

Investigating AI-Assisted Writing Usage and Writing Confidence Among Postgraduate Students at the Libyan Academy, Janzour

Hajir Rajab^{1*}, Hanan Abdallateef²

¹Department of English Language, Faculty of Education, Al-Mergib University, Libya.

ORCID: 0009-0001-4698-4055

²Department of English Language, Faculty of Arts, Al-Mergib University, Libya.

ORCID: 0009-0006-7917-5146

استقصاء استخدام الكتابة المدعومة بالذكاء الاصطناعي والثقة في الكتابة لدى طلبة الدراسات العليا بالأكاديمية الليبية، جنزور

هاجر رجب^{1*}، حنان عبد اللطيف²

¹قسم اللغة الإنجليزية، كلية التربية، جامعة المرقب، ليبيا.

²قسم اللغة الإنجليزية، كلية الآداب، جامعة المرقب، ليبيا.

*Corresponding author: hajirahshradei9@gmail.com

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Abstract:

Artificial Intelligence (AI) has become an increasingly important tool in higher education, particularly in academic writing. This study aimed to investigate AI-assisted writing usage and writing confidence among postgraduate students at the Libyan Academy, Janzour. A quantitative descriptive cross-sectional design was employed. Data were collected from 59 postgraduate students using a structured questionnaire consisting of three sections: socio-demographic characteristics, AI-assisted writing usage, and writing confidence. Descriptive statistics, including frequencies, percentages, and mean scores, were used to analyze the data. The findings revealed that 96.6% of participants had previous experience using AI tools for writing, with ChatGPT being the most frequently used tool (64.4%). Participants generally reported positive perceptions of AI-assisted writing, particularly regarding writing organization, grammar improvement, and support during writing difficulties. The highest level of agreement was observed for the use of AI in organizing written work effectively. Regarding writing confidence, participants demonstrated moderate to high levels of confidence. The highest mean score was recorded for perceived improvement in writing skills over time ($M = 3.94$), while confidence in writing independently without assistance received the lowest mean score ($M = 3.44$). The study concludes that AI-assisted writing technologies are widely used and positively perceived among postgraduate students. These tools appear to support various aspects of the writing process and contribute to students' confidence in academic writing. The findings provide valuable insights for educators and higher education institutions seeking to integrate AI technologies effectively into academic writing practices.

Keywords: Artificial Intelligence, AI-Assisted Writing, Academic Writing, Writing Confidence, Postgraduate Students, Higher Education, ChatGPT.

الملخص:

أصبح الذكاء الاصطناعي من التقنيات الحديثة التي أحدثت تأثيرًا ملحوظًا في التعليم العالي، لا سيما في مجال الكتابة الأكاديمية. هدفت هذه الدراسة إلى استقصاء استخدام الكتابة المدعومة بالذكاء الاصطناعي ومستوى الثقة في الكتابة لدى طلبة الدراسات العليا بالأكاديمية الليبية – جنزور. اعتمدت الدراسة المنهج الوصفي الكمي بتصميم مقطعي (Cross-Sectional)، وشملت عينة مكونة من 59 طالبًا وطالبة من طلبة الدراسات العليا. جُمعت البيانات باستخدام استبانة مكونة من ثلاثة محاور: الخصائص الديموغرافية، واستخدام الكتابة المدعومة بالذكاء الاصطناعي، والثقة في الكتابة. وتم تحليل البيانات باستخدام التكرارات والنسب المئوية والمتوسطات الحسابية. أظهرت النتائج أن 96.6% من المشاركين لديهم خبرة سابقة في استخدام أدوات الذكاء الاصطناعي في الكتابة، وكان ChatGPT الأداة الأكثر استخدامًا بنسبة 64.4%. كما بينت النتائج وجود اتجاهات إيجابية نحو استخدام الذكاء الاصطناعي في الكتابة، خاصة في تنظيم الأفكار، وتحسين القواعد اللغوية، والمساعدة عند مواجهة صعوبات أثناء الكتابة. كذلك أظهرت النتائج أن المشاركين يتمتعون بمستوى متوسط إلى مرتفع من الثقة في الكتابة، حيث سجلت العبارة المتعلقة بالتحسن المستمر في مهارات الكتابة أعلى متوسط حسابي (3.94)، في حين سجلت الثقة في الكتابة بصورة مستقلة دون مساعدة أدنى متوسط (3.44) وخلصت الدراسة إلى أن أدوات الكتابة المدعومة بالذكاء الاصطناعي تُستخدم على نطاق واسع بين طلبة الدراسات العليا، وتُسهّم في دعم عملية الكتابة الأكاديمية وتعزيز الثقة في الكتابة. وتوصي الدراسة بتشجيع الاستخدام الفعال والمسؤول لهذه الأدوات في مؤسسات التعليم العالي.

