

The Impact Of Chatgpt Use On Efl Students' Writing Ability

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Abstract. Writing is an important English language skill for students to learn. As technology advances, Artificial Intelligence (AI) is becoming a significant trend with diverse applications. AI has penetrated various industries, including education. The emergence of artificial intelligence (AI), specifically ChatGPT, offers a new avenue to improve writing skills. ChatGPT with its capabilities will provide feedback and support in generating ideas in writing. This study aims to see whether there is a significant influence on the writing ability of grade XI students after using ChatGPT at SMAN 1 Karangrejo. This study used an experimental quantitative method for data collection. The participants of this study were 60 eleventh-grade students, 30 students from class XI-D (control class), and 30 students from class XI-E (experimental class). The instrument in this study was a test, namely a pre-test conducted before treatment, and a post-test conducted after treatment. In analyzing the data, the researcher used the t-test method on the SPSS program. The results showed that students who used ChatGPT had an improvement in writing compared to students who were taught with the usual method. This is proven by the significance value of $0.00 < 0.05$, which means that there is a significant difference in the initial and final scores of students who were given the treatment of using ChatGPT for the writing process. Based on this, it can be concluded that ChatGPT significantly affects the writing ability of eleventh-grade students of SMAN 1 Karangrejo.

Keywords: Artificial Intelligence, ChatGPT, Writing.

1. INTRODUCTION

English proficiency is becoming increasingly important for students, especially the younger generation, as English is the dominant international language (Isadaud Zulkifli, 2022). Proficiency in English includes mastery of listening, speaking, reading, and writing skills which are important aspects for academic and future endeavors. Of all these skills, writing is the most challenging for students in the context of English as a Foreign Language (EFL) (Zuhairi & Umamah, 2016). It demands cognitive and linguistic proficiency, which is often referred to as one of the most demanding tasks in language learning (Faller, 2018). Writing proficiency is not only essential for academic success but also for effective communication in various spheres of life (Sharma, 2004).

Nowadays, technology has become an integral part of everyday life. Artificial intelligence (AI), emerging as the power of machines that mimic human cognitive functions, has enormous potential in various fields, including education. According to Widyaningsih (2018), nowadays, the range of technologies are available to be used in the class. To make the atmosphere in the class be more challenging and interesting. Therefore, we can utilize AI to change and improve the way we learn, work, and interact in the future. The integration of AI, specifically ChatGPT, into language learning has revolutionized the landscape of L2 (second

language) writing. AI-powered tools such as Grammarly, Quillbot, and Google Translate have simplified the writing process, offering automated assistance in proofreading, editing, and creating content.

However, the emergence of AI-based tools raises related questions regarding their impact on academic integrity, especially in writing assessments (Haque, 2022). Although ChatGPT has shown potential in improving writing skills and facilitating feedback, concerns remain regarding its susceptibility to plagiarism and its ethical implications (Susnjak, 2022; Frye, 2023). Despite the growing interest in the role of AI in education, empirical studies specifically focusing on ChatGPT in English writing instruction are scarce (Yan, 2023). In addition, student engagement and reflections on the use of ChatGPT are still limited, making further exploration of its pedagogical efficacy necessary (Mahapatra, 2024).

To address the challenges mentioned above, this study aims to investigate the impact of using ChatGPT on the writing ability of grade XI students at SMAN 1 Karangrejo. To ascertain whether there is a significant impact of using ChatGPT on the writing ability of eleventh-grade students. Through careful examination and analysis, this study sought to analyze the impact of the integration of ChatGPT, this study sought to provide insight into the potential benefits and challenges in improving writing ability.

2. RESEARCH METHOD

This research uses a quantitative approach, which means that it uses a lot of numbers since data collection, data interpretation, and visualization of the results. Quantitative research is a research method based on positivism and is generally used to study certain populations or samples using research instruments (Fitri & Haryanti, 2020). The research uses numerical data and analyses, known as quantitative methods. Pre-determined hypotheses are tested through quantitative/statistical analysis.

