

Using Artificial Intelligence (AI) In Improving Students' Writing Ability On Descriptive Text At Grade Eight Of SMP Negeri 1 Siantar

Penggunaan Kecerdasan Buatan (AI) Dalam Meningkatkan Kemampuan Menulis Teks Deskriptif Siswa Kelas Delapan SMP Negeri 1 Siantar

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ABSTRACT

This research aimed to investigate the effect of using Artificial Intelligence (AI), specifically Grammarly, in improving students' writing ability on descriptive text at Grade VIII of SMP Negeri 1 Siantar in the academic year 2024/2025. Writing is one of the most challenging skills in English learning, particularly for junior high school students who often face difficulties in grammar, vocabulary, and idea organization. Therefore, the integration of AI-based learning tools is expected to support students in enhancing their writing performance. This study employed a quantitative research method with a quasi-experimental design. The population consisted of 256 Grade VIII students, and the sample was taken using purposive sampling technique. Two classes were selected, namely VIII-1 as the experimental class (32 students) taught using Grammarly, and VIII-2 as the control class (32 students) taught using conventional methods. The data were collected through pre-test and post-test writing assessments and analyzed using the Mann-Whitney U test. The findings revealed that there was a significant improvement in the experimental class after the treatment. The mean score increased from 57.97 in the pre-test to 81.25 in the post-test. Moreover, the result of the Mann-Whitney U test showed a significance value of 0.000, which is lower than 0.05, indicating a significant difference between the experimental and control classes. This proves that Grammarly as an AI-based tool has a significant effect on students' writing ability in descriptive text. In conclusion, the use of Artificial Intelligence (AI), particularly Grammarly, is effective in improving students' writing skills. It helps students enhance grammar accuracy, vocabulary usage, and writing confidence. Therefore, AI-based tools are recommended as an innovative learning media in teaching English writing.

Keywords: Artificial Intelligence, Grammarly, Writing Ability, Descriptive Text, Quasi-Experimental Research

ABSTRAK

Penelitian ini bertujuan untuk menyelidiki pengaruh penggunaan Kecerdasan Buatan (AI), khususnya Grammarly, dalam meningkatkan kemampuan menulis teks deskriptif siswa kelas VIII SMP Negeri 1 Siantar pada tahun ajaran 2024/2025. Menulis merupakan salah satu keterampilan yang paling menantang dalam pembelajaran bahasa Inggris, khususnya bagi siswa SMP yang sering menghadapi kesulitan dalam tata bahasa, kosakata, dan pengorganisasian ide. Oleh karena itu, integrasi alat pembelajaran berbasis AI diharapkan dapat mendukung siswa dalam meningkatkan kemampuan menulis mereka. Penelitian ini menggunakan metode penelitian kuantitatif dengan desain kuasi-eksperimental. Populasi terdiri dari 256 siswa kelas VIII, dan sampel diambil menggunakan teknik purposive sampling. Dua kelas dipilih, yaitu kelas VIII-1 sebagai kelas eksperimen (32 siswa) yang diajar menggunakan Grammarly, dan kelas VIII-2 sebagai kelas kontrol (32 siswa) yang diajar menggunakan metode konvensional. Data dikumpulkan melalui penilaian menulis pre-test dan post-test dan dianalisis menggunakan uji Mann-Whitney U. Hasil penelitian menunjukkan bahwa terdapat peningkatan yang signifikan pada kelas eksperimen setelah perlakuan. Nilai rata-rata meningkat dari 57,97 pada pra-uji menjadi 81,25 pada pasca-uji. Selain itu, hasil uji Mann-Whitney U menunjukkan nilai signifikansi 0,000, yang lebih rendah dari 0,05, menunjukkan perbedaan signifikan antara kelas eksperimen dan kontrol. Ini

membuktikan bahwa Grammarly sebagai alat berbasis AI memiliki pengaruh signifikan terhadap kemampuan menulis siswa dalam teks deskriptif. Kesimpulannya, penggunaan Kecerdasan Buatan (AI), khususnya Grammarly, efektif dalam meningkatkan keterampilan menulis siswa. Ini membantu siswa meningkatkan ketepatan tata bahasa, penggunaan kosakata, dan kepercayaan diri dalam menulis. Oleh karena itu, alat berbasis AI direkomendasikan sebagai media pembelajaran inovatif dalam pengajaran menulis bahasa Inggris.