الكلمات المفتاحية: الذكاء الاصطناعي، الكتابة المدعومة بالذكاء الاصطناعي، الكتابة الأكاديمية، الثقة في الكتابة، طلبة الدراسات العليا، التعليم العالي، شات جي بي تي.

Introduction:

Artificial Intelligence (AI) has emerged as one of the most transformative technological developments in higher education, significantly influencing teaching, learning, and academic writing practices. The rapid advancement of generative AI systems, particularly large language models such as ChatGPT and similar writing-support tools, has introduced new opportunities for students to improve the quality of their written work through idea generation, language refinement, grammar correction, and content organization [1, 2]. As a result, AI-assisted writing has become increasingly integrated into academic environments, attracting considerable attention from researchers, educators, and students worldwide.

Academic writing is a fundamental skill for postgraduate students because it enables them to communicate research findings, demonstrate critical thinking, and participate effectively in scholarly communities. However, many postgraduate students continue to experience difficulties related to academic writing, including organizing ideas, maintaining coherence, applying appropriate academic language, and meeting disciplinary expectations. These challenges often affect students' writing confidence, which refers to their belief in their ability to successfully perform writing tasks and produce high-quality academic texts [3]. Writing confidence plays a critical role in academic achievement, as students with higher confidence levels are generally more willing to engage in complex writing activities and persist when facing writing difficulties.

Recent developments in AI-assisted writing technologies have created new possibilities for addressing these challenges. Research has shown that generative AI tools can support learners during different stages of the writing process, including brainstorming, planning, drafting, revising, and editing [1, 4]. These technologies provide immediate feedback, personalized assistance, and suggestions that may help students improve both the efficiency and quality of their writing. Consequently, AI-assisted writing has been increasingly viewed as a valuable educational resource that supports academic performance and self-regulated learning behaviors [5]. Several recent studies have explored students' perceptions and experiences regarding the use of generative AI in academic writing. Findings indicate that many students perceive AI tools as useful resources for improving language accuracy, generating ideas, and overcoming writing-related difficulties [1, 6]. Furthermore, AI-assisted writing environments have been associated with enhanced engagement in writing activities and greater opportunities for individualized learning experiences [4, 7]. Such findings suggest that AI technologies are widely perceived as supportive tools that assist students throughout various stages of the academic writing process.

At the same time, concerns have been raised regarding the educational implications of excessive reliance on AI-generated content. Researchers have highlighted issues related to academic integrity, critical thinking, authorship, and the development of independent writing skills [6, 8]. Some scholars argue that while AI tools may improve productivity and reduce writing anxiety, their inappropriate use could potentially limit students' active engagement in the cognitive processes necessary for effective

academic writing [5]. Therefore, understanding postgraduate students' use of AI-assisted writing tools and their levels of writing confidence remains an important area of investigation.

