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## Leveraging ChatGPT AI Model in Academic Writing and Avenues for Further Development: SWOT Framework

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### ABSTRACT

ChatGPT is a recent and famous AI tool that has triggered debates about its potential implications in research, education, and enhancing language practices and skills. This study manipulated the SWOT analysis framework and systematic review to outline and scrutinize AI tools, including ChatGPT's strengths, weaknesses, opportunities, and threats, in use in academic writing. The study highlighted that the *strengths* of using ChatGPT in writing include helping researchers and students' writing by increasing information access, generating ideas, planning, and revising writing. It was found that *the weaknesses* of ChatGPT's use in writing involve difficulty in finding the source, lack of ensuring academic writing ethics, increasing student's overreliance, and decreasing the creativity of original writings. This research provided some *opportunities* for using AI tools, such as generating and creating new AI programs and models to help researchers and students improve their writing and detect unethical writing. The study highlighted several *threats* to using ChatGPT in writing, including a lack of ensuring the originality of ideas and resources, a lack of adherence to academic ethics, plagiarism enhancement, and a decline in high cognitive and creative skills and writing creativity.

**Keywords:** Artificial Intelligence (AI); Academic Writing; ChatGPT; SWOT Analysis Framework

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## 1. Introduction

Artificial Intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using the rules to reach approximate or definite conclusions), and self-correction<sup>[1]</sup>. The arrival of Artificial Intelligence (AI) in several disciplines has initiated new paths for improving academic and non-academic facilities and resources with innovative and sophisticated tools and applications. AI has found applications across various areas, including health-care, finance, and education. In the educational sector, AI personalizes learning, automates administrative tasks, and enhances teaching and learning experiences<sup>[2]</sup>. AI's role in education has expanded significantly, offering tools that adapt to students' individual learning needs, providing instant feedback, and facilitating a more engaging learning environment<sup>[3]</sup>. Specifically, in writing development, AI-powered tools like ChatGPT assist in improving writing skills by providing real-time feedback on grammar, punctuation, and style and helping users explore different writing genres and structures<sup>[4]</sup>. The SWOT analysis framework, which stands for Strengths, Weaknesses, Opportunities, and Threats, is a strategic planning tool used to identify and analyze these four aspects of a particular subject<sup>[5]</sup>. Applying SWOT analysis to the use of ChatGPT in writing development helps to gain a comprehensive understanding of how AI can enhance writing skills, identify potential challenges, and explore future opportunities for improvement. Several studies have been conducted using SWOT analysis about language learning and language skills and research.<sup>[6]</sup> explored the students' views on learning English through social media, illustrating their experience as effective, natural, and less burdensome. The study highlighted some threats and weaknesses of the students' experience, such as misinformation, distractions, and the lack of language accuracy in the sources they were exposed to. Al-Mutawa, Al-Kandari, and Fayeze<sup>[7]</sup> recently explored the writing skill proficiency of undergraduate Arab business students utilizing the SWOT framework, and the data indicated valuable insights on the forthcoming opportunities and the pitfalls to avoid and improve the quality of students' writing and enhance their performance in analytical business writing.

## 2. Methods

### *Research Sample and Design*

A systematic review was undertaken to evaluate the role of Artificial Intelligence (AI) and writing skills using SWOT analysis. The methodology involved four key steps. The first step included a literature search. A comprehensive search was conducted specifically using Direct Science database. Keywords including "ARTIFICIAL INTELLIGENCE AND WRITING," and "WRITING AND ChatGPT" were used to find articles published in English during 2024. This search focused on identifying peer-reviewed articles and empirical studies that explored AI's application in learning and teaching writing. The second step was defining inclusion and exclusion criteria to refine the search. Studies were included if they directly addressed AI's application in teaching or learning writing, such as its role in teaching or learning vocabulary, grammar, structure, plagiarism detection, or assessment assistance. Studies were excluded if they were not directly related to academic writing or lacked empirical evidence or clear methodologies. Step three included data extraction and synthesis. Information was extracted from the identified studies regarding the study's main AI focus, key findings, AI application used. The final step involved a detailed analysis of the extracted information to conduct a SWOT analysis and identify the main categories for each domain (see **Figure 1**). This systematic approach was designed to rigorously assess the current state of AI in academic writing and identify chances for further research and development.