Quantitative research is an approach for testing objective theories by examining the relationship among variables (Mutohar & Haryanti, 2024). These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. The final written report has a set structure consisting of an introduction, literature and theory, methods, results, and discussion (Creswell, 2014).

According to Creswell (2014), An experimental design systematically manipulates one or more variables to evaluate how this manipulation impacts an outcome (or outcomes) of interest. Importantly, an experiment isolates the effects of this manipulation by holding all other variables constant. When one group receives treatment and the other group does not (which is

a manipulated variable of interest), the experimenter can isolate whether the treatment and other factors influence the outcome.

This research was conducted using an experimental design. The main instrument used in this research was to compare the dependent variables before and after the treatment, including the pre-test and post-test instruments. This research aims to find out whether there is a significant impact of using ChatGPT on the writing ability of eleventh-grade students.

Population and Sample/ Participants of the Study

In this study the research use eleventh grade students. According to Stockemer (2019), The population is the entire group of subjects the researcher wants information on. The target population of this research is the eleventh-grade students of SMAN 1 Karangrejo Tulungagung. The total population of this research was 11 classes, each class containing about 30-40 students, and each class had a different teacher, only a few classes with the same teacher. Due to the large population, the researcher selected two classes from the eleventh-grade students for this research.

From the total population, the researcher takes two classes for the sample class D 30 students as a control class, and class E 30 students as a experiment class. The total sample is 60 students

a. Research Setting

This research setting in SMAN 1 Karangrejo

b. Research Instrument

In this research the researcher used pre-test and post-test for the instrument.

c. Data Collection

In this part, the researcher obtained the data by doing pre-test, treatment, and post-test.

1. Pre-test

Pre-test was used to determine students' writing ability related to analytical exposition before treatment. The pre-test was conducted on both samples, namely the control class and the experimental class.

The questions used in the pre-test were essays. At this stage students were asked to:

Students choose a title that has been determined by the researcher.

Students write thesis, argument, and conclusion paragraphs.

Students write at least 8-15 sentences in one text analytical exposition.

Students write at least 2 paragraphs of argument.

2. Treatment

The treatment was conducted by the researcher in collaboration with the English subject teacher of SMAN 1 Karangrejo. Researchers will conduct teaching for 6 meetings. The details of the meeting are as follows:

At the first meeting, students were asked to work on pre-test questions that had been provided by the researcher. The pre-test was done by all samples, namely the experimental group and the control group.

In the second meeting, the researcher provided material related to writing process, elements of writing, and component of writing.

In the third meeting, the researcher will provide explanatory material about analytical exposition, and introduce the ChatGPT.

At the fourth meeting, the students log in to ChatGPT, and then the researcher invites students to make an analytical exposition by collaborating, at this stage students are taught to make prewriting analytical exposition. In this section students use ChatGPT for make title, outline paragraph.

In the fifth meeting, students were asked create an outline paragraph independently using ChatGPT, of course in consultation with the researcher.

In the sixth meeting, students were asked to do the post-test questions provided by the researcher. The post-test questions were done by all samples of both experimental and control classes.

3. After the treatment was completed, the researcher continued the stage by giving a post-test

a. Data Analysis

The researcher used a quantitative type of design for this research. The researcher will use descriptive statistics to describe the pre and post-test data findings. Furthermore, the researcher used a t-test for data analysis when the data was normal, when the data is not normal the researcher used Wilcoxon to analyze the hypothesis. To find out whether there is a significant difference or not, the author uses a statistical method, namely the paired sample t-test (when the data is normal) or the Mann-Whit (when the data is not normal) formula using the SPSS version 26.0 program.

3. RESULT AND DISCUSSION

a. Results

The research conducted by the researcher with the title "The Impact Of Chatgpt Use on Efl Students' Writing Ability" obtained research results which the researcher described as follows. This study aims to determine the effect of ChatGPT on the writing ability of eleventh grade students of SMAN 1 Karangrejo.

