Exploring the Use of AI Applications by EFL Postgraduate Students at the Libyan Academy to Enhance Their Academic Writing Skills

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Abstract

The proliferation of artificial intelligence (AI) has impacted various fields, including education. In the context of foreign language (FL) learning, AI tools are increasingly being adopted by both instructors and students to facilitate the teaching and learning processes. This qualitative study explores the utilization of AI tools by English as a Foreign Language (EFL) postgraduate students at the Libyan Academy to enhance their academic writing skills. Data were collected through semi-structured interviews with 10 MA and PhD students in Applied Linguistics and analyzed using thematic analysis. The analysis revealed several key themes: the types of AI tools engaged, perceived benefits, encountered challenges, ethical considerations, and skill development. Findings indicate that students employ a diverse range of AI tools, with levels of dependency varying from limited consultation for specific tasks to heavy reliance for completing various writing assignments. While participants acknowledged significant benefits, particularly in enhancing their writing proficiency, they also reported drawbacks, such as limited access to premium versions of AI applications. The study concludes with recommendations for policymakers, instructors, and students, emphasizing the need for clear institutional guidelines on AI use, initiatives to raise student awareness of its ethical application, and efforts to mitigate challenges that could otherwise passively hinder the development of academic writing skills.

Key words

Academic Writing, Artificial Intelligence, EFL, Postgraduate Students, Qualitative Research

Introduction

Academic writing presents significant challenges for EFL learners at the postgraduate level. These challenges encompass grammatical accuracy, lexical sophistication, rhetorical structure, and citation conventions (Hyland, 2015; Lillis & Curry, 2010). In recent years, AI powered writing tools have emerged as transformative aids, promising to revolutionize the writing process for native and non-native English speakers. These tools, ranging from grammar checkers to advanced text generators, provide real-time, personalized feedback on a spectrum of writing features, including grammatical accuracy, lexical sophistication, syntactic complexity, and overall stylistic tone (Fitria, (2021). For academic writers, this

promises increased efficiency, improved technical quality, and a powerful means of scaffolding the learning of complex writing conventions. However, their transformative potential is accompanied by significant discussions regarding over-reliance, and critical issues of academic integrity and critical thinking development. (Perkins et at., 2023)

Problem statement

This challenge is felt by postgraduate students in Libya, where EFL learners often face additional constraints, such as limited exposure to authentic English environments and resource constraints within higher education institutions (Orafi & Borg, 2009). For these students, producing the high-quality theses, dissertations, and research articles required for their degrees is a daunting task. Despite the global proliferation of AI writing assistants, it remains unclear how these technologies are being adopted and perceived by Libyan higher education students.

Existing research has demonstrated the efficacy of AI tools in improving surface-level features of writing (e.g., Saed, 2024; Ziar, 2025; Dja'far & Hamidah, 2024) and has explored student attitudes in various international contexts (Milinković et al. 2024; Quinde, 2024), However, an obvious gap exists in the literature regarding the in-depth, qualitative experiences of postgraduate students in Libya. There is a lack of understanding of how these students integrate AI into their writing processes, the specific challenges they encounter, and their perceptions of how these tools impact their long-term development as academic writers, a gap which this study aims to fill.

Study aims

1. Exploring EFL postgraduate students experiences and processes of using AI applications for academic writing.
2. Identifying their perceptions regarding the benefits and challenges associated with using AI tools for academic writing.
3. Investigating ways by which AI applications have enhanced their academic writing skills from their perspectives?

Research Questions

1. How do Libyan EFL postgraduate students describe their experiences and processes of using AI applications for academic writing?
2. What perceived benefits and challenges do they associate with the use of these tools?
3. In what ways, if any, do students believe AI applications have enhanced their academic writing skills?

Study significance

The findings of this research are significant for several stakeholders. For Libyan educators and policymakers, it can inform the development of effective guidelines and pedagogical frameworks for the ethical and productive integration of AI. For the global EFL community,

it offers a nuanced case study from an under-researched context, contributing to a more comprehensive understanding of how technology intersects with FL writing development.

Literature review

Academic writing is widely recognized as a fundamental competency for postgraduate students, essential for knowledge spreading, academic approval, and entry into the global intellectual community (Swales, 1990). For EFL learners, this task is particularly demanding. As Hyland (2009) argues, postgraduate students must not only master intricate subject matter but also navigate the complex linguistic and rhetorical conventions of English academic discourse, often under significant pressure. These challenges frequently manifest in difficulties with lexical precision, syntactic complexity, and compliance with genre-specific norms, such as constructing a persuasive research argument or appropriately integrating source material.