Kata kunci: Kecerdasan Buatan, Grammarly, Kemampuan Menulis, Teks Deskriptif, Penelitian Kuasi-Eksperimental

1. Introduction

Writing is one of the most important productive skills in English language learning. It requires students to express ideas clearly, organize thoughts logically, and use appropriate vocabulary and grammar. Among the four language skills, writing is often considered the most difficult because it involves multiple cognitive and linguistic processes at the same time, such as planning, drafting, and revising (Graham & Perin, 2007). In Indonesian junior high schools, students frequently face difficulties in writing English texts, especially descriptive texts. A descriptive text requires students to describe a person, place, or object in detail using correct grammar and relevant vocabulary. However, many students still struggle with limited vocabulary, poor grammar usage, and lack of idea development, which leads to low writing performance.

To address these challenges, the use of technology in language learning has become increasingly important. One of the recent innovations in education is the use of Artificial Intelligence (AI)-based tools that can assist students in improving their writing skills. AI in education provides immediate feedback, grammar correction, and suggestions for improving sentence structure, which can help learners become more independent writers (Zawacki-Richter et al., 2019). One of the AI-powered writing tools widely used in language learning is Grammarly. Grammarly is an automated writing assistant that helps users detect grammatical errors, improve vocabulary usage, and enhance writing clarity. In educational settings, Grammarly has been reported to support students in identifying mistakes and improving the quality of their written work through real-time feedback (O'Neill & Russell, 2019).

The integration of AI tools such as Grammarly into the classroom also aligns with the development of 21st-century learning skills. Students are expected not only to master content but also to develop digital literacy and autonomous learning abilities. AI-based learning tools can provide opportunities for students to learn at their own pace and receive personalized feedback, which is difficult to achieve in traditional classroom settings. At SMP Negeri 1 Siantar, many eighth-grade students still experience difficulties in writing descriptive texts. Based on preliminary observations, students often make grammatical errors and struggle to organize ideas coherently. Therefore, there is a need for an innovative teaching approach that can help improve their writing ability.

This study focuses on the use of Artificial Intelligence (AI), specifically Grammarly, in improving students' writing ability in descriptive text. By comparing an experimental class using Grammarly and a control class using conventional teaching methods, this research aims to identify whether AI-based learning tools can significantly improve students' writing performance.

2. RESEARCH METHODS

1. Research Design

This research was conducted using a quantitative approach with a quasi-experimental design. A quasi-experimental design is a type of research that involves two groups, namely an experimental group and a control group, but without random assignment of subjects (Creswell,

2012). In this study, the experimental class was taught by using Grammarly as an Artificial Intelligence (AI)-based writing tool, while the control class was taught using conventional teaching methods (teacher’s explanation). The purpose of this design was to investigate whether there is a significant effect of using AI (Grammarly) on students’ ability in writing descriptive text at Grade VIII of SMP Negeri 1 Siantar.

2. Research Location and Time

This research was conducted at SMP Negeri 1 Siantar, which is located at Jl. Mahoni Raya No. 237, Perumnas Batu 6, Kec. Siantar, Kabupaten Simalungun. The study was carried out in the academic year 2024/2025.

3. Population and Sample

Population refers to the entire group of individuals or objects that are the focus of a study (Fraenkel, Wallen, & Hyun, 2012). The population of this research consisted of all Grade VIII students of SMP Negeri 1 Siantar in the academic year 2024/2025. There were 8 classes with a total of 256 students.

