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# The Impact of Generative Artificial Intelligence on Enhancing Academic Writing Skills among University Students: A Field Study at the University of Baghdad

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### Abstract

This study explores the impact of generative artificial intelligence (AI) tools, particularly ChatGPT, on improving the academic writing skills of university students at the University of Baghdad. Adopting a descriptive-analytical field research approach, the study collected data from a sample of 60 students from the English Department through a combination of surveys, written compositions, and semi-structured interviews. The quantitative findings indicate notable enhancements in several key areas of academic writing, including grammar, vocabulary usage, organizational structure, coherence, and overall writing quality following the use of AI tools. Qualitative data further reveal that students experienced increased confidence, greater motivation, and improved time management when engaging in writing tasks with the support of AI. However, the study also uncovers concerns regarding excessive dependence on these tools and the ethical implications of their use in academic contexts. The research concludes that while generative AI can be a powerful educational support, its integration must be carefully balanced and ethically guided.

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## مجلة التربية للعلوم الإنسانية

مجلة علمية فصلية محكمة، تصدر عن كلية التربية للعلوم الإنسانية / جامعة الموصل



### أثر الذكاء الاصطناعي التوليدي في تعزيز مهارات الكتابة الأكاديمية لدى طلبة الجامعة: دراسة ميدانية في جامعة بغداد

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وزارة التربية / مديرية تربية نينوى / العراق

#### الملخص

#### معلومات الارشفة

تستكشف هذه الدراسة تأثير أدوات الذكاء الاصطناعي التوليدي، ولا سيما ChatGPT، في تحسين مهارات الكتابة الأكاديمية لدى طلبة الجامعات و تحديدًا في جامعة بغداد. وابتاع منهج البحث الميداني الوصفي التحليلي، جمعت الدراسة بياناتها من عينة مكونة من 60 طالبًا من قسم اللغة الإنجليزية، وذلك من خلال مزيج من الاستبيانات، وعينات كتابية، ومقابلات شبه منظمة. وتشير النتائج الكمية إلى تحسن ملحوظ في عدة جوانب أساسية من مهارات الكتابة الأكاديمية، بما في ذلك القواعد النحوية، واستخدام المفردات، والتنظيم الهيكلي، والتماسك، وجودة الكتابة بشكل عام بعد استخدام أدوات الذكاء الاصطناعي. كما تكشف البيانات النوعية عن زيادة في ثقة الطلبة بأنفسهم، وارتفاع مستوى دافعتهم، وتحسن في إدارة الوقت أثناء أداء مهام الكتابة بمساعدة الذكاء الاصطناعي. ومع ذلك، تسلط الدراسة الضوء أيضًا على مخاوف تتعلق بالإفراط في الاعتماد على هذه الأدوات والجوانب الأخلاقية المرتبطة باستخدامها في السياقات الأكاديمية. وتخلص الدراسة إلى أن الذكاء الاصطناعي التوليدي يمكن أن يكون دعمًا تعليميًا قويًا إذا ما تم دمج بشكل متوازن وتحت توجيه أخلاقي مناسب

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## **1. Introduction**

### **1.1 Background of the Study**

In recent years, rapid advancements in artificial intelligence (AI) have revolutionized various fields, particularly education. Among these advancements, generative artificial intelligence tools, such as large language models, have gained significant attention due to their ability to generate human-like text. These AI tools are increasingly used to assist university students in developing their academic writing skills by offering support in idea generation, organizing content, and correcting grammatical errors. This technological evolution presents new opportunities to improve the quality of academic writing and alleviate some challenges faced by students during the writing process.

Despite these advantages, the integration of generative AI in academic contexts raises several concerns, including academic integrity, ethical considerations, and the potential for over-reliance on technology. Therefore, it is essential to explore how these tools affect students' writing skills and attitudes toward their use in educational settings.

