may vary depending on the research topic and search strategy used. The records that survived this review are represented by the numbers in this column. Phase 4 is the final phase, in which researchers choose which records to include. The records included in this column have been chosen for inclusion in the systematic review. As the systematic review goes through the phases, the number of records collected lowers as researchers strive to filter out irrelevant data and focus on those most relevant to their study issue. Depending on the study subject and search approach utilized, the particular numbers in each step may vary.

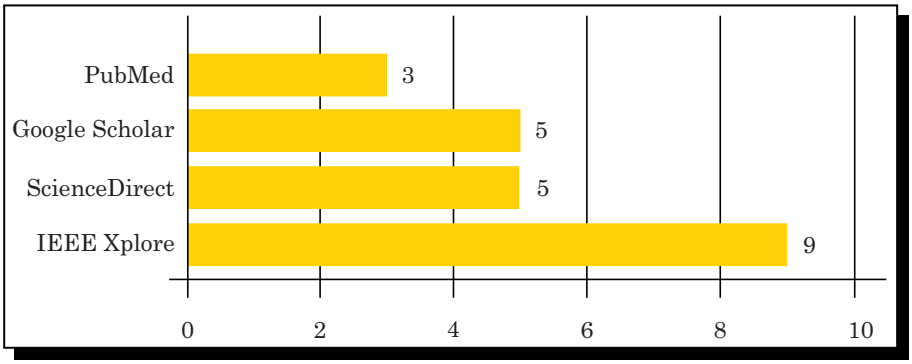

Figure 2. Database-wise distribution of selected articles

A bar graph (Figure 2) is used to show the final selection of records from several databases in the last step of a systematic review. Each bar reflects the number of documents from a particular

database that satisfied inclusion criteria and were pertinent to the research topic. IEEE Xplore is the principal source of relevant documents, with 9 entries contributing. Other databases, such as Google Scholar, ScienceDirect, and PubMed, also had a role in the final decision. The heights of the bars represent the distribution of records from various sources. Google Scholar is the principal source of pertinent records, with contributions from other databases variable but valuable.

4. Results and Discussion

4.1 ChatGPT for Interactive Tutoring Experience

ChatGPT, an OpenAI language model, is a promising AI-driven educational technology with the potential to transform students' interactive tutoring experiences. Its capacity to have human-like conversations and deliver extensive explanations makes it an excellent tool for interactive instruction. The customization component of ChatGPT allows students to ask questions, seek explanations, or request assistance on a wide range of topics, with replies tailored to individual requirements. This capacity may be quite useful when dealing with different learning styles and paces. ChatGPT is available 24 hours a day, seven days a week, so students can get help whenever they need it, whether it's late at night before an exam or during the day while working on a difficult project. This accessibility enables students to take charge of their learning and seek assistance when it is most needed (Talyshinskii *et al*. [18]). Because ChatGPT has considerable experience in a wide range of subjects, it can provide assistance in a number of academic areas such as mathematics, history, and computer programming. This range of topic area expertise demonstrates its adaptability as an instructional tool (Sallam [14]). When opposed to static textbooks or traditional resources, interacting with ChatGPT can be more interesting for students since it encourages active engagement and allows them to ask questions and receive quick responses (Fütterer *et al*. [6]). This dynamic contact has the potential to develop critical thinking and problem-solving abilities. ChatGPT, on the other hand, presents obstacles such as ethical considerations, privacy concerns, and the possibility of overreliance on AI coaching. These difficulties can be overcome with responsible implementation, clear instructions, and ongoing study (Zhai [23]). Finally, because of its personalisation, 24/7 availability, complete subject matter expertise, and capability for greater interaction, ChatGPT has enormous promise in the realm of education. ChatGPT serves as a testament to the expanding environment of interactive and personalized learning experiences as we continue to explore the possibilities of AI in education.

4.2 Opportunities and Challenges of ChatGPT in Education

ChatGPT, an AI-powered chatbot, has the capacity to deliver a variety of process-focused replies, which have the potential to be more successful than assignment-focused responses in influencing students' approach to tasks (Wu *et al*. [22]). However, as compared to teachers, it suffers difficulties in giving trustworthy assessments of pupils' performance (Dai *et al*. [1]). Its knowledge of specialized language and terminology makes it a great resource in scientific and technical study. However, due to its natural language capabilities and limits with mathematical notations, questions about academic integrity, including cheating and probable

mistakes, emerge (Jalil *et al*. [8]). ChatGPT provides full assistance across academic disciplines, allowing for learning and teaching creativity (Dwivedi *et al*. [4]). However, data privacy and security are critical factors, and relying too much on AI may stifle active student involvement (Domenech [3]). ChatGPT in engineering education provides 24/7 virtual coaching and efficient content development, which benefits both students and professors. However, there are still issues with truth, disinformation, ethics, equity, and assessment integrity (Strzelecki [17]). According to the study, duplicating studies across multiple educational levels and diverse individuals can improve the adaptability and usefulness of ChatGPT in education. It may, however, be resource-intensive and need careful coordination (Qadir [13]). By facilitating idea development and content creation, ChatGPT has the potential to increase academic innovation and productivity. However, its inaccuracy and apparent factual bias may have an impact on academic work quality (Shoufan [16]). ChatGPT in healthcare reduces clinical recording and administrative work for urologists, but restricted internet connection makes transmitting real-time information difficult (Shidiq [15]). To summarize, ChatGPT has several benefits, ranging from personalized learning to content production, but its limits in accuracy, emotional intelligence, and content quality necessitate careful attention and ethical concerns to enable responsible and successful implementation across multiple areas (Wang *et al*. [20]).