In response to these persistent challenges, AI has emerged as a transformative means in education (Zawacki-Richter et al., 2019). AI-powered writing tools, which can be classified into two types, have gained significant influence. The first category includes Automated Writing Evaluation (AWE) tools such as Grammarly, which mainly focuses on providing corrective feedback on grammar, punctuation, spelling, and style (Link et al., 2022). The second, more recent type includes Generative AI platforms like ChatGPT, which can assist in earlier stages of the writing process, such as brainstorming, outlining, and paraphrasing (Crompton & Burke, 2023). The proliferation of these tools has sparked a debate regarding their potential to spread writing support versus worries about academic integrity and student over-reliance.

Empirical research on the efficacy of AI tools in EFL contexts has produced largely positive, but different results. Several studies report significant improvements in students' surface-level features of writing. For example, an experimental study conducted by Valizadeh & Sahmaniasl (2023) found that EFL students using Grammarly demonstrated a statistically significant decrease in grammatical and lexical errors compared to a control group. Similarly, a study conducted by Fitria (2021) with students in Indonesia stressed that Grammarly improved learners' confidence and encouraged self-editing.

However, the effect on higher-order writing skills is less clear-cut. While some researchers, like Koltovskaia (2020), claim that AI feedback helped students organize their ideas more coherently, others mentioned some limitations. For example, a mixed-methods study conducted by Barrot (2023) found that while AI tools were effective for sentence-level corrections, they often provided insufficient feedback on argumentative structure and source integration, which may result in frustration among advanced learners.

Despite the growing body of international literature, AI-assisted writing in Libya, remains underexplored. The Libyan higher education context presents a unique socio-cultural and infrastructural situation, characterized by its own challenges and opportunities, which may impact how technology is perceived and adopted (Elsherif, 2025).

Postgraduates face different pressures, including the demand for original research and publication in global journals. As maintained by Zakaria et al. (2024: 663) "Articulating

concepts with precision and employing appropriate scholarly terminology proved to be formidable aspects of the writing process". Therefore, there is an urgent need for a focused, qualitative investigation that explores how Libyan EFL postgraduate students navigate, perceive, and use AI applications to meet their high-stakes academic writing demands. This study aims to address this gap by exploring the in-depth, lived experiences of this specific group of students.

Methodology

This study adopted a qualitative research design to reach its aim of exploring the in-depth experiences and perceptions of Libyan postgraduate students regarding the use of AI applications in their academic writing.This design is particularly appropriate because the research questions are exploratory in nature and seek rich, descriptive data rather than numerical measurements (Creswell & Poth, 2018). The data collection tool was semi-structured interviews, which allowed for deep discussion and the emergence of unanticipated themes.

The study was conducted at the Libyan Academy for Postgraduate Studies in Tripoli, a major public institution hosting a diverse body of Master's and PhD students from across Libya. Purposive sampling was used to recruit participants. The inclusion criteria required that participants are currently enrolled as EFL postgraduate students (MA or PhD), and self-identified users of AI applications for academic writing. A total of eight postgraduate students were recruited. The sample consisted of five MA and three PhD students, majoring in applied linguistics. While the sample size is not intended to be statistically generalizable, it provides sufficient depth and variety of experiences for a qualitative inquiry, following the principle of data saturation (Saunders et al., 2018).

The data collected using a semi-structured interview protocol. This instrument was chosen because it provides a guided framework with key questions while allowing flexibility to probe interesting topics and seek clarification for participant responses (Kallio et al., 2016). The protocol was developed based on the research questions and a review of the relevant literature. This study adhered to strict ethical principles. Oral consent was obtained from all participants. Anonymity and confidentiality were guaranteed; all identifying information was removed. The transcribed interview data were analyzed using thematic analysis following the six-phase framework outlined by Braun and Clarke (2006: p. 87-88), namely familiarization, generating initial codes, searching for themes, reviewing themes, defining and naming themes and, finally, producing the report.

Data analysis results

This section analyses the data obtained from the participants by going through the interview questions and providing examples of the answers given by these participants

Q1. Can you tell me a bit about your academic background and your field of study?