Recent empirical evidence has demonstrated that students' use of AI in writing is associated with self-regulated learning strategies, motivation, and perceptions of the technology's usefulness [5]. Other studies have reported that AI-supported writing environments can contribute to improved writing quality, revision practices, and overall writing performance among postgraduate and higher education students [7, 9]. These findings highlight the growing role of AI-assisted writing tools in supporting academic writing activities across different educational contexts. Despite the growing body of research on generative AI in education, limited attention has been devoted to investigating AI-assisted writing usage and writing confidence among postgraduate students in developing countries, particularly within the Libyan higher education context. Most existing studies have been conducted in Western or Asian educational settings, leaving a gap in understanding how postgraduate students in Libya perceive and utilize AI-assisted writing tools and how they evaluate their own writing confidence. Therefore, the present study seeks to investigate AI-assisted writing usage and writing confidence among postgraduate students at the Libyan Academy, Janzour. The study aims to contribute to the growing literature on AI-supported learning by providing descriptive evidence regarding postgraduate students' use of AI-assisted writing tools and their levels of writing confidence. The findings may assist educators, policymakers, and higher education institutions in developing effective strategies for integrating AI technologies into postgraduate education while supporting students' academic writing development.

Research Objectives:

1. To investigate AI-assisted writing usage among postgraduate students at the Libyan Academy, Janzour.
2. To examine the level of writing confidence among postgraduate students at the Libyan Academy, Janzour.

Research Questions:

1. What is the level of AI-assisted writing usage among postgraduate students at the Libyan Academy, Janzour?
2. What is the level of writing confidence among postgraduate students at the Libyan Academy, Janzour?

Research Problem:

The increasing adoption of generative artificial intelligence tools in higher education has transformed the way students approach academic writing. AI-assisted writing technologies provide support in idea generation, language refinement, grammar correction, and text organization, making them increasingly popular among postgraduate students. Despite the growing use of these tools, limited research has examined AI-assisted writing usage and writing confidence among postgraduate students in the Libyan higher education context. Furthermore, there is insufficient evidence regarding how postgraduate students utilize AI writing tools and the extent to which they perceive themselves as confident academic writers. Therefore, this study addresses this gap by investigating AI-assisted writing usage and writing confidence among postgraduate students at the Libyan Academy, Janzour.

Significance of the Study:

This study is significant because it contributes to the growing body of knowledge on the educational applications of artificial intelligence in higher education. Understanding postgraduate students' use of AI-assisted writing tools and their levels of writing confidence may help educators and academic institutions develop more effective strategies for integrating AI technologies into academic writing instruction. In addition, the findings may provide valuable insights into how AI tools can support students in improving writing quality, enhancing learning experiences, and increasing confidence in academic writing tasks. Recent research has highlighted the positive role of generative AI in supporting writing productivity, language development, and academic performance among higher education students, emphasizing its potential as a valuable educational resource [10].

Material and methods:

Research Design:

This study employed a quantitative descriptive cross-sectional research design to investigate AI-assisted writing usage and writing confidence among postgraduate students at the Libyan Academy, Janzour. A descriptive approach was considered appropriate because the study aimed to describe participants' levels of AI-assisted writing usage and their writing confidence without examining causal relationships between variables. The cross-sectional design enabled data to be collected from participants at a single point in time, providing a snapshot of their experiences and perceptions regarding the use of artificial intelligence in writing.

Participants and Sampling:

The study involved 59 postgraduate students enrolled at the Libyan Academy, Janzour. Participants were selected using a convenience sampling technique based on their accessibility and willingness to participate in the study. The sample consisted of students from different academic levels and backgrounds.

Instrumentation:

Data were collected using a structured questionnaire consisting of three sections. The first section gathered socio-demographic information, including gender, age, academic level, previous use of AI tools for writing, most frequently used AI tools, and frequency of AI use for writing tasks. The second section measured AI-assisted writing usage through ten items (B1–B10). The third section assessed students' writing confidence through ten items (C1–C10).

All questionnaire items in Sections B and C were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Pilot Study:

Prior to the main data collection, a pilot study was conducted with seven postgraduate students from the Libyan Academy, Janzour. The purpose of the pilot study was to evaluate the clarity, relevance, and comprehensibility of the questionnaire items and to identify any potential issues related to wording or structure. Feedback obtained from the participants was used to make minor modifications and improve the overall quality of the questionnaire. The participants involved in the pilot study were not included in the final sample of the study.