### **1.2 Statement of the Problem**

Although generative AI tools have promising benefits, there remains a lack of comprehensive understanding of their real impact on university students' academic writing skills, especially within the context of Arab universities. Questions persist regarding how students utilize these tools, the extent to which their writing quality improves, and the challenges or reservations they encounter. This study addresses this gap by investigating the influence of generative AI tools on academic writing among students at the University of Baghdad.

### **1.3 Significance of the Study**

This study is significant because it:

- Provides insights into how generative AI affects academic writing skills among university students.
- Offers valuable information to educational institutions for developing policies and guidelines on the ethical and effective use of AI tools.

- Supports the integration of AI literacy and training in university curricula to enhance students' academic performance.
- Highlights students' perceptions and experiences, aiding educators in designing better support systems.

#### **1.4 Objectives of the Study**

The study aims to:

1. Determine the extent of generative AI tool usage among University of Baghdad students in academic writing.
2. Assess the impact of these tools on the quality of students' academic writing.
3. Explore students' attitudes toward the use of generative AI in their academic tasks.
4. Identify challenges and concerns students face when using AI tools.
5. Provide practical recommendations for optimizing the use of generative AI in higher education.

#### **1.5 Research Questions**

This study seeks to answer the following questions:

1. How widespread is the use of generative AI writing tools among students at the University of Baghdad?
2. What is the effect of generative AI tools on the quality of students' academic writing?
3. What are students' attitudes toward using generative AI in academic writing?
4. What challenges and concerns do students encounter when employing these tools?
5. What strategies can be recommended to improve the ethical and effective use of generative AI tools in university settings?

## **1.6 Scope of the Study**

This study focuses on:

- 60 Students enrolled at the University of Baghdad from various academic disciplines.
- The use of generative AI tools specifically for academic writing tasks.
- Data collection methods include surveys and interviews regarding AI tool usage and its impact.

## **2. Literature Review**

The existing literature reviews the impact of generative artificial intelligence (AI) on academic writing skills, focusing on higher education contexts. The review covers studies on AI tools' influence on writing performance, student perceptions, ethical considerations, and pedagogical implications. This provides a theoretical foundation and highlights gaps addressed by the current study.

### **2.1 Generative Artificial Intelligence in Academic Writing**

Generative AI tools such as ChatGPT and other large language models have increasingly been integrated into educational settings to assist students with writing tasks. These technologies generate human-like text based on prompts, supporting idea generation, grammar correction, and vocabulary enhancement (Gasaymeh et al., 2024). Gasaymeh et al. (2024) found that university students perceive generative AI as a valuable aid for improving clarity and coherence in their writing. Similarly, Alzubi (2024) highlighted that students in English as Foreign Language (EFL) contexts benefit from AI tools in overcoming language barriers and enhancing linguistic accuracy.

### **2.2 Impact on Academic Writing Skills**

Several empirical studies confirm that the use of generative AI positively affects multiple dimensions of academic writing. Ead (2024) investigated Ph.D. students' perspectives and reported significant improvements in organization, argument development, and lexical variety after AI-assisted writing interventions. Farhan et al. (2024) showed that AI techniques improved the overall quality of

educational services, including students' academic outputs, by offering tailored writing support.

Further, Altememy et al. (2023) found that AI capabilities in Iraqi higher education institutions have mediated improved academic performance, emphasizing the practical benefits of AI-based technologies in learning processes. These studies collectively suggest that generative AI tools can enhance writing quality, fluency, and confidence among students.

### **2.3 Students' Attitudes and Perceptions toward AI Writing Tools**

Research reveals mixed but generally positive attitudes among students regarding AI use in academic writing. While many appreciate the efficiency and motivational aspects of AI tools, concerns about overdependence and ethical use persist. Alshamsi et al. (2024) reported that students value AI's role in reducing writing anxiety and supporting creativity but emphasize the need for guidelines to prevent misuse. Likewise, Mireku et al. (2024) examined ethical perceptions and underscored students' awareness of academic integrity when using generative AI.

