

The Correlation Between ChatGPT Usage and University Students' Writing Proficiency

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Abstract

Technological advancements have made academic tasks more efficient for university students. One such innovation is ChatGPT, an AI based tool that helps generate text, suggest sentences, and correct grammar. However, the use of ChatGPT also raises considerations regarding its correlation with students' writing proficiency. This study aims to find out the correlation between the usage of ChatGPT and students' university writing proficiency in English. The study used a quantitative approach with a correlational design. A total of 25 students from the English Education study program who had used ChatGPT in academic writing tasks participated in this research. Data were collected through questionnaires and writing scores. The questionnaire explored how often students used ChatGPT, for what purposes, and what benefits they experienced. The writing scores were taken from the Essay Writing course, reflecting students' academic essay writing proficiency as assessed by the lecturer. The result of this study shows that there is no significant correlation between the frequency of ChatGPT usage and students' writing proficiency. The Spearman correlation coefficient was $r = 0.017$ with a significance level of $p = 0.936$ ($p > 0.05$), indicating a very weak and statistically insignificant correlation. This suggests that using ChatGPT more often does not necessarily improve writing performance. ChatGPT may support the writing process, but its impact depends on how it is used.

Keywords: ChatGPT, Artificial Intelligence, writing skills, students' university, academic

INTRODUCTION

In the current digital era, the development of information technology has had a significant impact on various aspects of life, one of which is in the field of education. One of the technological developments that has garnered significant attention in the field of education today is artificial intelligence, commonly referred to as AI. Currently, AI is increasingly being utilized in the education sector, especially among students. Students, as a group actively engaged in learning and research activities, greatly need technological assistance to complete their tasks efficiently and quickly. According to Ilfi

& Manaf (2024), artificial intelligence is a system that can adapt, make decisions, think, and learn like humans. This makes AI a technology capable of providing instant and flexible solutions in facing various academic challenges.

One type of artificial intelligence that is widely used among students today is ChatGPT. ChatGPT is designed to respond to text input naturally and is capable of producing coherent writing, correcting sentences, and providing writing suggestions. These features make ChatGPT a tool frequently utilized in writing activities, especially in English. Data from a survey by Wang et al. (2024) shows that students in the United States have used AI, including ChatGPT, to help complete their academic tasks. This indicates a growing trend in AI usage among students. Although it appears to be helpful, the effectiveness of its use is still questioned because not all students use it in a reflective and responsible manner. Therefore, the use of ChatGPT in an academic context is still a subject of debate. George et al. (2024) emphasize that the use of AI, such as ChatGPT, without critical understanding can hinder the development of independent thinking skills and create dependency.

The ability to write independently is an essential skill needed by students in the era of globalization, especially for students in the English Education study program. In the higher education environment, this ability is very important because almost every field of study requires students to express ideas, concepts, or analytical results in the form of academic writing. According to Arochman et al. (2024) writing is a complex activity that requires simultaneous control over several aspects of language, such as grammar, vocabulary, writing mechanics, and content organization. In an academic context, students are expected to be able to write well-structured essays, reports, papers, and even scientific articles using appropriate language. In addition to being part of academic assessment, good writing skills also reflect students' understanding of the material being studied as well as their ability to think critically and logically. Moreover, writing skills in English also serve as an important asset for students to compete in the global arena, whether in further studies, research activities, or the job market.

Although writing skills are very important, in reality, not many students are able to write well and correctly. Many of them face various challenges during the writing process, such as difficulty in organizing ideas logically, limited English vocabulary, and

improper use of grammar. Some of them also feel less confident when writing because they do not know how to start or develop a paragraph with the correct structure. Additionally, time pressure and the accumulation of assignments often cause students to write hastily without making revisions. These challenges make many students feel overwhelmed and in need of assistance to complete their writing tasks. As noted by Zhan et al. (2024), writing is often considered the most difficult skill for language learners to master because it requires the simultaneous use of multiple cognitive and linguistic abilities.