Data Collection Procedure:

The questionnaire was distributed to postgraduate students at the Libyan Academy, Janzour. Participants were informed about the purpose of the study and were assured that their responses would remain confidential and would be used solely for research purposes. Participation was voluntary.

Data Analysis:

The collected data were analyzed using descriptive statistics. Frequencies and percentages were used to summarize participants' socio-demographic characteristics and response distributions. Means were calculated to determine the overall levels of AI-assisted writing usage and writing confidence. The findings were presented in tables and figures to facilitate interpretation and comparison of the results.

Results:

The internal consistency reliability of the questionnaire was assessed using Cronbach's Alpha. The instrument demonstrated good reliability, with an overall Cronbach's Alpha coefficient of 0.80, indicating that the questionnaire was suitable for data analysis. This section presents the findings of the study using descriptive statistics, including frequencies, percentages, and mean scores. The results are organized into tables and figures to summarize participants' demographic characteristics, AI-assisted writing usage, and writing confidence.

Table (1): Socio-Demographic Characteristics of the Participants (N = 59)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	50	84.7
	Male	9	15.3
Age	30–35 years	33	55.9
	26–30 years	13	22.0
	Above 35 years	9	15.3
Academic Level	21–25 years	4	6.8
	Master's	46	78.0
	Higher Diploma	12	20.3
Previous Use of AI Tools for Writing	PhD	1	1.7
	Yes	57	96.6
	No	2	3.4
Most Frequently Used AI Tool	ChatGPT	38	64.4
	Gemini	12	20.3
	Other	6	10.2
	Copilot	3	5.1
Frequency of AI Use for Writing Tasks	Sometimes	27	45.8
	Often	18	30.5
	Always	8	13.6
	Rarely	5	8.5
	Never	1	1.7

Table 1 shows that most participants were female (84.7%) and aged between 30 and 35 years (55.9%). The majority were Master's students (78.0%), while PhD students represented the smallest group (1.7%). Almost all respondents had previous experience using AI tools for writing (96.6%), with ChatGPT being the most frequently used tool (64.4%). Regarding usage frequency, most participants reported using AI tools sometimes (45.8%) or often (30.5%), indicating a generally high level of engagement with AI-assisted writing technologies.

Table (2): Frequency and Percentage Distribution of Participants' Responses to AI-Assisted Writing Usage (N = 59)

Item	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
B1: Regular AI Use	0%	3 (5.1%)	16 (27.1%)	36 (61.0%)	0%
B2: Idea Generation	2 (3.4%)	5 (8.5%)	13 (22.0%)	29 (49.2%)	10 (16.9%)
B3: Grammar Improvement	1 (1.7%)	3 (5.1%)	4 (6.8%)	42 (71.2%)	9 (15.3%)
B4: Writing Organization	0%	1 (1.7%)	4 (6.8%)	43 (72.9%)	11 (18.6%)
B5: Faster Task Completion	0%	8 (13.6%)	6 (10.2%)	40 (67.8%)	5 (8.5%)
B6: Writing Support	1 (1.7%)	0%	4 (6.8%)	38 (64.4%)	16 (27.1%)
B7: Vocabulary Development	1 (1.7%)	4 (6.8%)	10 (16.9%)	32 (54.2%)	12 (20.3%)
B8: Revision and Editing	0%	3 (5.1%)	6 (10.2%)	33 (55.9%)	0%
B9: Feedback Quality	0%	2 (3.4%)	10 (16.9%)	35 (59.3%)	0%
B10: AI Integration in Writing	0%	3 (5.1%)	11 (18.6%)	32 (54.2%)	0%