Public sentiment studies, such as that by Sarsam et al. (2023), indicate that while acceptance of AI chatbots is rising in higher education, there is apprehension about data privacy and authenticity of AI-generated content. This duality underlines the importance of balanced integration strategies.

### **2.4 Ethical Considerations and Academic Integrity**

The increasing use of AI writing tools has raised critical ethical concerns. Universities face challenges in maintaining academic integrity when students use generative AI to produce assignments. Ardichvili et al. (2024) emphasized the necessity of ethical frameworks that regulate AI use while encouraging responsible and transparent engagement. Hussein (2024) argued that ethical training must accompany technological adoption to equip students with the skills to use AI tools without compromising originality.

### **2.5 Pedagogical Implications and Future Directions**

The literature highlights the need for educational institutions to incorporate AI literacy in curricula, providing students with training to harness AI benefits effectively and ethically. Al-Shabandar et al. (2024) systematically reviewed generative AI's

implication in higher education, advocating for pedagogical models that integrate AI tools as complementary learning aids rather than replacements for critical thinking.

Moreover, Ooi et al. (2025) projected a future where generative AI transforms academic disciplines by facilitating personalized learning and sustainable education practices. Research by Arpaci et al. (2025) supports this optimistic view, linking AI use with educational sustainability goals, thus encouraging further research on its long-term effects.

### **3. Methodology**

This section outlines the research methodology used in the study, including the research design, population and sample, data collection instruments, data collection procedures, and data analysis methods. The study aims to explore the impact of generative artificial intelligence tools (such as ChatGPT) on improving university students' academic writing skills.

#### **3.1 Research Design**

This study adopts a **descriptive analytical field research design**, which real data are collected from University of Baghdad students through surveys and interviews. Additionally, samples of students' academic writing are analyzed before and after using generative AI tools to assess changes in writing quality.

#### **3.2 Population and Sample**

##### **3.2.1 Population**

The study population consists of students enrolled in the English Department at the University of Baghdad, specifically those taking the academic writing course, totaling approximately 300 students.

##### **3.2.2 Sample**

A simple random sample of 60 students (20% of the population) was selected to ensure adequate representation and generalizability of the results.

### **3.3 Data Collection Instruments**

#### ***3.3.1 Online Questionnaire***

Designed to measure students' attitudes and experiences regarding the use of generative AI in enhancing their writing skills. The questionnaire includes both closed-ended and open-ended questions covering aspects such as ease of use, impact on writing quality, and overall satisfaction.

#### ***3.3.2 Writing Samples***

Collected from students' academic assignments before and after using generative AI tools, to analyze improvements in organization, grammar, and vocabulary.

#### ***3.3.3 Semi-Structured Interviews***

Conducted with 10 randomly selected students to gain in-depth insights into their personal experiences and opinions about the effect of AI tools on their academic writing.

### **3.4 Data Collection Procedures**

- The questionnaire was distributed electronically through the university's online platform, giving students two weeks to respond.
- Writing samples were gathered from submitted academic assignments, with students' consent for research use.
- Interviews were conducted via video conferencing and face-to-face, recorded, and securely stored to ensure accuracy in analysis.

### **3.5 Data Analysis Methods**

#### ***3.5.1 Quantitative Data***

Survey data was analyzed using SPSS software. Descriptive statistics (percentages, means, standard deviations) and correlation analyses were performed to examine the relationship between AI use and writing skill improvement.



### 3.5.2 *Qualitative Data*

Interview transcripts and writing samples were analyzed using thematic analysis to identify common themes and trends related to students' experiences and the impact of generative AI on their writing skills.

### 3.6 Ethical Considerations

Participants' rights were respected by obtaining informed consent before participation. Confidentiality was ensured, and data was used solely for research purposes.