In their answer to this question, most of the participants said that their academic background and their field of study was not free of challenges. For example, Participant H said, *"My*

experience wasn't that bad but also wasn't empty of mistakes, since I had some mistakes in spelling and structuring". Participant E added, "*Academic writing was somewhat challenging for me at first because I used to write informally. However, I learned how to write academically by carefully following my teachers' instructions and continually working to improve my writing".* However, some of the participants maintained that using AI helped in dealing with such challenges and weaknesses. For instance, participant D argued**,** *"Before I started using AI tools, I generally believed my academic writing skills were strong. However, I later realized that my writing still needed improvement—especially in clarity, cohesion, and structuring ideas. Using AI tools helped me identify areas I had overlooked and gradually strengthen them".* Participant B stated, *"Before using AI tools, my experience with academic writing in English was marked by several challenges, particularly in organizing ideas, maintaining academic tone, and ensuring linguistic accuracy. While I possessed the foundational skills, producing well-structured and coherent academic texts required considerable time and effort".*

Q2. What specific aspects of academic writing did you find most challenging?

In their response to this question, participants mentioned several challenging aspects including finding sources and references, generating relevant and well-focused ideas, selecting appropriate academic vocabulary, organizing arguments into a coherent structure, paraphrasing, applying correct formatting and citation styles, and ensuring grammatical accuracy. For instance, participant H said, *"The most challenging aspect faced is getting access to recent academic references. In addition, formatting the citations as per the style I am adopting was tiring and time-consuming. On the other hand, writing sometimes risks grammar slips and spelling errors that might not be easily noticed, only upon multiple revisions".* Participant B clarified, *"The most challenging aspects of academic writing included generating relevant and well-focused ideas, selecting appropriate academic vocabulary, and organizing arguments into a coherent structure. I also faced difficulties in integrating sources effectively and applying correct citation formats".* Finally, Participant E claimed that *"paraphrasing was difficult because it was hard to change the original text's structure and words while keeping the meaning clear and accurate, and I also found it challenging to find relevant words or vocabulary to express ideas clearly".*

Q3. Which AI application(s) have you used to help overcome these challenges in your writing? How did you first learn about it?

Responses to this question showed that students use various AI applications including Grammarly, ChatGPT, QuilBot, DeepSeek, and Copilot. Students claimed that they mainly had heard about these applications from social media and through peers and classmates. For example, Participant C said, *"I have used several AI applications to support my writing, especially Grammarly and ChatGPT. Grammarly has been part of my academic work for almost three or four years, and it has consistently helped me identify grammar issues and refine my sentences. I discovered ChatGPT almost by chance, but it quickly became one of the most useful tools for improving my writing".* Participant E added, *" The first AI application I used was Copilot for getting answers and information, not to improve my writing. Now, I use Grammarly primarily to check my grammar mistakes".*

Q4. Can you walk me through a typical example of how you use an AI tool when working on a writing assignment?

The results related to this question show that students use AI in a variety of ways. Some students use it from the initial stage of their writing task in that they use these applications to brainstorm ideas and to seek answers related to specific elements of their writing. For example, Participant A said, "*When it comes to writing assignments, especially when we don't have time, I insert the question I want to search about in Chat GPT or DeepSeek, then after I get a clear background, I start paraphrasing the ideas. However, and to be honest, when I do not find time, I start looking for any AI humanizer to insert the AI-written texts".*

However, other students only use these applications to refine their work after they have worked on it on their own. For example, Participant C mentioned, *"When working on a writing task, I usually begin by drafting my ideas in simple language. After that, I give very specific instructions or prompts to the AI tool to help me refine the paragraph such as improving clarity, adjusting the tone, or rewriting it in a more academic style. I then review the suggestions carefully and make additional adjustments".*

Q5. For what specific writing tasks do you find AI most helpful?

The responses to this question showed that students find AI helpful with a variety of writing tasks including generating ideas, brainstorming, creating outlines, paraphrasing and summarizing, checking grammar, improving writing style, and effectively referencing the citations. For example, participant C stated "*I find AI tools especially useful for generating ideas, brainstorming, and creating outlines. They also help me with paraphrasing, summarising complex information, and improving the overall style and cohesion of my writing".* Participant G stated *"It helps me in summarizing my ideas and improving the style of my writing. It helps me make my sentences clearer, more organized, and easier to read. I also sometimes use it for paraphrasing or finding better ways to connect my ideas, but summarizing and style improvement are the most useful for me".*

Q6. Could you describe a time when the AI tool was particularly helpful?