This study is based on a qualitative research design analysis of 23 research papers making use of the SWOT (Strengths, Weaknesses, Opportunities, Threats) framework to analyze the selected studies. The SWOT analysis is an effective tool for identifying all factors that can influence the uses, practices, and concerns of AI's new versions of ChatGPT on students' and researchers' academic writing. This framework was selected to ensure the investigation and exploration of the advantages and disadvantages of using ChatGPT in academic writing utilizing the SWOT framework.

The articles were reviewed to find data aligning with the SWOT framework's categories: strengths and opportunities for using ChatGPT in academic writing. Each study was analyzed for targeted information, which was then categorized

according to the SWOT framework. All authors revised the targeted sample to ensure the relevance of the data. The procedure for conducting the SWOT analysis involved several key steps and procedures, including (a) determining an Objective, (b) gathering resources, (c) compiling ideas, and (d) refining and obtaining the findings. This study is completely based on secondary data analysis of previous studies, and there was no direct contact with humans or non-humans. Therefore, no ethical considerations were obtained in this study.

### 3. Results

The SWOT analysis studies reveal the potential strengths, opportunities and highlight the expected weaknesses and threats. In this section, we report the details on the selected studies for SWOT analysis of the use of AI in writing. **Table 1** presents the summary of features (strengths, weakness, opportunities, or threats) and supported citations and studies along with obtained findings. **Table 2** presents more details about the selected studies including the title, citation, aim and methodology applied in each study, and summaries the findings of each study.

Based on the analysis of selected studies, **Figure 2** highlights the summary of using AI ChatGPT model with relevance to the SWOT analysis model.

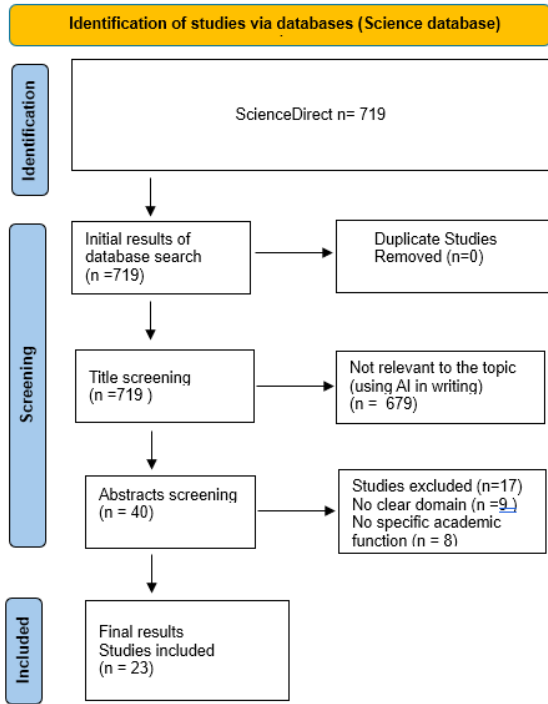


Figure 1. Summary of studies identification.

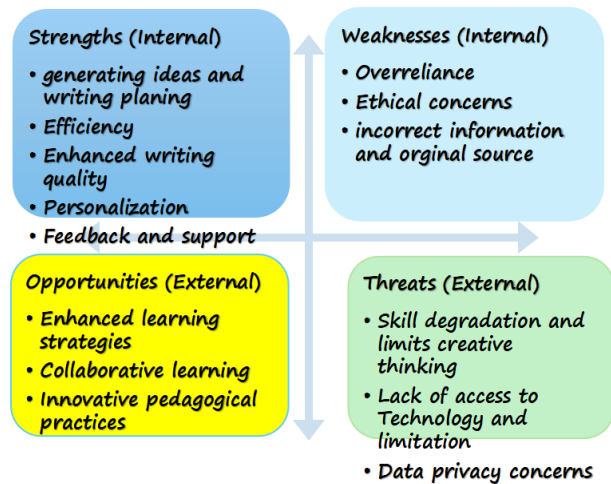


Figure 2. SWOT analysis summary on AI in writing.