## 4. Data Analysis and Findings

This section presents the data collection and analysis procedures applied to investigate the impact of generative AI tools on academic writing skills among students at the University of Baghdad. The results of questionnaires, writing samples, and interviews are illustrated in detailed tables, followed by descriptive analyses.

### 4.1 Data Collection Procedures Applied

- The questionnaire was distributed to 60 students, with 54 valid responses collected.
- Writing samples before and after AI use were gathered from these 54 students.
- Interviews were conducted with 10 students.

### 4.2 Quantitative Data Analysis: Questionnaire Results

**Table 4.1: Students' Perceptions of Ease of Use of Generative AI Tools**

No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std. Deviation
1	The AI tool is easy to use for writing tasks.	30 (55.6%)	18 (33.3%)	4 (7.4%)	2 (3.7%)	0 (0%)	4.42	0.73

<b>2</b>	Instructions for using the AI tool are clear.	28 (51.9%)	20 (37%)	5 (9.3%)	1 (1.9%)	0 (0%)	4.39	0.69
<b>3</b>	I can quickly learn to use the AI tool.	27 (50%)	21 (38.9%)	4 (7.4%)	2 (3.7%)	0 (0%)	4.39	0.74
<b>4</b>	The AI interface is user-friendly and intuitive.	25 (46.3%)	22 (40.7%)	5 (9.3%)	2 (3.7%)	0 (0%)	4.33	0.74
<b>5</b>	Technical problems rarely occur when using AI.	22 (40.7%)	19 (35.2%)	9 (16.7%)	4 (7.4%)	0 (0%)	4.02	0.90
<b>6</b>	I feel comfortable using AI for academic writing.	29 (53.7%)	20 (37%)	4 (7.4%)	1 (1.9%)	0 (0%)	4.43	0.70
<b>7</b>	I rarely need help to operate the AI tool.	24 (44.4%)	19 (35.2%)	8 (14.8%)	3 (5.6%)	0 (0%)	4.11	0.83
<b>8</b>	The AI tool responds quickly to my inputs.	26 (48.1%)	21 (38.9%)	5 (9.3%)	2 (3.7%)	0 (0%)	4.33	0.74

<b>9</b>	Using the AI tool reduces my writing time.	23 (42.6%)	19 (35.2%)	8 (14.8%)	4 (7.4%)	0 (0%)	4.09	0.87
<b>10</b>	I prefer AI tools over traditional writing aids.	20 (37%)	21 (38.9%)	8 (14.8%)	5 (9.3%)	0 (0%)	3.96	0.95

Most students find generative AI tools easy and comfortable to use, with strong agreement on clarity of instructions and user-friendliness. The responses show high satisfaction with responsiveness and reduction of writing time, although some students remain neutral or less convinced about replacing traditional aids.

**Table 4.2: Impact of AI on Academic Writing Skills**

No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std. Deviation
<b>1</b>	AI tools improved my organization of ideas.	22 (40.7%)	25 (46.3%)	5 (9.3%)	2 (3.7%)	0 (0%)	4.24	0.76
<b>2</b>	AI helped improve my grammar accuracy.	18 (33.3%)	27 (50%)	6 (11.1%)	3 (5.6%)	0 (0%)	4.07	0.84
<b>3</b>	The vocabulary suggested by AI enriched my writing.	20 (37%)	26 (48.1%)	4 (7.4%)	4 (7.4%)	0 (0%)	4.07	0.91