Due to these various challenges, students have started to utilize ChatGPT to assist them in completing writing assignments. ChatGPT is a tool that can provide sentence references and grammar corrections. Not only that, ChatGPT also helps students in developing ideas before they start writing. According to Aulia & Azfira (2025) ChatGPT can serve as a learning partner that assists students in the process of critical thinking and writing more systematically. However, the way students use it greatly influences how effectively it is utilized. ChatGPT can reduce students' cognitive engagement in the writing process if used passively or merely for copying (Nouara & Dehbia, 2023). Therefore, it is important to understand how technology can be used as a learning aid rather than replacing the learning process.

Although there has been growing interest in the use of ChatGPT in writing contexts, most existing studies tend to be qualitative or conceptual in nature, focusing on perceptions, ethical concerns, or potential uses. Only a limited number of empirical studies have quantitatively examined the actual relationship between the frequency of ChatGPT use and students' measurable writing performance. Although there are several studies that use a quantitative approach, but most of them use experimental designs to see the impact of using ChatGPT on writing skills through pre-tests and post-tests. These experimental studies involve researchers in the use of ChatGPT, thus less representing the natural use of ChatGPT by students in their daily academic life. Therefore, a correlational approach is important to understand the actual relationship between the habit of using ChatGPT and students' writing abilities. This gap in research highlights the need for further investigation to provide objective evidence on whether the use of ChatGPT truly correlates with students' academic writing outcomes.

This study aims to examine the correlation between the use of ChatGPT and students' writing abilities. This study uses a quantitative approach to measure how often students use ChatGPT and their writing abilities. Baidoo-Anu & Ansah (2023) state that it is important for educational institutions to understand the potential and limitations of AI usage in learning in order to optimize its benefits. Therefore, the results of this research are expected to provide a clearer picture of the role of ChatGPT in students' writing abilities and to serve as input in the development of relevant learning strategies in the digital era. Based on the background, the formulation of the problem in this research is as follows:

1. Is there a significant correlation between the frequency of ChatGPT usage and students' writing proficiency?
2. What factors might influence the correlation between the use of ChatGPT and students' writing proficiency?

METHODS

Research Design

This study uses a correlational quantitative research design, which aims to determine whether there is a correlation between two variables. In this study, there are two variables being examined, namely the students' writing ability as the dependent variable and the frequency of ChatGPT usage in writing activities as the independent variable. This research will examine the extent of the correlation between the two variables based on the data that has been collected.

Population and sample

The population in this study consists of all students in the English Education Study Program at Universitas Islam Kadiri. This population was chosen because the students in this study program have an academic background directly related to English writing skills. The sample in this study consists of second semester students who are currently taking the Essay Writing course. The sample was purposively selected because only students enrolled in this course are relevant to the research objectives. The sample size in this study is 25 students. The purposive sampling selection aims to ensure that the data collected truly aligns with the research context,

namely students who have used ChatGPT to complete academic writing tasks and possess writing ability scores that can be directly analyzed.

Instruments

This research uses two types of instruments, namely questionnaires and student writing score data. These instruments are used to measure the correlation between the use of ChatGPT and students' writing proficiency in an academic context. The initial questionnaire consists of 20 statements formulated based on indicators of technology use in writing, specifically the use of ChatGPT. To ensure the content validity of the instrument, content validation was conducted by expert lecturers from Universitas Islam Kadiri.

After undergoing expert validation, the questionnaire was then tested for validity using the IBM SPSS Statistics 25 program. The results of the validity test showed that only 17 statements were declared valid, while the other 3 statements did not meet the criteria. Therefore, the final questionnaire used in this study consists of 17 valid statements. The 17 valid statements were then distributed online via Google Forms using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The second instrument is the students' writing scores, obtained from the Essay Writing course grades. These scores are considered to represent the students' ability to write academic essays. The scores are given directly by the supervising lecturer based on the academic evaluation criteria applicable in that class.

Data Collecting Technique

Data collection in this study was conducted through several stages. First, the researcher prepared an initial questionnaire consisting of 20 statements to measure the frequency and intensity of ChatGPT usage by students in academic writing activities. This questionnaire then underwent a content validation process by expert lecturers from the Islamic University of Kadiri to ensure the alignment between the statements and the indicators to be measured. After that, the questionnaire was distributed for a trial. After the trial data was collected, the questionnaire was tested for validity using the IBM SPSS Statistics 25 program. From the validity test results, 17

statements were declared valid and used in the final questionnaire, while the other 3 statements were removed because they did not meet the validity criteria.