In their response to this question, interviewees mentioned a number of occasions where they resorted to AI to solve certain problems related to a variety of tasks such as providing an outline for an academic work, summarizing long documents, refining the academic tone, and improving coherence, paraphrasing certain paragraphs, organizing the structure, and refining the language. For example, Participant G said, *"One time, I had to summarize a research paper about how the letter R is pronounced differently in different places. The paper was long and full of technical terms, and I had trouble finding the main points. It was my first time using AI, so I tried ChatGPT to summarize the research and give me the key points. This helped me understand the paper faster and complete my summary more easily".* Participant B stated, *"The AI tool was especially helpful when I was preparing a research paper for my academic promotion. The tool helped me reorganize the section, refine the academic tone, and improve coherence. This significantly enhanced the quality of the final paper".*

Q7. Could you describe a time when the AI tool was unhelpful, confusing, or gave you poor feedback?

In their responses to this question, interviewees mentioned a number of instances where AI was not helpful and provided poor feedback. For instance, participant B said, *"On one occasion, the AI tool was unhelpful when I asked it to refine a theoretical explanation in my paper. Instead of improving the clarity, it oversimplified the concept and altered the intended meaning. I eventually had to rewrite the section myself to maintain the correct academic interpretation"*. Participant E told her story by saying *"There was a time when I asked the AI tool for famous authors' works, but it provided incorrect names that I recognized as wrong. For example, I once asked about the writer of a poem, and it gave me the wrong poet's name.. Because of this, I do not depend on AI tools for exact sources or facts"*.

Q8. In your opinion, how has using AI tools affected the quality of your academic writing?

In their responses to this question, all participants claimed that AI tools have helped them improve the quality of several aspects of their academic writing including the style, the structure, and the grammar and organization. For example, Interviewee C argued that *"Using AI tools have noticeably improved the quality of my academic writing, particularly in terms of clarity and organization. I feel that my paragraphs are now more coherent, and the structure of my writing has become stronger and more consistent"*. Interviewee B added, *"Using AI tools has positively impacted my academic writing by making it more precise and well-structured. They assist in organizing ideas, refining vocabulary, and improving sentence clarity"*.

Q9. How has using AI tools affected your confidence as an academic writer in English?

In their responses to this question, most of the students claimed that AI affected them in positive ways the most important of which is strengthening confidence. For example, interviewee B said, *"Using AI tools has strengthened my confidence in academic writing. They provide guidance on structure, vocabulary, and clarity, which reassures me that my work meets academic standards. As a result, I feel more secure in expressing my ideas effectively in English"*. However, one of the students also mentioned some negative effects. Interviewee D maintained, *"AI has had both positive and negative impacts on my confidence. When I have to brainstorm ideas or edit without AI support, I sometimes feel less confident because I depend on AI for accuracy and clarity"*.

Q 10. Do you feel that using these tools has helped you learn about English grammar, vocabulary, or writing conventions? If yes, how? If no, why?

Answers to this question were divided; some participants gave a positive answer claiming that AI tools helped them to learn some of the language aspects like grammar and vocabulary. For example, Participant F said***,*** *"Yes, AI tools have helped me learn by showing corrections in real time and offering explanations. Over time, I became more aware of my common mistakes",*. However, some other students mentioned that AI tools did not help them enhance these language aspects. For instance, Participant B stated, *"No, using AI tools has not significantly helped me learn English grammar, vocabulary, or writing conventions.*

While they assist in producing polished text, I tend to rely on the suggestions rather than actively learning from them, so the improvement in my language skills is limited".

Q11. Some people worry that using AI might make students dependent and hinder their own skill development. What are your thoughts on this?

Regarding the answer to this question, almost all participants agreed with the statement that using AI might make students dependent and it might hinder their own skill development. For instance, Student B argued, *"I believe this is a valid concern. Relying too heavily on AI tools can make students dependent, potentially limiting their critical thinking and independent writing skills. However, if used responsibly as a supplementary aid rather than a replacement, AI can support learning, improve efficiency, and enhance writing quality without hindering skill development".* However, Interviewee C elaborated on this issue by saying *" If students rely on AI to do everything for them, then of course it can affect their development. But if they use it thoughtfully like checking their grammar, refining wording, or supporting idea generation it can actually help them grow. For me, AI is a support, not a replacement for my own thinking".*

Q12. What challenges or frustrations have you faced while using AI writing tools?

Responses to this question showed that the biggest challenge is the cost of paid versions of AI applications while free versions have limitations. Other challenges include inaccuracy and oversimplifications of AI responses and suggestions, and technical issues such as slow processing and weak internet connection. For example, Participant D said, *"The biggest challenge is cost. The most effective AI tools are paid, while free versions sometimes provide limited or irrelevant responses".* Participant E argued, *"I cannot trust AI writing tools 100% because many times they provide incorrect information, grammar mistakes, or wrong sentence structures. I often have to spend a lot of time searching for the exact sources and verifying facts myself".*

Q13. Have you encountered situations where you disagreed with the AI suggestion? What did you do?