Table 2 shows that participants generally reported frequent use of AI tools in their writing activities, as reflected by the high percentages of Agree and Strongly Agree responses across all items. The highest level of agreement was observed for B4 (AI tools assist me in organizing my writing more effectively), where 72.9% of participants selected Agree and an additional 18.6% selected Strongly Agree. Similarly, B3 (AI tools help me improve grammar and sentence structure) received strong support, with 71.2% agreeing and 15.3% strongly agreeing. The highest percentage of Strongly Agree responses was recorded for B6 (I use AI tools when I face difficulties during writing) at 27.1%, indicating that many participants rely on AI as a problem-solving aid during the writing process. In contrast, B5 (AI tools help me complete writing tasks faster) showed the highest percentage of disagreement (13.6%), although the majority still expressed agreement (67.8%). Overall, the findings indicate positive attitudes toward AI-assisted writing, particularly regarding writing organization, grammar improvement, and support during writing difficulties, while perceptions regarding time-saving benefits were comparatively less strong.

Table (3): Frequency and Percentage Distribution of Participants' Responses to Students' Writing Confidence

Item	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)	Mean
C1: Essay Writing Confidence	0%	4 (7.5%)	11 (20.8%)	38 (71.7%)	0%	3.64
C2: Clear Expression of Ideas	0%	5 (10.2%)	6 (12.2%)	38 (77.6%)	0%	3.67
C3: Grammar Confidence	0%	4 (8.2%)	8 (16.3%)	37 (75.5%)	0%	3.67
C4: Paragraph Organization	0%	2 (3.7%)	15 (27.8%)	37 (68.5%)	0%	3.65
C5: Independent Writing	0%	7 (13.5%)	15 (28.8%)	30 (57.7%)	0%	3.44

C6: Vocabulary Confidence	0%	5 (8.5%)	18 (30.5%)	30 (50.8%)	6 (10.2%)	3.63
C7: Academic Writing Ability	0%	5 (8.5%)	10 (16.9%)	41 (69.5%)	3 (5.1%)	3.71
C8: Reduced Writing Anxiety	1 (1.7%)	7 (11.9%)	13 (22.0%)	35 (59.3%)	3 (5.1%)	3.54
C9: Writing Quality Satisfaction	0%	5 (9.4%)	15 (28.3%)	33 (62.3%)	0%	3.53
C10: Improvement in Writing Skills	0%	0%	2 (5.6%)	34 (94.4%)	0%	3.94

Table 3 indicates a generally positive level of writing confidence among participants. The highest mean score was recorded for C10 (Improvement in Writing Skills) (M = 3.94), followed by C7 (Academic Writing Ability) (M = 3.71). In contrast, the lowest mean score was observed for C5 (Independent Writing) (M = 3.44). The mean scores for C8 (Reduced Writing Anxiety) (M = 3.54) and C9 (Writing Quality Satisfaction) (M = 3.53) were also relatively close and lower than the remaining items. Overall, the findings suggest moderate to high levels of writing confidence among the participants.

Discussion:

The present study investigated AI-assisted writing usage and writing confidence among postgraduate students at the Libyan Academy, Janzour. The study was motivated by the increasing integration of artificial intelligence technologies into higher education and the growing recognition of their role in supporting academic writing. The findings provide important insights into postgraduate students' experiences with AI-assisted writing tools and their levels of writing confidence within the Libyan higher education context. The first objective of the study was to investigate AI-assisted writing usage among postgraduate students. The findings revealed widespread use of AI tools for academic writing, as nearly all participants reported previous experience using AI-assisted writing technologies. Furthermore, ChatGPT emerged as the most frequently used tool among participants. These findings are consistent with previous studies indicating that generative AI technologies have become increasingly integrated into students' academic writing practices because of their ability to support idea generation, language improvement, and writing development [1,3].

