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Exploring the Opportunities and Challenges of ChatGPT in Academic Writing

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Abstract The use of Artificial Intelligence (AI) nowadays becomes interesting and impressive since it integrated into educational concerns, especially in language learning. Providing ability to respond very natural language, conversation in various contexts established learners to using ChatGPT in their learning practice. Besides of its numerous capabilities in helping learners to write accurately, ChatGPT also has areas of risk and dehumanity. This paper aims to explore the opportunities and challenges of using ChatGPT in academic writing. By using systematic literature review, the present study figures out how ChatGPT can overcome difficulties in writing by aids of chatbot and machine learning. Meanwhile, wisdom in use of it in the learning environment should be into consideration because of losing creativity and lack of conversational practice. Therefore, it is suggested to learners and teachers to be careful and wise to interact with this technological tool, since human can only provide judgement and verification maker.

Keywords: Artificial Intelligence; ChatGPT; Academic Writing; Opportunities; Challenges

INTRODUCTION

Artificial Intelligence (AI) is a significant and revolutionary technology today. It becomes one of the most essential and transformative technologies in this era (Golan *et al.*, 2023). When artificial intelligence is mentioned, it makes us think of a supercomputer, a device with extraordinary processing power, adaptive features like sensory inclusion, and other characteristics that give it the appearance of being

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human(Chen, Chen and Lin, 2020). Dr. Share Aiyed M Aldosari said, "Artificial intelligence is one of the most prominent modern applications of information systems as a field of modern knowledge that is interested in studying and understanding the nature of human intelligence and its simulations to create a new generation of smart computers that can be programmed to accomplish many of the tasks that need a high ability of inference, deduction and perception, which are qualities that people enjoy. It is included in the list of smart behaviors"(Aldosari, 2020). It means that AI is a system that is created to have abilities like humans.

Artificial Intelligence applications are essential in all aspects of life. It deals with computer science, psychology, philosophy, mathematics, languages and other disciplines (Lesia Viktorivna *et al.*, 2022). It also has been accepted and utilized in education, especially by educational institutions, in many ways (Chen, Chen and Lin, 2020). AI has the potential to have a significant impact on society. The use of AI will be able to create, change, and improve many aspects of human life. For example, a Teacher used to have to check the exam results of his students one by one using a pen, now teachers don't need to do that anymore. with AI, students can do the exam with the application, and the teacher will immediately be able to see the scores of his students. Hence, It is important to study about this AI.

In recent years, many researchers have been interested in studying AI in education. The study (Majid, Ishfaq and Lakshmi, 2022) discussed the application of AI in various fields of education, the study (Aldosari, 2020) highlighted the implications of artificial intelligence for higher education, and the study (Lesia Viktorivna *et al.*, 2022) investigated the function of AI in English language acquisition, how effective it is, and what practical strategies may be employed to use it efficiently. The research (Sumakul *et al.*, 2022) expalained about point of view of the teachers in using AI in English Foreign Language class, and the research (Nazari, Shabbir and Setiawan, 2021) investigated the efficacy of a group format of an Artificial Intelligence (AI) driven writing tool in academic writing in English.

New writing tools, such as automated writing evaluation (AWE), automated essay scoring (AES), and automated written corrective feedback (AWCF), driven by AI and available on mobile devices are potential tools for assisting students in

acquiring and developing writing abilities that are difficult to master through traditional instruction (Nazari, Shabbir and Setiawan, 2021). One of the most significant benefits of using AI-based tools in academic writing is that they can save time and increase efficiency (Golan *et al.*, 2023). Artificial Intelligence may be an effective assist-writing tool in English for Academic Writing.

The rapid and continuous development of AI has caused contradictory among the academicians. Therefore, the disruptive effects of AI are presently influencing many parts of society, including education (Sumakul *et al.*, 2022). The use of AI in the field of education certainly has advantages and disadvantages. In order to use it, it is necessary to know the opportunities and challenges in using AI in education especially in academic writing.

METHOD

The Method used in writing this article was literature review. Author began by looking for related articles with the research topic to be carried out. In order to provide a strong basis for the content and discussion, the author explored for information or literary material in journals, papers, and book. Specifically, an international and national literature which is conducted utilizing Google Scholar and ScienceDirect databases.