In their responses to this question, all participants said that they did encounter situations where they were not happy with AI suggestions and feedback. For instance, Participant B stated, *"Yes, there have been times when I disagreed with the AI's suggestions. When this happened, I critically evaluated the recommendation and made adjustments based on my own judgment and knowledge of academic writing. I treated the AI as a guide rather than a definitive authority".* Participant I argued, *"Yes, I guess that many AI tools are still far away from perfection in terms of accuracy, and produce unreliable output. To be on the safe side, I tend to verify the content".*

Q14. There are important ethical discussions about AI in academia. What is your understanding of academic integrity when using these tools? Where is the line between getting help and plagiarism?

In their responses to this question, almost all participants showed awareness of the difference between getting support from AI and plagiarism. For example, Participant B stated, *"I*

understand academic integrity with AI tools as maintaining responsibility for one's own work while using AI as a supportive resource. It is acceptable to seek help with wording, structure, or clarity, but presenting AI-generated content as one's original ideas constitutes plagiarism". Participant C declared, *"I believe academic integrity means using AI as a tool for support, not as a substitute for my own work. Getting help to improve grammar or structure is acceptable, but copying large sections or letting AI think for me crosses the line into plagiarism".* Participant E added, "*Academic integrity means being honest and responsible in your academic work. like using your own thinking, giving proper credit, and not copying others' work".*

Q15. How do you ensure that the work you submit is still authentically your own?

Participants responses to this question showed that they use different strategies to ensure that the work is authentically theirs. These strategies include using proper citations and referencing, using one's own knowledge and ideas, avoiding copying large blocks of text and rewriting it in one's own words. Participant C, for instance, maintained, "*I always make sure the content, the ideas, analysis, and arguments come from me. Even if I use AI to improve the wording, I review everything carefully, adjust it to match my voice, and ensure it reflects my understanding".* Participant D added, *" To keep my work original, I limit AI's role to brainstorming, idea generation, and editing. I avoid copying large blocks of text and make sure I rewrite and think through the content myself".* Participant B commented, "*I make sure my work is authentically my own by taking full responsibility for the content and ideas. I use AI tools solely for editing, phrasing, or organizing my writing, while generating the arguments, analysis, and conclusions independently. I review and adapt any AI suggestions to ensure the final text accurately reflects my own voice".*

Q16. As a postgraduate student, the expectations for original thought are very high. How does using AI fit with the goal of producing original research and analysis?

In response to this question, the majority of participants emphasized the originality of research and the authenticity of analysis. For example, Interviewee B argued, *"Using AI tools aligns with the goal of producing original research only when they are used to support, not replace, independent thinking. I rely on AI for language refinement, structure, and clarity, while the generation of ideas, critical analysis, and conclusions are entirely my own".* Interviewee C, declared, *"The originality should come from my critical thinking, analysis, and interpretation of the data. AI simply helps me express those ideas more clearly, but it does not generate the academic contribution itself".*

Q17. Are there any specific challenges or benefits to using AI tools in the Libyan higher education context?

The major challenge which was emphasized by all participants is Internet access; some participants complained about limited or lack of internet access and others claimed that internet cost is a problem. Another issue that has been raised is the lack of clear institutional guidelines that govern AI use. For example, participant C argued. *"In the Libyan context, the main challenges are internet access and the lack of clear institutional guidelines about using AI. Sometimes the connection is unstable, which makes it difficult to rely on these tools".*

However, Participant D claimed that Internet access is improving, "*but we still lack clear institutional policies governing AI use. I also think the Ministry of Higher Education should provide plagiarism and AI-detection tools to universities to ensure fair and ethical academic practices".*

As for the benefit of using AI in the Libyan higher education context, participants mentioned some of these benefits including improving students' writing, overcoming language barriers, enhancing clarity and structure, and giving quick access to information. For instance, participant B said, *"AI helps students improve writing, overcome language barriers, and enhance clarity and structure, which is especially valuable where resources are limited".* Participant G added, *"One benefit is that AI gives quick access to information, ideas, and summaries, which helps students work more efficiently".*

Q18. Have your instructors provided any guidance on using AI for your academic work?