After the questionnaire is deemed valid, the next step is the online distribution of the questionnaire through Google Form. The questionnaire is distributed to second-semester students who are taking the Essay Writing course. They are asked to fill out the questionnaire based on their personal experiences using ChatGPT to complete writing assignments. The collection is conducted in a single submission, and all incoming data is kept confidential.

In addition to the questionnaire, another data collected in this research is the Essay Writing course grades, which are given by the course instructor. This grade is used as an indicator of students' writing ability, as it reflects their skills in composing academic essays based on the lecturer's assessment of aspects such as grammar, structure, vocabulary, and coherence. This grade data was obtained with the professor's permission and is used solely for research purposes.

Data Analysis Technique

This research uses the IBM SPSS Statistics 25 program to conduct descriptive and correlational statistical analysis. The data analyzed are the scores from the ChatGPT usage questionnaire and the students' writing grades obtained from the Essay Writing course. Descriptive analysis was conducted to see an overview of the data, such as minimum, maximum, mean, standard deviation, and variance of each variable.

Before conducting correlational analysis, the researcher first performed a data normality test using the Saphiro Wilk test. The test results show that the significance value is 0.000. Since this value is less than 0.05, it can be concluded that the data is not normally distributed. Therefore, the researcher used the Spearman Rank test as a correlation analysis technique.

Research Hypothesis

The hypotheses tested in this study were as follows:

1. Null hypothesis (H_0): There is no significant correlation between the frequency of ChatGPT usage and students' writing proficiency.

2. Alternative hypothesis (H_a): There is a significant correlation between the frequency of ChatGPT usage and students' writing proficiency.

RESULTS & DISCUSSION

Findings

Before the instrument is distributed, each item on the instrument is tested for validity using SPSS. Here are the calculations.

Tab. 1 Validity Test

Item	Validity Score	Sig.
1	.629	.003
2	.587	.006
3	-.126	.597
4	.622	.003
5	.646	.002
6	.572	.008
7	.498	.025
8	.508	.002
9	.818	.000
10	.680	.001
11	.777	.000
12	.354	.125
13	.753	.000
14	.701	.001
15	.898	.000
16	.574	.008
17	.080	.739
18	.659	.002
19	.704	.001
20	.763	.000

Based on the validity test calculations, there are 3 items considered invalid, namely items number 3, 12, and 17. These items are deemed invalid because their significance values are greater than 0.05. Meanwhile, the other 17 data items are considered valid because they have significance values less than 0.05. Therefore, the 3 instruments deemed invalid will be removed, and only the 17 valid items will be used for data collection.

A questionnaire consisting of 17 statements using a Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree) was distributed via Google Form as part of the data collection process. This instrument was developed to support the research titled “The Correlation between ChatGPT Usage and University Students’ Writing Proficiency.” The result of the reliability test can be seen in the following table:

Tab. 2 The Reliability of Instruments

Cronbach's Alpha	N of Items
,931	17

Based on the table 2 above, the instrument used in this research is considered highly reliable. The reliability coefficient of 0.931 indicates excellent internal consistency among the items. In general, a Cronbach's Alpha value that approaches 1 is an indicator that the instrument produces consistent and dependable results. Therefore, the questionnaire can be trusted to measure what it is intended to assess in this study.

Tab. 3 The Result of Student's Writing Score

Descriptive Statistic							
	N	Range	Minimum	Maximum	Mean	SD	Variance
	25	76,00	20,00	96,00	76,1200	14,16663	200,693
Valid N	25						

The table above shows the descriptive statistical analysis data of students' writing scores. Descriptive statistical analysis is used to provide an overview of the research data. Based on the analysis results, it is known that the data range is 76, indicating the difference between the highest and lowest scores. The minimum score obtained by the students is 20, while the maximum score reaches 96. The average (mean) of the entire data set is 76.12, which represents the midpoint of the students' writing abilities. The standard deviation value of 14.17 indicates the degree of data dispersion from the mean. Meanwhile, the variance value of 200.693 is a measure of data dispersion in the squared form of the standard deviation.