RESULT AND DISCUSSION

Artificial Intelligence in Education

Artificial intelligence has found utility and practicality in diverse sectors such as speech identification, linguistic interpretation, virtual gaming, independent automobile creation, and medical identification. Likewise, during the last several decades, there has been a growing focus on implementing artificial intelligence in educational settings (Feng and Law, 2021). The AI system is constantly ready to provide support based on tutoring model's embedded teaching theories. The user interface evaluates learners' progress using various input methods such as voice, typing, and clicking, while offering output in the form of text, figures, cartoons, and animations. The improved human-machine interface integrates AI-powered features

like natural language interaction, speech recognition, and detection of learners' emotions (Chen, Chen and Lin, 2020). Applications of artificial intelligence in the form of intelligent machines have a transformative impact on the roles of schools, teachers, and learners. These machines have potential to alter the dynamics of both traditional and virtual interactions within the educational environment. Teachers and learners will engage with interactive machines to collaborate on educational experiences and achieve desired goals. This transformation brings about a new paradigm in the educational objective (Lesia Viktorivna *et al.*, 2022).

ChatGPT

ChatGPT is a tool developed by OpenAI that utilizes artificial intelligence (AI) to create a chatbot interface. It serves multiple functions, including aiding in writing, editing, and planning research. With its capabilities, ChatGPT offers suggestions, corrects grammar, and provides recommendations to enhance written content. Its purpose is to assist users in tasks like generating project ideas, reviewing study designs, and improving academic writing (Golan *et al.*, 2023). This technology involves training algorithms on large datasets to make predictions based on the provided data. It encompasses tasks like language translation, voice recognition, and image recognition (Haleem, Javaid and Singh, 2022).

(Salvagno, Taccone and Gerli, 2023) stated that ChatGPT is a form of AI software specifically developed to create conversations with human users. This chatbot utilizes programmed algorithms to comprehend natural language inputs and provide appropriate responses, which can either be pre-written or generated by the AI in real-time. Through continuous improvement involving reinforcement techniques, natural language processing, and machine learning, ChatGPT strives to improve its capacity to effectively understand and fulfill user needs.

Specific Features and Capabilities of ChatGPT

ChatGPT's ability to respond and provide context of its command makes it helpful in various field of concerns. It proceeds faster and accurate in minimum range of time which deals with users' questions or input. Understanding words and

sentence in numerous languages can be impressive in using this machine learning, besides its ability to provide natural language of use. The following table presents the major role of chatGPT adopted form (Haleem, Javaid and Singh, 2022)

Table 1. Major Role of ChatGPT

No	Roles	Description
1	Gaining widespread interest	It can create suggestions on almost everything, such as composing essays, articles, poetry, translated material, and more.
2	Variety of language input	ChatGPT is able to understand and react to diverse language inputs and obtain simple, uncomplicated answers to inquiries instead of using a search engine like Google
3	Picking up latest information	ChatGPT can pick up on and adjust to new information is one of its main features: including customer service, education, and entertainment
4	Learning and Improving	ChatGPT can gain knowledge from its interaction with users
5	Helpful for variety of tasks	ChatGPT can be used for various things such as creating code, recommending meals, enhancing the quality of life for older people and those with impairments. As like reacting to a broad range of cues, and almost nothing beyond its capabilities
6	Respond to inquiries	ChatGPT is skilled at answering questions, making recommendations and making predictions
7	Business Application	ChatGPT can develop campaigns, engage with clients and marketer
8	Useful for Digital marketer	ChatGPT can respond to queries, customer service and suggest product

9	Translate concepts	ChatGPT is able to carry out various activities related to natural language processing (NLP) such as conversation, summary and translation
10	Better interpretability	ChatGPT can examine vast amounts of customer feedback, social media postings, and other unstructured data source, as a result, it may identify patterns in views and behaviors
11	Genuine conversation	ChatGPT can look and sound like genuine conversations and responses seem very human
12	Providing a dynamic and interesting way	ChatGPT can customize writing or essay to meet requirements and interests
13	Education	ChatGPT can define words and sentences impressively, providing students a forum to ask questions and clear up any confusion
14	Developing stronger writing abilities	ChatGPT helps with evaluation and grading, moving the emphasis from fixing mistakes to developing more vital writing abilities
15	Create new things	ChatGPT has machine learning which entails instructing an AI to carry out tasks by exposing it to a tonne of data
16	Cover a wide range of data	ChatGPT can write various topics prose and poetry styles, capable of opining on itself
17	Conduct routine duty at the office level	ChatGPT can make appointments, sending emails, maintaining social media accounts