4.3 Minimize the Limitations of ChatGPT

ChatGPT, an OpenAI language model, has received widespread acclaim for its capacity to create human-like prose and provide a variety of applications (Eke [5]). However, it has certain limitations that must be solved before its full potential can be realized. Its poor contextual awareness, for example, can contribute to technical accuracy but lacks depth or specificity in some contexts (Kohnke *et al*. [11]). Due to its dependence on pre-trained data, which may be obsolete or wrong, it may also provide factually erroneous results. Furthermore, it can yield biased, offensive, or inappropriate content, presenting ethical and content-related problems (Kasneci *et al*. [9]). ChatGPT may be fine-tuned for certain applications or sectors to solve these constraints by enhancing contextual comprehension and restricting its answers to domain-specific material (Kocoń *et al*. [10]). Integrating fact-checking processes can help verify the correctness of ChatGPT replies, while sophisticated content screening and moderation systems can keep it from producing unsuitable or objectionable information (Singh *et al*. [7]). Enhanced context management systems can assist in keeping interactions cohesive and contextually acceptable, while user feedback loops can encourage users to offer feedback on wrong or inappropriate replies (Tlili *et al*. [19]). Clear ethical guidelines can be established for both developers and users to define the responsible use of ChatGPT and promote ethical and safe interactions (Dempere [2]). While ChatGPT represents a significant step forward in natural language processing and AI-driven conversational agents, it is crucial to acknowledge and address its limitations. By implementing fine-tuning, fact-checking, content filtering, and other strategies, developers and users can work together to minimize these limitations, allowing ChatGPT to continue to evolve as a reliable and valuable tool in various domains (Wardat *et al*. [21]).

This research investigated the possibilities of ChatGPT, a developing technology aimed to improve educational learning experiences. The study delves into its possible benefits and drawbacks, including personalisation, 24/7 access, and considerable subject matter knowledge. ChatGPT can adapt to individual learning styles, give immediate support, and drive critical thinking, hence improving engagement and learning results. It does, however, confront ethical challenges, privacy concerns, and the potential of overreliance on AI technologies in education. Establishing ethical principles and best practices for responsible integration is critical for educators, policymakers, and AI developers. Finally, ChatGPT is an effective tool for improving educational experiences by providing information, personalized help, and a platform for active learning. ChatGPT's influence on education will become more evident as it evolves. This research provides a basis for informed decision-making and a stepping stone towards the future of AI technology. As AI technologies advance, it is our job to use them wisely, driven by our dedication to enhancing education while avoiding any hazards.

5. Conclusion

This systematic literature review evaluated the potential of ChatGPT in tutoring and education, showing its potential to change the way students learn and educators educate. ChatGPT provided several options, such as personalization of learning, 24/7 access, and significant subject matter knowledge. Because of its capacity to engage and deliver immediate feedback, it creates a dynamic and interesting learning environment. The study does, however, reveal drawbacks, such as the failure to grasp subtle context, creating factually incorrect replies, or producing inappropriate content. Fine-tuning, fact-checking, content screening, and user input may all be used to overcome these restrictions. Although the review noted that this work is based on a comprehensive literature review, it leaves room for future researchers to build on this basis. Quantitative studies employing real-time datasets might help researchers better comprehend ChatGPT's influence on student learning and educational results. To summarize, ChatGPT is a disruptive technology that, when used properly and ethically, may improve learning experiences in the digital world. It has the potential to excite the next generation of students in a new era of interactive and personalized learning. However, ethical considerations, privacy concerns, and the dangers of overreliance on AI technologies in education must all be carefully considered. To achieve responsible integration, educators, politicians, and AI developers must set ethical principles and best practices. Finally, ChatGPT is a formidable ally in the pursuit of better educational experiences. Its mission is to supplement instructors' efforts by providing a plethora of knowledge, personalized support, and a platform for active learning. ChatGPT's effect on education will only get stronger as it evolves and matures. This research lays the groundwork for educators, researchers, and administrators to make educated decisions on the varied nature of ChatGPT in education.

5.1 Limitations and Future Scope

The study on ChatGPT's application in education has limitations, such as its limited scope, preexisting prejudice, generalizability, and lack of consideration of ethical and privacy issues. The findings are based on existing research and may not represent all possible

circumstances and contexts. The study does not provide detailed information on the ethical and privacy considerations raised by ChatGPT's use in education. Future research should focus on quantitative studies using real-time databases and data collecting to accurately evaluate ChatGPT's performance in educational contexts. Longitudinal research should focus on long-term, longitudinal studies that follow the impacts of using ChatGPT over time, offering insights into its long-term influence on student learning and educational practices. Comparing ChatGPT's performance with other AI-driven educational tools or traditional teaching approaches can provide a more complete picture of its fit into the educational environment. Ethical and privacy studies should be conducted to address these issues. User experience research should focus on determining user happiness, preferences, and areas for development. Implementing user feedback loops can improve ChatGPT's functionality. Improved content production should focus on increasing ChatGPT's ability to develop educational content, including curricular materials, quizzes, and interactive games.

Acknowledgments

This project was supported by the Deanship of Scientific Research (DSR) at King Abdulaziz University, Jeddah. The author, therefore, acknowledge with thanks DSR for technical and financial support.

Competing Interests

The author declares that he has no competing interests.

Authors' Contributions

The author wrote, read and approved the final manuscript.

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