This study uses 17 questionnaire statements arranged based on the Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly agree). The questionnaire was distributed online via Google Form and filled out by 25 students from the English Education study program. Some statements in this questionnaire are

adapted from Sultan et al. (2025) in the journal titled "The Effect of ChatGPT on the Writing Abilities of Undergraduate English Students," and are linked and adjusted with references from other theories related to the use of AI in academic writing activities.

This questionnaire is designed to measure the frequency and intensity of ChatGPT usage by students, particularly in the context of academic essay writing. Each statement represents aspects such as usage habits, usage purposes, and perceptions of the assistance provided by ChatGPT in the thinking and writing process. Here are the survey data collected from the respondents:

Tab. 4 Questionnaires were used to measure the frequency and intensity of ChatGPT usage

No.	Statements	N	Mean	SD
Q1	I often use ChatGPT to help with writing tasks in English.	25	3,40	0,87
Q2	I use ChatGPT on various writing occasions.	25	2,88	0,93
Q3	I feel that ChatGPT helps improve the clarity and logic of my writing.	25	3,84	1,14
Q4	I use ChatGPT to improve the grammar in my writing.	25	3,52	1,22
Q5	I use ChatGPT to draft the framework or outline of my writing.	25	3,40	0,91
Q6	I use ChatGPT to summarize texts before rewriting them in my own words.	25	3,24	1,05
Q7	I use ChatGPT to check sentence structure.	25	3,28	1,17
Q8	I feel more confident writing after using ChatGPT's assistance.	25	3,04	1,21
Q9	I am used to using ChatGPT when I have difficulty writing.	25	3,40	1,16
Q10	I use ChatGPT as a self-learning tool for writing.	25	3,64	0,91
Q11	I feel that my writing has become more structured after using ChatGPT.	25	3,56	0,92
Q12	I am able to compose coherent paragraphs with the help of input from ChatGPT.	25	3,56	1,04
Q13	I use ChatGPT to compose transition sentences between paragraphs.	25	3,52	1,19
Q14	I use ChatGPT to understand the meaning of the topic or writing prompts in my assignments.	25	3,76	1,01
Q15	I asked ChatGPT to provide examples of academic sentences that are relevant to my writing topic.	25	3,44	1,04
Q16	I use ChatGPT to adjust my writing style to the type of academic text required.	25	3,12	0,83
Q17	I use ChatGPT to check whether the arguments in my writing are coherent and logical.	25	3,36	1,11
Mean			3,41	1,04

Based on the questionnaire data above, it can be seen that students tend to utilize ChatGPT for various aspects of academic writing. The highest average score is found in statement number 3 (Q3) with a mean score of 3.84, which states "I feel that ChatGPT helps improve the clarity and logic of my writing." This indicates that many students perceive the benefits of ChatGPT in terms of the structure of their thinking and the clarity of their writing. Additionally, statement number 14 (Q14) also has a fairly

high average score of 3.76, with the content of the statement being "I use ChatGPT to understand the meaning of topics or writing prompts in assignments." This indicates that ChatGPT is also widely used as an initial understanding aid in the writing process. The overall average score of the questionnaire is 3.41, which means it falls into the moderate to high category, although the score is still close to the moderate category boundary. This indicates that, in general, students quite frequently use ChatGPT in writing activities, whether to understand assignment instructions, brainstorm ideas, or improve the structure of their writing. Although not all students use it intensively, this data indicates that ChatGPT has become one of the quite commonly used tools in the academic writing process.

Tab. 5 The result of the Correlational Analysis between ChatGPT Usage and Students' Writing Proficiency

Correlation			
		ChatGPT Usage	Writing Score
ChatGPT Usage	Correlation Coefficient	1,000	0,017
	Sig. (2-tailed)		0,936
	N	25	25
Writing Score	Correlation Coefficient	0,017	1,000
	Sig. (2-tailed)	0,936	
	N	25	25

The results of the correlation analysis on the data above indicate that there is a very weak relationship between the frequency of ChatGPT usage and students' writing abilities. The questionnaire used in this study was designed to measure the frequency and intensity of ChatGPT usage in academic writing activities. The higher the score obtained from the questionnaire, the more frequently students use ChatGPT. However, based on the results of the Spearman correlation test, a correlation coefficient of 0.017 was obtained, indicating that the relationship between the two variables is very weak, almost nonexistent. The significance value of 0.936 also indicates that the relationship is not statistically significant. This means that although most students frequently use ChatGPT, the frequency of use is not directly related to their writing ability.