Opportunities of Using AI in Education

(Salvagno, Taccone and Gerli, 2023) stated that one of AI platform (such as “elicit.org”) can help researcher to review the academic paper and researches. Not only proceed finding references, but also it gains summary, highlight intended areas of confusion and so on. In relation to this occasion, (Khabib, 2022) convinced that the process of writing a scientific article to be easier and more enjoyable with the help of

AI. This tool provides to reduce errors and mistakes to reach accuracy and more efficient writing. Also, AI can suggest feedback to improve the writing by generating ideas with powerful significance to aid language processing when users find ideas dormant in certain demands.

Not only to individual use of benefits, AI is also helpful in instructional language learning. (Nazari, Shabbir and Setiawan, 2021) and (Sumakul *et al.*, 2022) initially investigated the teachers' perspective towards the use of AI in the classroom. The results show that all teachers had positive perceptions towards the use of AI in their classrooms and teacher agreed that AI help students to learn which indicate the students' motivational levels in technological competence should be put into consideration when students AI involve in EFL classroom.

Besides of such evidence, (Godwin-Jones, 2022) and (Majid, Ishfaq and Lakshmi, 2022) depicted that AI use in the classroom when it is integrated into writing instruction and practice, has significant benefit to both students and teachers. Teachers are helped to provide students in gaining meta-linguistics knowledge prompted by AI, displaying how it can personalize information to be used as a learning experiences, and overcoming weaknesses to enable students reach the learning goals. It is inclusive and accessible to self-learning automatically.

Challenges of using AI in Education

Initially, (Aldosari, 2020) presented evidence that there is a decrease in the level of awareness of the mechanisms of applying artificial intelligence, and suggested a need to further spread awareness on the possibilities of using artificial intelligence applications in education. In detail, (Lesia Viktorivna *et al.*, 2022) reviews AI in language learning that learners are afraid of in EFL Ukranian University where AI have been understood in a very high level. The learners depicted that ChatGPT can generate ideas, finding literature, summarizing research finding, writing abstract, and proofreading which prevents plagiarism. It is also good at writing specialized articles which can surpass the human capabilities. As a result, learners have to heading off to losing personal information and fear of losing natural environment with speakers and real emotions. AI additionally can lessen the learners' spontaneity

and creativity in language learning. So that, AI requires the wisdom of human content designers and educational experts to maintain the existence of human knowledge as (Schmohl *et al.*, 2020) suggested previously.

Different view of (Bom, 2023) has been achieved that ChatGPT does not yet support input in graph or picture formats. The text generated by ChatGPT might not match the format commonly used in academic papers, so it required a lot of editing. One problem with ChatGPT is that it needs accurate input data to provide accurate results. However, the extended reproduction of false data should be bear in mind. Authors in this case, users are responsible for ensuring there are no concerns about potential plagiarism.

Another problem with ChatGPT is also delivered by (Salvagno, Taccone and Gerli, 2023) who said that there is no publication in the field of critical care medicine prepared using this approach; however, this will be a possibility in the next future. Even if various field of data used by chatbot, there is still human power to give judgment and decision or application. Therefore; the use of AI in education still involve debates in ethical practice and verification to eliminate challenges.

CONCLUSION

The use of artificial intelligence (AI) in academic writing has many benefits. AI can save time, increase efficiency, and simplify the writing and editing process. While there are significant benefits, the use of these tools also generates controversy. AI can reduce learners' spontaneity and creativity in language learning, and the results are not consistently natural. Nevertheless, the integration of AI into everyday life is unavoidable and individuals need to understand and utilize its usefulness.

ChatGPT, an AI chatbot tool developed by OpenAI, has great potential benefits in a variety of tasks. This technology has potential benefits to increase productivity and assist in education especially in the field of writing. However, there are some limitations in its use, such as misinformation and biased content, sometimes inaccurate data, not supporting input in graphic or image formats and so on. It can be an opportunity and can be a challenge for its users, depending on how they use it.

Therefore, as a user it is important to evaluate and regulate this technology to be able to use it ethically and responsibly.

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