It can be seen from the following descriptive table:

Table 4. 1 Description of Pretest-Posttest Scores of Experimental And Control Classes

Descriptive Statistics							
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance statistic
pre_experiment	30	12.00	68.00	80.00	76.8667	3.12645	9.775
pre_control	30	12.00	68.00	80.00	75.6000	3.92692	15.421
post_experiment	30	10.00	78.00	88.00	82.8667	2.70036	7.292
post_control	30	9.00	75.00	84.00	79.6667	2.49597	6.230
Valid N (listwise)	30						

From the table, it can be concluded that: in the pre-test value, the experimental class and control class students have commensurate writing values, not much different, this can be seen from the same maximum value and minimum value, namely; 68 for the minimum value and 80 as the maximum value.

Then after giving treatment to the experimental class, it can be seen that there is a significance in the value obtained. This can be seen from the minimum and maximum values of 78 for the experimental class and 75 for the control class, while the maximum value is 88 for the experimental class, and 80 for the control class. which is equal to the average The experimental group had a higher mean (82.8667) than the control group (79.6667), indicating a possible positive effect of the intervention.

Hypothesis test:

- a. H₀: ChatGPT has no impact on the writing ability of eleventh-grade students of SMAN 1 Karangrejo.
- b. H_a: ChatGPT has an impact on the eleventh-grade students of SMAN 1 Karangrejo.

Table 4. 1 Table of Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pre_experimen - post_experimen	-5.53333	1.81437	.33126	-6.21083	-4.85583	-16.704	29	.000

In the paired simple correlation box, the sig value or p-value = 0.000 < 0.05, so it can be concluded that there is a relationship between the pre-test and post-test in the experimental variable.

H0 = There is no difference between the pre-test and post-test experiment

Ha = There is a difference between the pre-test and post-test experiment

Reject H0 if p-value or sig < alpha. Conclusion p-value or sig = 0 less than 0.05 then reject H0 and accept Ha: there is a difference between the pre-test and post-test experiment

Discussion

The results showed that ChatGPT can influence students' writing skills, this is because ChatGPT is able to provide good feedback for student writing purposes. This is in line with theory that Fitria (2021)"AI in the form of Grammarly can improve students' writing skills because feedback from the application affects students' writing creativity".

ChatGPT provides real-time feedback, increases engagement, and offers a personalised learning experience, which is essential for improving writing skills. The positive outcomes observed in this study mirror the findings of Popenici & Kerr (2017), who highlight the transformational potential of AI in higher education. They argue that AI technologies can remodel the teaching and learning process, making education more adaptive and responsive to students' individual needs. Further research by Dawa et al. (2023) on ChatGPT adoption in academic writing emphasised the importance of technological literacy in utilising AI tools effectively. The current research reinforces this notion by showing that students using ChatGPT showed significant improvement in their writing performance, meaning that the integration of AI into the curriculum can yield substantial educational benefits.

4. CONCLUSION

research findings clearly demonstrate that the integration of ChatGPT into the learning process significantly enhances students' writing skills. The statistical analysis revealed that the experimental group, which received the ChatGPT intervention, showed a marked improvement in post-test scores compared to the control group, which followed conventional learning methods. This suggests that ChatGPT provides effective support in developing writing abilities, offering personalized feedback and interactive learning experiences that traditional methods may lack. Consequently, the use of ChatGPT can be considered a beneficial tool in educational settings, particularly in improving the writing proficiency of students.

However, this study is not without its limitations. The sample size was relatively small and limited to a specific school, which may affect the generalizability of the results. Additionally, the study only focused on short-term improvements in writing skills without considering long-term impacts. Future research should include a larger and more diverse sample, as well as longitudinal studies to assess the sustained effects of ChatGPT on writing skills. Moreover, exploring the integration of ChatGPT in different subjects and educational levels could provide a more comprehensive understanding of its potential benefits and limitations.

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