Discussion

The findings of this study show that there is no significant relationship between the use of ChatGPT and students' writing proficiency. In other words, although most students use ChatGPT, it does not affect their writing skills. These results are in line with Hamdan (2023) statement, which found that the use of ChatGPT does not have a significant impact on the improvement of students' creative writing skills. In terms of grades, they might achieve high scores with the help of ChatGPT, but not with their own writing skills, why is that? These findings are reinforced by interviews with the lecturers in charge of the essay writing course in the second semester, who stated that students who received low grades in writing were found to have fully used ChatGPT without editing or revising the results.

In assessing students' writing assignments, the lecturer also uses an AI checker. The lecturer stated that students whose writing is fully detected as AI-generated through the AI checker will immediately experience a significant reduction in their grades. So, even though the writing appears good and neat on the surface, the reality is that the quality is not a result of the student's own writing ability. The findings of this research indirectly indicate that some students who use ChatGPT tend not to engage in independent thinking. They prefer to directly copy the results from ChatGPT without editing or reevaluating. This habit, in the long run, creates dependency and reduces their ability to think critically and formulate ideas independently in writing.

In the context of academic writing, Latif (2021) explains that the writing process should consist of several stages, each providing space for students to think, develop, and refine their ideas. If students skip this process and directly copy from ChatGPT, then no learning occurs. This is also supported by Kim et al. (2025) which states that writing is a complex cognitive process that requires the writer to design, organize, and revise the content based on communication goals and logical structure.

These findings also indicate a tendency among students to overly rely on technology without a deep understanding of the writing process itself. In the long term, this dependence can hinder the development of students' critical thinking skills. Vieriu & Petrea (2025) emphasize that the use of AI in education should be supportive, not replacing the active role of students in building knowledge. If students merely copy results from ChatGPT without going through the processes of analysis, synthesis, and

evaluation, they miss the opportunity to develop authentic and reflective writing skills. This is in line with the views of Bezbaruah (2025), who state that academic writing is not just about structure and grammar, but also a social and cognitive process that requires an understanding of context, purpose, and audience.

The weak relationship between the use of ChatGPT and writing proficiency can also be linked to a lack of knowledge regarding the utilization of technology. Many of them use AI like ChatGPT merely as a practical tool, without understanding how to effectively utilize the output for their own learning. According to Marín & Castaneda (2022), digital literacy not only includes the ability to use technology but also the ability to think critically about the information produced by that technology. This is also supported by Mujiono (2024), who states that digital competence in the context of learning must include the skills to evaluate, filter, and wisely adapt digital information. Therefore, the results of this study underscore the importance of understanding the use of technology in learning.

CONCLUSION

Based on the research results, it can be concluded that there is no significant relationship between the frequency of ChatGPT usage and students' writing abilities. Although the average usage of ChatGPT falls into the upper-middle category (3.41), the Spearman correlation test results show a correlation value of 0.017 with a significance of 0.936. This means that the frequency with which students use ChatGPT does not directly affect their writing skills. The results of interviews with lecturers also show that some students who use ChatGPT fully without revising their writing will receive low grades. This is because their writing is detected by AI checkers as machine-generated, resulting in a deduction of points. This means that the use of ChatGPT without the process of independent thinking and revision can actually be detrimental to the students themselves.

Thus, ChatGPT can indeed assist in the writing process, but only if used wisely. Students still need to understand the content of their writing, formulate their own arguments, and go through the correct writing process. ChatGPT should be used as an aid, not as a complete substitute for completing assignments. This research still has limitations in terms of the number of respondents and the focus of variables. Therefore,

it is hoped that future research can expand the scope so that the results obtained are more comprehensive and in-depth.

Author Biography

Ananda Pradita Putri is a student of the English Education Study Program at *Universitas Islam Kadiri*. Ananda has an interest in the field of education, particularly in English language learning and the use of technology in the learning process. Through the ongoing research, she wants to gain a deeper understanding of how the use of technology like ChatGPT can affect students' writing skills. This research is her first step to contribute to the development of education in the digital era.

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