Table 1. Summary of features and supported citations and studies.

SWOT	Findings	The Articles
Strengths	Efficiency	[8–26]
	Outlining and planning	[8, 10, 11, 27]
	Enhanced writing quality	[8, 10, 13, 15, 17, 19, 24, 25, 28, 29]
	Personalization	[9, 11, 12, 14, 15, 17, 20–22, 25–27]
	Feedback and support	[8–10, 13, 14, 17, 18, 23–30]
Weaknesses	Overreliance	[8–11, 14–17, 21, 23–28]
	Ethical concerns incorrect information	[8–12, 15–21, 24–28, 30] [8, 10, 12–15, 17, 18, 23–27, 30]
Opportunities	Enhanced learning strategies	[8, 9, 12, 14–17, 22, 24–29]
	Collaborative learning	[10, 13, 14, 16, 21, 24, 25, 27]
	Innovative pedagogical practices	[8, 11, 14, 15, 17, 21, 24–26]
Threats	Skill degradation and limits creative thinking	[8, 10, 12, 13, 15, 17, 20, 25–28]
	Lack of access to Technology and the internet	[9, 16, 18, 19, 21–24, 26, 27]
	Data privacy concerns	[9, 11, 12, 21, 26, 30]

**Table 2.** Characteristics of included studies.

No.	Title	Citation	Aim of the Study	Main Findings on Using AI	Method: AI Application/Software Used
1.	Identifying ChatGPT-generated texts in EFL students' writing: Through comparative analysis of linguistic fingerprints	[17]	To investigate the distinguishability of essays written by Japanese EFL learners from those generated by ChatGPT and identify key linguistic features differentiating human-authored from AI-generated content.	Significant differences were found between human-written and ChatGPT-generated essays, with AI-generated texts being easily identifiable, highlighting the need for ethical AI use guidelines.	OpenAI's GPT-3.5 Turbo model was used to generate essays, and NLP techniques, including automated linguistic analysis and random forest classification, were employed for analysis.
2.	"ChatGPT is the companion, not enemies": EFL learners' perceptions and experiences in using ChatGPT for feedback in writing	[24]	The study aimed to explore EFL learners' perceptions and experiences of using ChatGPT for feedback in their writing process.	The study found that AI assistance, specifically ChatGPT, significantly improved students' writing motivation, self-efficacy, engagement, and collaborative writing tendencies.	The AI application used in the study was Poe, an alternative to ChatGPT, which provides access to GPT-4 and GPT-3.5-turbo for generating feedback on writing.
3.	Utilizing an adaptable artificial intelligence writing tool (ChatGPT) to enhance academic writing skills among Yemeni university EFL students	[8]	The study aims to determine Yemeni EFL learners' opinions, benefits, and challenges regarding using ChatGPT as an AI-based writing tool in academic writing.	Yemeni EFL learners had positive perceptions of ChatGPT, noting improvements in writing fluency, accuracy, and overall quality, but expressed concerns about academic integrity and potential plagiarism.	ChatGPT
4.	Large language models and automated essay scoring of English language learner writing: Insights into validity and reliability	[18]	To evaluate the validity and reliability of four large language models (LLMs) for automated essay scoring (AES) of English language learners' writing.	GPT-4 showed the highest reliability and validity among the models, but all models exhibited performance fluctuations over time.	The study used Google's PaLM 2, Anthropic's Claude 2, and OpenAI's GPT-3.5 and GPT-4 for automated essay scoring.
5.	Using ChatGPT for second language writing: Experiences and perceptions of EFL learners in Thailand and Vietnam	[27]	The study aimed to explore the experiences and perceptions of Thai and Vietnamese EFL learners regarding the use of ChatGPT for second language (L2) writing to enhance their writing skills.	The study found that EFL learners perceived ChatGPT positively, valuing its ability to generate ideas, provide examples, and gather necessary information, significantly aiding in the writing process.	ChatGPT 3.5,
6.	Testing the viability of ChatGPT as a companion in L2 writing accuracy assessment	[16]	To evaluate the effectiveness of ChatGPT in assessing linguistic accuracy in L2 writing compared to human evaluators and Grammarly	ChatGPT's accuracy evaluations strongly correlate with human evaluations and writing scores, outperforming Grammarly in aligning with human judgments and predicting writing quality.	ChatGPT (GPT-4) and Grammarly.
7.	AI in essay-based assessment: Student adoption, usage, and performance	[22]	The study aims to explore the adoption and impact of AI tools on student performance in an undergraduate research proposal assignment.	The study found that while AI tools were widely adopted by students, their impact on academic performance was neutral, with no significant effect on student marks.	ChatGPT.
8.	Unveiling ChatGPT text using writing style	[11]	The study aims to detect ChatGPT-based plagiarism by leveraging stylometric features and machine learning classifiers to distinguish between human and AI-generated texts.	The study found that ensemble learning classifiers, particularly XGBoost, achieved 100% accuracy, recall, and precision in distinguishing between human and ChatGPT writing styles.	The study utilized AI text generators like ChatGPT and machine learning classifiers, including k-Nearest Neighbors, Decision Tree, Naïve Bayes, XGBoost, and Stacking, for text classification and plagiarism detection.
9.	Exploring ChatGPT-supported teacher feedback in the EFL context	[14]	To investigate the effectiveness of ChatGPT-supported teacher feedback in the Chinese tertiary EFL context and explore an AI-aided writing pedagogy to address feedback challenges in large classes.	ChatGPT-supported teacher feedback effectively addressed diverse error categories and improved student engagement and revision quality, highlighting the potential of an "AI + Teacher" model in L2 writing pedagogy.	ChatGPT was used to provide detailed corrective and holistic rhetorical feedback on student essays, which teachers then adapted and shared with students.