Table 1. Population of Grade VIII Students

No	Class	Students
1	VIII-1	32
2	VIII-2	32
3	VIII-3	32
4	VIII-4	32
5	VIII-5	32
6	VIII-6	32
7	VIII-7	32
8	VIII-8	32
Total		256

Sample is a subgroup of the population selected to represent the whole population (Sugiyono, 2017). This study used purposive sampling technique, which means the sample was selected based on certain considerations such as similarity of students’ academic level and classroom conditions.

The sample of this research consisted of two classes:

- a. VIII-1 as the experimental class (32 students), taught using Grammarly (AI tool)
- b. VIII-2 as the control class (32 students), taught using conventional teaching (teacher explanation)

4. Research Instruments

The instrument used in this research was a writing test in the form of a descriptive text task. Students were asked to write a descriptive paragraph based on a given topic both in the pre-test and post-test. The test was used to measure students’ writing ability before and after the treatment.

5. Data Collection Techniques

The data in this research were collected through the following steps:

- 1) Pre-test: Given to both experimental and control classes to measure initial writing ability.
- 2) Treatment: The experimental class was taught using Grammarly, while the control class was taught using conventional methods.
- 3) Post-test: Given after the treatment to measure students’ writing improvement.

6. Data Analysis Technique

The data were analyzed using quantitative statistical analysis. The steps included:

- 1) Calculating mean scores of pre-test and post-test
- 2) Comparing experimental and control class results
- 3) Testing hypotheses using Mann-Whitney U test because the data were not normally distributed

The hypothesis testing was carried out using a significance level of 0.05. If the Asymp. Sig (2-tailed) value is lower than 0.05, it means that there is a significant effect of using Grammarly on students’ writing ability.

4. Results

The findings of this research were obtained from the analysis of students’ writing scores in descriptive text before and after the treatment. The data were collected from two classes, namely the experimental class (VIII-1) and the control class (VIII-2), each consisting of 32 students. The experimental class was taught using Grammarly as an Artificial Intelligence (AI)-based writing tool, while the control class was taught using conventional teaching methods based on teacher explanation. The purpose of this analysis was to determine whether there is a significant effect of using Grammarly on students’ writing ability. Based on the pre-test and post-test results of the experimental class, there was a clear improvement in students’ writing performance after the implementation of Grammarly. The mean score in the pre-test was 57.97, while the mean score in the post-test increased to 81.25. This indicates that students experienced significant improvement in their ability to write descriptive texts after being exposed to AI-assisted writing feedback. In addition, the improvement was consistent because no students showed a decrease in scores, and all students demonstrated progress in their writing performance.

Table 1. Pre-test and Post-test Scores of Experimental Class (VIII-1)

No	Statistic	Pre-test	Post-test
1	Mean	57.97	81.25
2	Highest	75	95
3	Lowest	45	70
4	N	32	32

In contrast, the control class that was taught using conventional methods showed lower improvement compared to the experimental class. Although students in the control group also experienced some progress, their overall achievement remained lower than that of the experimental group. The comparison of post-test results between the two classes shows that the experimental class had a higher mean rank of 42.92 with a sum of ranks of 1374.50, while the control class had a lower mean rank of 22.05 with a sum of ranks of 705.50. This difference indicates that the students who used Grammarly performed better in writing descriptive texts compared to those who did not use AI-based assistance.

Furthermore, the hypothesis testing was conducted using the Mann-Whitney U test to determine whether the difference between the two groups was statistically significant. The result of the test showed that the Asymp. Sig. (2-tailed) value was 0.000, which is lower than the significance level of 0.05. This means that the null hypothesis was rejected and the alternative hypothesis was accepted. Therefore, it can be concluded that there is a significant effect of using Grammarly as an Artificial Intelligence (AI) tool on students’ writing ability in descriptive text.

Overall, the findings of this study demonstrate that the use of Grammarly has a positive impact on students’ writing performance. The experimental class showed a greater improvement compared to the control class, both in terms of mean scores and statistical significance. These results indicate that AI-based writing tools can effectively support students in improving grammar accuracy, vocabulary usage, and sentence structure in descriptive writing tasks.