Almost all participants gave a negative answer to this question which means that they were provided by little guidance on using AI by their instructors for their academic work, For instance, participant C said, *"Some instructors have mentioned AI tools, but I have not received detailed or formal guidance about how to use them academically. Most of what I learned came from my own experience and experimentation. I think it would be helpful if institutions provided clearer instructions on how to use AI ethically and effectively"*. However, participant A gave a positive answer to this question by saying *"Yes, although most inspectors have no idea about it, some have helped us a lot to know about new tool or the taught us how to learn some".*

Q19. Looking ahead, do you plan to continue using AI tools for your academic writing? Why or why not?

In their responses to this question all participants gave a positive answer ensuring that they will continue using AI tools for their academic work. As for the reasons for this, most of the participants emphasized that these tools save their time and help them achieve their goals quickly. Other reasons included improving clarity, structure, and accuracy, refining language and organizing ideas, and improving the writing style in general. Participant E, for example, answered, *"Yes, I plan to continue using AI tools for my academic writing because they help me improve my writing style and make my writing clearer".* In the same manner, Participant I added, *"Yes, I will continue using them as a supportive tool, not a substitute for my critical thinking. While it's important to keep my academic voice in research, I still need them to ensure proper citation and to revise the accuracy of language".*

Q20. Is there anything else you would like to share about your experience with AI and academic writing that we haven't covered?

At the end of the interview, each participant was asked to add anything that has not been covered during the interview. All participants gave their comments. For instance, Participant A commented humorously, *"I just wish if we can reach an AI tool that can never be detected".* Participant D added, *"I believe AI will continue to shape the future of academic writing, but students must balance its benefits with responsible and ethical use".* Participant

F said, *"AI has been misunderstood by many people my experience with it is using it as a helper not as the main source".*

Discussion of Findings

Five themes have emerged from the analysis of the interview. Therefore, discussing the findings will be based on these five themes.

Theme 1: Background and Initial Writing Practices

The data revealed a common consensus among participants regarding the significant challenges characteristic of their academic writing processes. These challenges stemmed from both their specific disciplinary fields and gaps in prior academic training. Several writing obstacles were identified covering the entire research writing process such as difficulty in sourcing relevant academic references and literature, struggles with generating focused research ideas and organizing logical argument structures, challenges in selecting appropriate academic vocabulary, paraphrasing effectively, maintaining grammatical accuracy, and problems with applying correct citation styles and formatting documents to meet academic standards.

These findings align with established literature on academic writing hurdles, particularly for non-native English speakers and students in contexts with limited access to extensive academic resources ((Orafi & Borg, 2009). The participants' reported use of AI as a scaffold mirrors broader trends in Educational Technology, where tools are adopted to bridge digital literacy or academic literacy gaps (Crompton & Burke, 2023). The specific tasks cited—paraphrasing, citation formatting, and idea organization—are precisely the areas where AI writing assistants have been documented to offer immediate procedural support, acting as a personalized, on-demand layer of support alongside traditional learning (Zawacki-Richter et al., 2019).

Theme 2: Patterns of Engagement with specific AI tools

Participants reported using various AI-powered writing assistants for a number of tasks including grammar and style, conversational generation and brainstorming, paraphrasing and text integration. Commonly mentioned tools included Grammarly, ChatGPT, DeepSeek, QuillBot, Copilot, and Scispace. The primary channels for discovering these tools were informal networks—namely, recommendations from, classmates, and demonstrations on social media websites - rather than formal guidance from their institution. This finding aligns with Koltovskaia (2020) who maintains that relying on informal channels such as social media and peers for discovering platforms is a common pattern when it comes to adopting technological tools for educational goals especially when relevant formal support is lacking.

Another finding was that engagement with AI tools varied significantly based on individual writing strategies, revealing two primary modes of use: Some participants employed AI from the initial stages of writing, using it to brainstorm research ideas, generate

answers to conceptual questions, and create outlines. Others adopted a more independent drafting process, turning to AI primarily for revision and refining after composing their own drafts, focusing on refinement rather than generation. This observed dichotomy is in harmony with Barrot (2023) who maintains that the strategic choices L2 students make are based on their self-efficacy, and learning purposes in addition to task perception.

Another result that has emerged from this study is that participants consistently found AI tools helpful for a wide range of specific academic writing tasks. These include pre-writing tasks such as idea generation, brainstorming, and creating structural outlines, and while writing tasks such as drafting and revising such as paraphrasing and summarizing, and,finally, editing and formatting including checking accuracy of grammar, citation, and referencing. This finding is consistent with Kohnke et al, (2023) who argue that AI tools have multifunctional scaffolds across the whole writing process and that these tools are used by student writers to fulfil micro tasks such as paraphrasing and formatting so that they can concentrated on macro tasks such as developing arguments and coherence.