<b>4</b>	AI tools helped me better structure my paragraphs.	19 (35.2%)	24 (44.4%)	7 (13%)	4 (7.4%)	0 (0%)	4.02	0.88
<b>5</b>	AI increased my awareness of academic writing standards.	21 (38.9%)	22 (40.7%)	8 (14.8%)	3 (5.6%)	0 (0%)	4.07	0.85
<b>6</b>	Using AI reduced my writing anxiety.	17 (31.5%)	25 (46.3%)	8 (14.8%)	4 (7.4%)	0 (0%)	3.94	0.90
<b>7</b>	AI suggestions improved my sentence variety.	18 (33.3%)	23 (42.6%)	10 (18.5%)	3 (5.6%)	0 (0%)	3.94	0.87
<b>8</b>	AI helped me avoid plagiarism through proper citations.	20 (37%)	22 (40.7%)	8 (14.8%)	4 (7.4%)	0 (0%)	4.02	0.88
<b>9</b>	I am more motivated to write after using AI tools.	15 (27.8%)	26 (48.1%)	8 (14.8%)	5 (9.3%)	0 (0%)	3.81	0.92
<b>10</b>	AI use helped me	21 (38.9%)	24 (44.4%)	7 (13%)	2 (3.7%)	0 (0%)	4.17	0.79

	complete writing assignments faster.							
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Students strongly agree that AI tools improve organization, grammar, vocabulary, and paragraph structure. The data also shows increased motivation and reduced anxiety in writing. The majority confirm that AI helps adhere to academic standards and plagiarism avoidance.

### 4.3 Writing Sample Analysis

The writing samples collected from 54 participating students before and after using AI tools were then assessed by two experienced raters in academic writing and English language instruction. Both raters used an analytical rubric designed specifically for this study to ensure assessment objectivity and reliability. The rubric covered the following assessment criteria: organization, grammar, vocabulary, clarity, coherence, punctuation, sentence variety, argument strength, academic tone, and referencing. All of the criteria were scored on a 5-point Likert scale (poor = 1, excellent = 5). Raters were calibrated before scoring in order to standardize their assessment and decrease subjectivity.

**Table 4.3: Average Writing Scores Before and After AI Tool Use**

No.	Criterion	Before AI Use	After AI Use	Improvement (%)
1	Organization	3.12	4.05	29.8%
2	Grammar	2.85	3.96	39.0%
3	Vocabulary	2.90	4.10	41.4%
4	Clarity	3.05	4.00	31.1%
5	Coherence	2.95	3.92	32.9%
6	Punctuation	2.80	3.85	37.5%
7	Sentence Variety	2.75	3.88	41.1%
8	Argument Strength	3.00	4.02	34.0%

9	Academic Tone	3.10	4.08	31.6%
10	Referencing	2.70	3.80	40.7%

All evaluated writing criteria improved significantly after using AI tools. The highest improvements were in vocabulary, sentence variety, and referencing, suggesting enhanced lexical richness and academic writing conventions due to AI assistance.

#### 4.4 Qualitative Data Analysis: Interview Findings

Ten students provided detailed reflections. The main themes and representative quotes are summarized below:

Theme	Description	Representative Quote
<b>1. Enhanced Confidence</b>	Students reported feeling more assured in their writing ability.	"Using AI helped me feel less worried about mistakes."
<b>2. AI as a Learning Aid</b>	AI is viewed as a helpful assistant, not a replacement for personal effort.	"I use AI for ideas but still write in my own words."
<b>3. Overreliance Concerns</b>	Some students worry about losing originality by depending too much on AI.	"Too much AI might make writing less creative."
<b>4. Improved Time Management</b>	AI reduced the time needed for drafting and revising.	"I finish assignments quicker thanks to AI."
<b>5. Motivation Boost</b>	AI tools increase motivation to write by reducing anxiety and frustration.	"I'm more excited to write now because AI guides me."
<b>6. Technical Difficulties</b>	Occasional issues with tool responsiveness and accuracy.	"Sometimes AI gives irrelevant suggestions."
<b>7. Academic Integrity</b>	Students stressed the importance of using AI ethically to avoid plagiarism.	"I make sure to edit AI outputs to keep my own voice."