Table 2. Cont.

No.	Title	Citation	Aim of the Study	Main Findings on Using AI	Method: AI Application/Software Used
10.	“ChatGPT seems too good to be true”: College students’ use and perceptions of generative AI	[9]	The study investigates U.S. college students’ perceptions and usage of ChatGPT, examining its relationship with societal structures and student characteristics to understand how generative AI can be effectively and equitably integrated into educational settings.	The study found that factors such as gender, age, major, institution type, and institutional policy significantly influence ChatGPT usage. Non-native English speakers and older students use ChatGPT more frequently, and institutional policies allowing its use predict higher usage.	ChatGPT
11.	Beyond boundaries: Navigating the positive potential of ChatGPT, empowering education in underdeveloped corners of the world	[21]	The study aims to explore the implications of ChatGPT in higher education, particularly in underdeveloped countries, focusing on both opportunities and challenges, and proposing strategies for responsible integration.	ChatGPT can enhance personalized learning and administrative efficiency but requires careful management to prevent academic misconduct and over-reliance, especially in resource-constrained environments.	ChatGPT
15.	Playing with words: comparing the vocabulary and lexical diversity of ChatGPT and humans	[20]	To compare the vocabulary and lexical diversity of ChatGPT and humans when performing the same tasks	ChatGPT-3.5 uses fewer distinct words and has lower lexical diversity than humans, while ChatGPT-4 shows similar or even higher lexical diversity compared to humans.	ChatGPT-3.5 and ChatGPT-4 were used to generate text for comparison with human-generated text.
13.	Cognitive and sociocultural dynamics of self-regulated use of machine translation and generative AI tools in academic EFL writing	[25]	The study aims to explore the cognitive and sociocultural dynamics of self-regulated use of AI tools like ChatGPT and Google Translate in EFL writing among Japanese university students.	AI tools improved students’ writing outcomes and reduced anxiety, but human guidance and peer collaboration remained essential for effective learning.	The study utilized AI tools such as ChatGPT, Google Translate, DeepL, and Bing AI for various stages of the writing process.
14.	The great AI witch hunt: Reviewers’ perception and (Mis)conception of generative AI in research writing	[13]	To investigate how peer reviewers perceive, and judge AI-augmented research manuscripts compared to human-written ones.	Reviewers struggled to distinguish between AI-augmented and human-written texts but noted that AI-augmented writing improved readability and clarity while often lacking detailed research insights.	Google Gemini was used to create AI-paraphrased and AI-generated snippets for the study.
15.	Academic writing in the age of AI: Comparing the reliability of ChatGPT and Bard with Scopus and WebofScience	[12]	The study aims to compare the reliability of AI models (ChatGPT and Bard) with traditional scholarly databases (Scopus and Web of Science) in academic writing, specifically focusing on green buying behavior.	The study found that AI models like ChatGPT and Bard are not yet reliable for academic writing tasks, as their results significantly deviated from those provided by Scopus and Web of Science.	The AI applications used in the study were ChatGPT, developed by OpenAI, and Bard (now known as Gemini), developed by Google.
16.	Synergizing collaborative writing and AI feedback: An investigation into enhancing L2 writing proficiency in wiki-based environments	[26]	To investigate the impact of integrating collaborative writing with AI feedback on enhancing L2 writing proficiency among Thai-major undergraduate exchange students in a wiki-based environment.	AI-generated feedback significantly improved the writing proficiency of students in the experimental group compared to the control group, highlighting the effectiveness of AI in providing timely and personalized corrective feedback.	ChatGPT