Discussion

The findings of this research show that the use of Artificial Intelligence (AI), specifically Grammarly, has a significant effect on students' writing ability in descriptive text. The improvement observed in the experimental class indicates that AI-based writing support can help students develop better writing skills compared to conventional teaching methods. This is evident from the increase in the mean score from 57.97 in the pre-test to 81.25 in the post-test, which shows a substantial improvement after the treatment.

The result of the Mann-Whitney U test also strengthens this finding, where the significance value was 0.000, which is lower than 0.05. This indicates that there is a statistically significant difference between the experimental and control classes. In other words, the use of Grammarly as an AI tool provides a more effective learning experience in improving students' writing ability in descriptive text. This finding is in line with previous studies that suggest technology-assisted language learning can enhance students' writing performance by providing immediate feedback and error correction (O'Neill & Russell, 2019).

One of the main reasons for this improvement is that Grammarly helps students identify grammatical errors, spelling mistakes, and sentence structure problems in real time. This immediate feedback allows students to revise their writing more effectively without waiting for teacher correction. As a result, students become more aware of their mistakes and gradually improve their writing accuracy and fluency. This supports the idea that AI tools can promote autonomous learning and reduce dependency on teacher feedback (Zawacki-Richter et al., 2019).

In addition, the use of Grammarly increases students' motivation and confidence in writing. Many students often feel afraid of making mistakes when writing in English. However, with the assistance of AI, students can revise their work independently and repeatedly until they produce a better version. This learning process encourages active engagement and reduces writing anxiety, which is a common problem in second language writing classrooms.

The novelty of this research lies in the integration of Artificial Intelligence (AI) tools at the junior high school level, particularly in teaching descriptive text writing. While many previous studies have focused on higher education, this study demonstrates that AI-based tools such as Grammarly can also be effectively applied to junior high school students. Moreover, this study specifically highlights how AI can be used not only as a supplementary tool but also as a central learning aid in improving students' writing skills.

Furthermore, the comparison between the experimental and control classes shows that traditional teacher-centered instruction is less effective in improving writing performance compared to AI-assisted learning. Although teacher explanation remains important, the combination of teacher guidance and AI feedback provides a more comprehensive learning experience. This suggests that the integration of technology in language learning should be encouraged to support modern educational goals. In conclusion, the findings of this study confirm that Grammarly as an AI-based writing tool has a positive and significant effect on students' writing ability in descriptive text. It not only improves students' grammatical accuracy and vocabulary usage but also enhances their motivation, independence, and confidence in writing.

4. Conclusion

Based on the results and discussion of this research, it can be concluded that the use of Artificial Intelligence (AI), specifically Grammarly, has a significant effect on students' ability in writing descriptive text. The improvement of students' scores in the experimental class shows that AI-assisted learning provides better outcomes compared to conventional teaching methods. The increase from the pre-test mean score of 57.97 to the post-test mean score of 81.25 clearly indicates a positive development in students' writing performance. Furthermore,

the statistical analysis using the Mann-Whitney U test supports this conclusion. The significance value obtained was 0.000, which is lower than 0.05. This means that there is a significant difference between the experimental class and the control class. Therefore, it can be stated that Grammarly as an AI-based writing tool has a significant impact on improving students' writing ability in descriptive text at Grade VIII of SMP Negeri 1 Siantar.

In addition, the use of Grammarly helps students improve several aspects of writing, including grammar accuracy, vocabulary usage, and sentence structure. It also encourages students to learn independently by providing immediate feedback and allowing them to revise their work repeatedly. This makes the learning process more effective and engaging, especially for students who struggle with English writing. Overall, it can be concluded that the integration of Artificial Intelligence (AI) in English language learning is beneficial for junior high school students. Grammarly not only improves writing achievement but also increases students' motivation and confidence in writing descriptive texts. Therefore, it is recommended that teachers consider using AI-based tools as an alternative teaching strategy to support students' writing development.

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