The results also demonstrated positive perceptions regarding the use of AI-assisted writing tools. The highest levels of agreement were observed for writing organization, grammar improvement, and support during writing difficulties. These findings suggest that participants view AI as a useful academic resource that assists them throughout different stages of the writing process. Previous research similarly reported that generative AI can facilitate brainstorming, drafting, revising, and editing while improving the quality and effectiveness of written work [1,3,7]. The strong agreement regarding grammar improvement is particularly consistent with studies showing that AI tools can provide immediate language support and corrective feedback, helping students produce more accurate and coherent texts [1,7]. Another important finding was the high level of agreement regarding the use of AI when facing writing difficulties. This result indicates that students frequently utilize AI technologies as supportive tools during challenging writing tasks. Similar findings have been reported in studies emphasizing the role of AI-assisted writing environments in promoting self-regulated learning, providing personalized assistance, and supporting students during complex academic writing activities [2,4]. Such support may facilitate greater engagement with writing tasks and more efficient completion of academic assignments.

The second objective of the study was to examine the level of writing confidence among postgraduate students. The findings revealed a generally positive level of writing confidence. The highest mean score was associated with improvement in writing skills over time, followed by confidence in completing academic writing tasks. These results indicate that participants generally perceive themselves as developing their writing abilities and becoming more capable of meeting academic writing requirements. Similar observations have been reported in previous studies that highlighted positive student perceptions of writing development and academic writing performance within AI-supported learning environments [4,8,9]. Despite these positive findings, confidence in writing independently without assistance received the lowest mean score among all writing confidence items. This result suggests that although participants generally reported positive levels of writing confidence, many still preferred some form of support when completing writing tasks. This observation is consistent with concerns raised in recent literature regarding reliance on external writing assistance. Researchers have noted that while AI technologies can provide valuable support during writing activities, students should also continue developing independent writing skills and critical thinking abilities [5,6,9]. The findings also contribute to addressing the research gap identified in the introduction. Previous studies

examining AI-assisted writing have largely been conducted in Western and Asian educational contexts [1,3,4]. In contrast, empirical evidence from Libya remains limited. Therefore, the current study contributes to the existing literature by providing descriptive evidence from postgraduate students in a Libyan higher education institution. The findings indicate that AI-assisted writing technologies are widely accepted and regularly utilized among Libyan postgraduate students, reflecting patterns reported in recent international research [1,4,6].

Overall, the findings successfully achieved the objectives of the study and answered the research questions. The first research question sought to determine the level of AI-assisted writing usage among postgraduate students, and the findings revealed widespread use and positive perceptions of AI-assisted writing tools. The second research question examined the level of writing confidence, and the results demonstrated moderate to high levels of confidence, particularly regarding writing improvement and academic writing performance. Collectively, these findings indicate that AI-assisted writing technologies are commonly used by postgraduate students and are perceived as valuable resources for supporting academic writing activities.

Study Limitations:

The findings of this study should be interpreted in light of its limitations, including the relatively small sample size, the use of self-reported data, and the cross-sectional design conducted within a single institution.

Conclusion:

This study investigated AI-assisted writing usage and writing confidence among postgraduate students at the Libyan Academy, Janzour. The findings revealed that AI-assisted writing technologies are widely used among postgraduate students and are perceived as beneficial tools for supporting academic writing activities. Participants reported positive perceptions regarding the role of AI in organizing ideas, improving grammar and sentence structure, enhancing vocabulary use, revising written work, and overcoming writing difficulties. The findings also demonstrated moderate to high levels of writing confidence among participants. Students expressed strong confidence in their continuing improvement as writers and in their ability to complete academic writing tasks successfully. However, confidence in writing independently without external assistance was comparatively lower, suggesting that many students still rely on supportive resources during the writing process. The study successfully achieved its objectives and answered its research questions by providing a comprehensive description of AI-assisted writing usage and writing confidence among postgraduate students. Furthermore, the findings contribute to the growing body of literature on artificial intelligence in higher education and help address the limited availability of research within the Libyan context.

Based on these findings, higher education institutions should encourage the responsible and effective use of AI-assisted writing technologies while simultaneously promoting independent writing skills, critical thinking, and academic integrity. Providing training programs on the educational use of AI tools may help postgraduate students maximize the benefits of these technologies and further enhance their academic writing development and confidence.

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