17.	Understanding self-directed learning in AI-Assisted writing: A mixed methods study of postsecondary learners	[29]	To investigate how postsecondary learners use generative AI, specifically ChatGPT, to support their self-directed learning in writing	Learners primarily use ChatGPT for brainstorming and seeking inspiration, with mixed opinions on its impact on improving writing skills.	ChatGPT.

Table 2. Cont.

No.	Title	Citation	Aim of the Study	Main Findings on Using AI	Method: AI Application/Software Used
18.	Three-wave cross-lagged model on the correlations between critical thinking skills, self-directed learning competency and AI-assisted writing	[28]	To examine the correlations between critical thinking skills, self-directed learning competency, and AI-assisted writing, focusing on how self-directed learning moderates the relationship between critical thinking and AI-assisted writing	AI-assisted writing tools significantly enhance writing performance by improving language proficiency and providing immediate feedback, but critical thinking and self-directed learning are essential to avoid over-reliance on these tools.	Quillbot was used as the AI application to assist participants in revising and improving their writing tasks.
19.	Writing with generative AI and human-machine teaming: Insights and recommendations from faculty and students	[30]	To explore the integration of large-language model generative AI in a professional writing course, examining its impact on teaching, learning, and writing processes.	AI can be a valuable tool in the writing process, aiding in idea generation, drafting, and providing feedback, but it requires careful integration to avoid overreliance and ensure the preservation of human authorial agency	ChatGPT (specifically ChatGPT-3.5)
20.	How our authors are using AI tools in manuscript writing	[10]	The study aims to explore the ethical use of AI tools in manuscript writing, assess the benefits and risks of AI in scientific writing, and provide recommendations for better policies regulating AI tools' use	AI tools like ChatGPT-4 can significantly enhance the clarity and fluency of scientific writing, especially for non-native English speakers, but their misuse can lead to ethical concerns and potential misinformation	The primary AI tool used by the authors is ChatGPT-4, which assists in proofreading, rephrasing sentences, and providing technical support in manuscript writing.
21.	Investigating students' cognitive processes in generative AI-assisted digital multimodal composing and traditional writing	[15]	To explore the cognitive processes of EFL students using generative AI tools in digital multimodal composing and traditional writing tasks.	Students using AI tools created more structured and detailed texts, with the PPT group showing unique behaviors in generating and refining AI images.	ChatGPT, Bing Chat, Bing Image Creator, Quillbot, Grammarly, and ChatGPT-prompt-generator.
22.	Hey ChatGPT, give me a title for a paper about degree apathy and student use of AI for assignment writing	[19]	To quantify the willingness and history of psychology undergraduates using AI tools like ChatGPT for academic assignments and identify predictors of such behavior	Degree apathy was the strongest predictor of willingness to use AI tools for assignments, with higher apathy correlating with increased likelihood of AI misuse	ChatGPT
23.	Comparing the quality of human and ChatGPT feedback of students' writing	[23]	To compare the quality of formative feedback provided by ChatGPT and human evaluators on secondary student essays	Human evaluators provided higher quality feedback than ChatGPT in most categories, but ChatGPT's feedback was still relatively high quality and useful, especially for earl	ChatGPT