Despite overall positive utility, participants cited several instances where AI feedback was suboptimal or unhelpful. These shortcomings typically involved the generation of superficial or inaccurate content, poorly structured outlines, and ineffective paraphrasing that risked plagiarism. Such experiences necessitated critical evaluation and often manual correction by the student. In this respect, Assefa (2924) highlighted the limitations of generative AI in educational contexts, specifically for academic writing, and therefore, users should be able to evaluate the adequacy of these tools and view them as imperfect assistants not as autonomous authorities.

Theme 3: Perceived Benefits, Challenges, and the Dependency Paradox

All participants reported that AI tools contributed to a noticeable enhancement in the overall quality of their academic writing. Specific areas of improvement included stylistic refinement, structural and organizational coherence, and grammatical accuracy. This was consistently viewed as a primary benefit, enabling the production of more polished and academically acceptable texts. This is consistent with findings made by researchers (e.g., Yan, 2023) which indicate that AI tools are used as a scaffold to reduce cognitive load by automating lower-order concerns such as grammar and phrasing which allows students to focus their attention on higher-order issues such as structure, argumentation and style.

Another finding of this study showed that the use of AI tools had a significant affective dimension. A majority of participants described a positive impact on their academic confidence, feeling more assured in their ability to produce work that meets academic standards. Regarding active learning, experiences were mixed. Some participants felt AI tools actively aided their language acquisition, citing improvements in their understanding of grammatical rules and vocabulary usage through iterative feedback and examples. Conversely, others reported that the tools served primarily as a corrective aid without fostering tangible long-term improvement in their personal language skills. According to Barrot (2023), this reflects an ongoing debate regarding AI feedback; while some think that it

can promote language acquisition, others warn of potential feedback dependency, leading to overreliance which may hinder the internalization of rules and long-term skill development.

Another finding showed that a near-unanimous concern emerged regarding potential over-reliance. Almost all participants agreed that uncritical dependence on AI could hinder the development of core academic competencies. They articulated a risk that relying on AI to fulfil tasks like drafting, paraphrasing, and structuring might impede the cultivation of independent critical thinking, authentic vocabulary development, and intrinsic writing skills. In this regard, Lee (2024) warns that overreliance on AI tools can have a negative effect on problem solving ability and reduce opportunity for productive struggle necessary for learning.

Theme 4: Navigating Ethical, Practical, and Developmental Considerations

Participants identified several practical barriers to effective AI tool use. The most frequently cited challenge was financial—specifically, the cost of premium features in paid versions, while free versions were perceived as functionally limited. Additional operational hurdles included concerns over output reliability, such as inaccuracies and oversimplified content, and technical constraints like slow processing speeds and unstable internet connectivity, which hinder consistent access. Adeshola and Adepoju (2023) highlighted the significant practical and socioeconomic barriers that mediate the theoretical benefit of AI platforms, especially in developing educational contexts. They, further add that limitations such as slow processing and internet instability due to infrastructural constraints may limit consistent pedagogical integration of such tools and technology in general.

All participants reported instances where they were dissatisfied with AI-generated suggestions or feedback. This necessitated a layer of critical evaluation, where users had to discern, reject, or substantially modify the AI's output, indicating that its use is an interactive rather than a passive process. This is in line with Tseng and Warschauer (2023) who argue that the necessity for critical evaluation and active intervention directly supports the conceptual paradigm of AI as a 'collaborative tool' rather than an authoritative solution.

Another finding has shown that strong awareness of academic integrity norms was evident. Almost all participants demonstrated a clear understanding of the ethical distinction between using AI for support and committing plagiarism. They recognized that AI should function as an aid rather than an author. This awareness aligns with existent research (e.g., Perkins (2023), which indicates that students are actively negotiating the 'gray area' between acceptable assistance and misconduct and that they consciously distinguish between using AI as an aid and utilizing it as an author which violates scholarly integrity.

To maintain the authenticity of their work and uphold integrity, participants employed several proactive strategies such as basing work primarily on their own knowledge and ideas, using AI for specific tasks such as brainstorming, paraphrasing but actively rewriting and integrating suggestions into their own voice, applying proper citation and referencing protocols to any AI-generated content or ideas that informed their work and,

finally, consciously refraining from copying large AI-generated text blocks. This finding is in line with scholarly observations (Elaiess. (2024) that the student is actively developing a ' personal use policy' to deal with ethical ambiguity of AI-assisted writing, giving priority to originality, criticality and transparency.