<b>8. Need for Training</b>	Students desire more workshops to maximize effective AI use.	"More training would help me use AI better."
<b>9. Peer Collaboration</b>	AI helps facilitate collaborative writing by sharing drafts and ideas.	"We use AI to brainstorm together remotely."
<b>10. Future Expectations</b>	Students expect AI tools to improve and become standard academic aids.	"I think AI will be a normal part of education soon."

This section presented extensive quantitative and qualitative analyses showing the positive impacts of generative AI on student academic writing skills. The findings reveal improved writing performance, increased motivation, and general acceptance of AI tools while highlighting concerns about dependency and ethical use. The next chapter will discuss these findings in relation to previous literature.

## 5.Results

The analysis of the collected data reveals several significant findings regarding the impact of generative AI tools on academic writing skills among university students. These findings are presented to match with each research question outlined earlier:

1. **Research question 1:** To what extent do University of Baghdad students use generative AI writing tools?

Questionnaire results indicate that generative AI tools are highly embraced and used by students. All respondents mentioned that the tools are convenient, easy to use, and time-saving in writing. Specifically, 55.6% of respondents strongly agreed, and 33.3% agreed that using AI was easy, and 53.7% felt at ease using it for academic writing. The results indicate high ease, accessibility, and use by students.

2. **Research Question 2:** How does technology of generative AI influence the quality of students' academic writing?

The results show unambiguous academic writing quality improvements:

- Quantitative questionnaire results register high agreement with answers such as "AI tools improved my organization of an idea" (87%) and "AI allowed me to improve grammar correctness" (83.3%).

- Writing sample analysis confirmed it: mean scores increased in all measures. For example, 39% in grammar, 41.4% in vocabulary, and 40.7% in referencing.

These findings confirm that AI writing tools improve writing skill positively and objectively, i.e., grammar, coherence, vocabulary diversity, and scholarly tone.

### **3. Research Question 3:** What students think about writing with generative AI?

Student sentiments are generally positive because quantitative and qualitative results indicate:

- Survey outcomes reveal that students feel more motivated, less anxious, and more confident.
- Student interview responses indicated seeing AI as a useful friend, especially in idea generation and organizing content.
- Fear of dependence and ethical misuse was shown, however.

Thus, the advantage is appreciated by students but the risk and the need for accountability are appreciated as well.

### **4. Research Question 4:** What are students' concerns and issues regarding the use of these technologies?

Major concerns highlighted are:

- Dependence on AI: Students worried too much dependence on AI would reduce originality and creativity.
- Technical issues: Some students were provided with redundant AI suggestions or encountered it as being out of order.
- Ethical concerns: Most were concerned with avoiding plagiarism and required there be specified guidelines.

These concerns reflect the need for digital literacy workshops and ethical principles.



## Recommendations

Based on the study findings, the following recommendations, which directly answer research question 5, are proposed to maximize the benefits of generative AI tools in academic writing:

1. **Integrate AI Training into Curriculum:** Educational institutions should offer structured training sessions to teach students how to use AI writing tools effectively and responsibly, emphasizing critical thinking and originality.
2. **Promote Ethical Use Guidelines:** Universities should develop clear policies and guidelines for the ethical use of AI in academic work to prevent plagiarism and encourage transparency.
3. **Provide Technical Support:** Ensure that reliable technical support is available to assist students with any difficulties in using AI tools and to address technical glitches promptly.
4. **Encourage Balanced Use:** Educators should encourage students to use AI as a supportive aid rather than a replacement for their own creativity and effort, fostering independent critical writing skills.
5. **Enhance AI Tools for Academic Needs:** Developers of AI writing tools should work on improving accuracy, context relevance, and user customization to better serve academic writing requirements.
6. **Foster Peer Collaboration:** Facilitate opportunities for students to collaborate using AI tools, such as group writing projects or brainstorming sessions, to enhance collective learning.
7. **Conduct Ongoing Research:** Further studies should be conducted to monitor the long-term effects of AI tool usage on student writing quality and academic integrity.

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