## 4. Discussion

In recent years, AI tools including ChatGPT or any other tool have become increasingly popular due to their resourcefulness and flexibility in applications and responses. This section discusses the findings of selected articles analysis based on obtained strengths, weaknesses, opportunities, and threats of ChatGPT use on academic writing by students in higher education. The analysis scrutinized the use of ChatGPT along with each dimension and feature of SWOT framework.

### Strengths

Coming to language learning and research writing field,

AI tools have been of great importance to the learners and researchers<sup>[31-33]</sup>. With regards to AI and ChatGPT strengths in improving students and researchers' writing, some of the significant and common practices of ChatGPT by students and researchers are reported in this review are highlighted below.

The analysis of studies highlighted that ChatGPT is used to help students and researchers generate ideas in any topic and can be utilized to plan and organize thoughts and ideas during writing. ChatGPT provides specific and main ideas about any topic and can report detailed information about any issue and topic. In the same vein,<sup>[8]</sup> found that users can make use of the advantage of ChatGPT's support and assistance from the early stages of writing and planning

to the final stage of preparing their work for submission. The advantages of using ChatGPT for practicing English writing include not only helping students generate ideas<sup>[34]</sup>, but it was found that ChatGPT can be used ChatGPT to plan their arguments by prompting the bot for data points or outlines<sup>[35]</sup>.

This study found Ai tools including ChatGPT supportive and useful in enhancing both efficiency and quality of writing. The efficiency lies in developing the content, finding the relevant ideas, fine-tuning the style and the grammar of writing<sup>[8, 10, 13, 15, 17]</sup>. Alkamel and Alwagieh<sup>[8]</sup> found that a significant majority of students found ChatGPT useful in improving the efficiency and productivity of their academic writing and was productive in enhancing the writing quality. Moreover, ChatGPT found to be useful in useful in maintaining less personalization while writing<sup>[17, 20–22, 25, 26]</sup>. Berriche and Larabi-Marie-Sainte<sup>[11]</sup> found that ChatGPT uses more impersonal language, excluding personal pronouns and expressions of feelings, and frequently relies on a combination of third person and passive speech. Most importantly, it was found that ChatGPT helped learners and researchers in providing quick feedback and support about their writings and even teachers use ChatGPT in providing feedback. ChatGPT found to be supportive in providing valuable support for language learners, potential enhancement to their writing skill through immediate feedback, error correction, and content generation<sup>[17, 23, 27, 36]</sup>. For enhancing writing skills, Han and Li<sup>[14]</sup> found ChatGPT supported teachers; feedback effectively addressing diverse error categories and improved student engagement and revision quality, highlighting the potential of an “AI + Teacher” model in L2 writing pedagogy.