Theme 5: Contextual Factors, Guidance Gaps, and Future Directions

Despite their active use of AI tools, the majority of participants strongly emphasized the non-negotiable importance of research originality and the authenticity of their personal analysis. This underscores that AI is viewed as a support mechanism within a framework that values genuine intellectual contribution. This aligns with what Chan (2023) said that students' insistence on originality and authentic analysis demonstrates an understanding of core academic values, which suggests that they view AI as a tool for enhancing their intellectual work rather than replacing it.

Participants identified significant external factors influencing their AI use which can be classified into challenges and benefits. As for the challenges, the foremost obstacle was inadequate internet access, encompassing both connectivity reliability and affordability. A second major challenge was the absence of clear institutional policies governing the appropriate use of AI in academic work. Regarding the benefits, within the Libyan higher education context, AI was seen as particularly beneficial for improving overall writing quality, overcoming English language proficiency barriers, enhancing textual clarity and structure, and providing rapid access to information. This finding reflects the critical interrelationship between institutional and infrastructural limitations and the perceived pedagogical value of AI. This finding in the Libyan context is in harmony with global findings made by scholars like Crompton and Burke (2023) who identified challenges and benefits, and highlighted the infrastructural and policy gaps in developing countries like Libya. It is obvious that socioeconomic and infrastructural factors seriously mediate technology adoption in addition to the lack of policy which places more burden on students.

When asked about formal support, almost all participants indicated they had received little to no guidance from instructors or their institution on how to use AI ethically and effectively for their academic work. This points to a significant gap between student practices and formal pedagogical support. This aligns with Compton and Burke's (2023) argument that the absence of clear institutional policies can lead to inconsistent understanding of academic integrity, inadequate learning outcomes, and increased anxiety among students using these tools independently.

All participants expressed a positive intention to continue using AI tools in their future academic pursuits. Their primary motivations were pragmatic and efficiency-driven: the tools are seen as major time-savers that help achieve goals more quickly. Additional reasons included their utility in refining language, organizing ideas, and improving the formal style and accuracy of their writing. The emphasis on pragmatic efficiency and time-saving as chief reasons mirrors findings made by Chan and Hu (2023) that students adopt AI tools as strategic resources for academic workload management.

Conclusion

This study aimed to explore the perceptions and experiences of EFL Libyan postgraduate students regarding the use of Artificial Intelligence in their academic writing. Conducted within a context of significant pedagogical and infrastructural challenges, the research reveals a complex adoption of AI tools, characterized by two contradictory views: AI as an essential support and AI as a potential risk requiring careful utilization.

The findings present an image of students who are resourceful, and critically engaged. They have independently integrated a variety of AI tools into their academic writing work to address various challenges. For these students, AI acts as a compensatory aid, effectively enhancing the academic field and, significantly, boosting their confidence in producing work that meets international standards. The tools are largely valued for their efficiency, saving time and providing immediate feedback.

However, this pragmatic reliance exists alongside a pronounced awareness of the ethical and developmental drawbacks. Participants expressed concern about over-dependence and skill atrophy, worrying that uncritical use could gradually weaken their own critical thinking, vocabulary, and authentic voice. They consciously employ strategies to ensure the originality of their work, such as rigorous paraphrasing and citation, and demonstrating a clear understanding of the difference between AI-assisted writing and plagiarism. This highlights that they are not passive consumers but active users who critically judge AI's output.

A major, serious finding of this study is the gap between student practice and institutional guidance. While students pioneer the use of AI to overcome both academic and infrastructural challenges such as unreliable and costly internet access, they do so in the absence of clear policies or pedagogical direction from their institution. This lack of support exacerbates the risks they perceive and places the entire burden of ethical utilization of such tools on the students themselves.

Therefore, this study concludes that for AI integration to be truly beneficial in contexts like Libyan higher education, it must move from an informal, student-led practice to a formally supported component of academic literacy. Specifically, this necessitates urgent action from the ministry of higher education and its institutions to do the following:

1. Developing clear policies by establishing clear guidelines on the ethical use of AI in academic work.
2. Fostering AI literacy through integrating training for both students and instructors on the responsible, critical, and effective use of AI tools.
3. Addressing equity gaps by acknowledging such gaps and finding ways to mitigate the digital divide, as equitable access is a prerequisite for ethical implementation.

Finally, this research suggests that the future of AI in academic contexts lies not in prohibiting its use but in guiding its integration. By providing the necessary support,

institutions can help students convert their instrumental use of AI into a developmental one, ensuring these powerful tools enhance not only the quality of their writing but also the depth of their learning.

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