### **Weaknesses**

Though AI tools including ChatGPT are powerful for generating ideas and support writers in organizing and reviewing and correcting grammar and style of their texts, they have shortcomings and weaknesses. This study highlights that one of the prevailing weaknesses is the writer’s overreliance on the AI tools and users depend heavily on AI tools in writings from the beginning till the end<sup>[9–11, 14–16, 27]</sup>. Bedington et al.<sup>[30]</sup> indicated that using ChatGPT requires careful integration to avoid overreliance and ensure the preservation of human authorial agency. This study’s findings also support the fact that over-reliance on AI tools may hinder in-

tellectual development and make the researchers and the students’ machine-dependent, not self-reliant and lazy<sup>[27, 33, 37]</sup>. Qasem<sup>[33]</sup> explored that another dominant fear of the use of AI ChatGPT highlighted in several studies here is that ethical background. Ethical concern of the use of ChatGPT during writing, is one of the prevalent findings found in this review and the potential misuse of artificial intelligence (AI) in education have led to genuine fears for many researchers in the academic community<sup>[17–21, 24–26]</sup>. Similarly, Qasem’s<sup>[33]</sup> study supports the findings of this study highlighting that one of the negative aspects of the extensive ChatGPT’s use is leading to the spread of plagiarism and lack of giving credit to the original sources. Alkamel and Alwagieh<sup>[8]</sup> also explored that through ChatGPT has benefits in improving writing in terms of fluency and accuracy but expressed the real concerns about academic integrity and potential plagiarism. Giving incorrect answers and information is one of the common weaknesses found in this study and several studies showed that ChatGPT gives incorrect responses and false information<sup>[8, 12, 13, 17, 29, 30]</sup>. This supports the claim of the existing literature that showed that depending more on ChatGPT in writing could result in the integration of false or biased information into works and difficulties and inaccuracies found with relation to the citation and reference in the replies generated by ChatGPT<sup>[38, 39]</sup>.

### **Opportunities**

AI tools discover great future and potential in different aspects for the learners, teachers, and researchers’ work and education. There are several opportunities also to be used effectively in language learning and skills development<sup>[51, 52]</sup>. This study found that ChatGPT is supportive in enhancing learning strategies<sup>[12, 14–16, 27]</sup>. Shabbir et al.<sup>[21]</sup> found the implications of ChatGPT in higher education, particularly in underdeveloped countries, focusing on both opportunities and challenges, and proposing strategies for responsible integration. This study highlighted the rise of collaborative learning of ChatGPT and other AI tools in skills development and how ChatGPT acts as “collaborative partner” of human writing and learning process<sup>[10, 13, 14, 27]</sup>. Several studies found that participants in experimental studies were eager to collaborate with ChatGPT during the writing task and showed high satisfaction with ChatGPT after writing<sup>[25, 40]</sup>. Interestingly, this research highlighted also the dominance and the emergence of ChatGPT’s innovative pedagogical



practices<sup>[14, 15, 17, 21]</sup>. Among the advantages of using ChatGPT and AI new models, this study found that using AI applications and tools can open door for generating new innovative pedagogical practices in improving the writing task<sup>[14, 15, 17, 21, 24–26]</sup> and in designing and innovating new AI tools to help institutions and teachers identify the human and unhuman writings and help them in all pedagogical academic writing practices. AI models need more scrutinizing and examination to verify their productivity in academic writing. In the same vein, Garg et al.<sup>[12]</sup> found AI models like ChatGPT and Bard are not yet reliable for academic writing tasks, as their results significantly deviated from those provided by Scopus and Web of Science. However, on other academic writing practices, Wiboolyasarin et al.<sup>[26]</sup> investigated the impact of integrating collaborative writing with AI feedback on enhancing L2 writing and found AI-generated feedback significantly improved the writing proficiency of students highlighting the efficiency of AI in providing timely and personalized corrective feedback. Moreover, it was highlighted that expected performance, habit, and enjoyment of AI applications can act as key determinants to influence teachers' intentions to use them<sup>[41]</sup>.

### **Threats**

Though several studies found that ChatGPT is promising and has several advantages in pedagogical practices and developing language skills<sup>[42, 43]</sup> this study found that there are considerable concerns about the increasing threats of the excessive use of ChatGPT in writing. Among the common and important threats about the use of ChatGPT in writing is skill degradation of users<sup>[15, 17, 20, 27, 28]</sup>. Al-khresheh<sup>[44]</sup> highlighted the same concerns about use of ChatGPT clarifying that the overreliance on ChatGPT lead to skill degradation and plagiarism. Here the analysis of the review and existing literature support the fact that AI tools are well-designed tools and, they are improving day by day and this strong ability of Chat GPT can make learners uncreative, lazy, unproductive in academic writing<sup>[33, 45]</sup>. The reliance on ChatGPT in academic writing can lead to a prevailing decline of creative, critical, and cognitive thinking among researchers and learners<sup>[46]</sup>. Similarly, it is found that ChatGPT does not enhance the critical and creative thinking abilities of learners as the generated responses are based on statistical patterns and models, which may lack deeper analysis and context of the topic<sup>[39, 47, 48]</sup>. Moreover, the findings of this study indicated

that the absence of internet access can act as a threat for writers and learners who depend more on ChatGPT as all AI tools rely on the availability of internet access<sup>[24, 49, 50]</sup>. Providing enough support to protect personal data is significant and it is absent in AI tools including ChatGPT<sup>[53, 54]</sup>. At the same time, this study highlights that data privacy concerns are one of the dominant factors and threats that need to consider and improve<sup>[9, 11, 12]</sup>. The most common threat and concern ethical issue that found to be the primary issue by several people in academia, especially the potential for plagiarism and the unethical use of data by AI models as they ability to generate text similar to original human work and makes it difficult to distinguish and arises genuine concerns about academic integrity and the ethical use of AI models<sup>[46]</sup>.

## **5. Conclusions**

The study provides an overview of the existing literature on using AI ChatGPT to manipulate the SWOT analysis and systematic review framework in academic writing. Based on the SWOT analysis framework and systematic review, this study explored ChatGPT's strengths, weaknesses, opportunities, and threats and its use in academic writing. The study's results emphasized that ChatGPT helps researchers and students' writing in increasing information access, generating ideas, planning and revising writing. The study found that the difficulty in finding the original source, lack of ensuring academic writing ethics, increasing student overreliance, and decreasing the creativity of original writings are among the prevailing weaknesses of using ChatGPT in academic writing. The chance of generating new AI programs and models and improving ChatGPT capabilities to cope with ethical standards are among the opportunities found in this study. The study found genuine threats and concerns in using ChatGPT in writing, including a lack of ensuring the originality of ideas and resources, a lack of adherence to academic ethics, plagiarism enhancement, and a drop in high cognitive and creative skills and writing creativity.

The findings of this study contain important implications for several people in the field, including students, researchers, policymakers, and all pedagogical sections. Highlighting the integration of AI in learning and research of language skills is essential. This ensures not only finding



safe and ethical methods of manipulating recent AI tools but also the practical implementation of AI technologies in educational settings.

This study has several limitations that were considered and need to be highlighted here. Primarily, the content analysis focused on scholarly articles covering the year 2024 only. This period covers a significant period, bringing several recent studies on AI technologies and tools, including ChatGPT, and their integration into language learning and teaching. Moreover, the sample size was limited but carefully selected from scholarly and well-known sources that publish valued works.

## Author Contributions

Conceptualization, W.A. and F.Q.; methodology, W.A.; software, F.Q.; validation, A.A., H.A.T. and W.A.; formal analysis, F.Q.; investigation, W.A.; resources, A.A.; data curation, H.A.T.; writing—original draft preparation, A.A.; writing—review and editing, W.A.; visualization, A.A.; supervision, H.A.T.; project administration, W.A.; funding acquisition, W.A. All authors have read and agreed to the published version of the manuscript.

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## Institutional Review Board Statement

This research did not require IRB approval.

## Informed Consent Statement

Neither human nor non-human subjects were involved directly in this research. Therefore, informed consent was not required.

## Data Availability Statement

The data that supports the findings of this study are available from the corresponding author, [F.Q.], upon the request.

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## Conflict of Interest

The authors declare no conflicts of interest.

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