

## **THE INFLUENCE OF BLACKBOX AI LEARNING ON STUDENTS' ENGLISH WRITING SKILL**

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### **ABSTRACT**

This research aims to examine the significant influence of using Blackbox AI on improving students' English writing skills. The purpose of this study was to determine the significant influence between the use of Blackbox AI and students' writing skills. This research used a quasi-experimental design involving 54 eleventh-grade students at MA Al-Islamiyah Bebidas, divided into an experimental group (26 students) taught using Blackbox AI and a control group (28 students) taught using traditional methods. Data were collected through pre-test, post-test, and perception questionnaire. The results showed that the experimental group obtained a higher mean score ( $M = 89.31$ ) compared to the control group ( $M = 69.57$ ). An independent samples t-test ( $t = 14.54$ ,  $p < 0.001$ ) confirmed the significant influence of using Blackbox AI on students' writing ability. In addition, students gave positive perceptions, especially on the improvement of vocabulary mastery, grammatical accuracy, and writing confidence. Thus, this research proves that Blackbox AI is an effective tool to improve students' English writing skills as well as create more engaging learning experiences.

**Keywords:** *Blackbox AI, Writing Skills, English Learning, Students' Perception*

### **ABSTRAK**

Penelitian ini bertujuan untuk menguji pengaruh signifikan penggunaan Blackbox AI terhadap peningkatan keterampilan menulis bahasa Inggris siswa. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh yang signifikan antara penggunaan Blackbox AI dan keterampilan menulis siswa, tata bahasa, dan kepercayaan diri menulis dibandingkan dengan metode pengajaran konvensional. Penelitian ini menggunakan desain kuasi-eksperimen dengan melibatkan 54 siswa kelas XI MA Al-Islamiyah Bebidas, yang terbagi dalam kelompok eksperimen (26 siswa) yang diajar menggunakan Blackbox AI dan kelompok kontrol (28 siswa) yang diajar dengan metode tradisional. Data dikumpulkan melalui *pre-test*, *post-test*, dan angket persepsi. Hasil penelitian menunjukkan bahwa kelompok eksperimen memperoleh skor rata-rata lebih tinggi ( $M = 89,31$ ) dibandingkan kelompok kontrol ( $M = 69,57$ ). Uji t sampel independen ( $t = 14,54$ ,  $p < 0,001$ ) mengonfirmasi adanya pengaruh signifikan penggunaan Blackbox AI terhadap

kemampuan menulis siswa. Selain itu, siswa memberikan persepsi positif, terutama pada peningkatan penguasaan kosakata, ketepatan tata bahasa, dan kepercayaan diri menulis. Dengan demikian, penelitian ini membuktikan bahwa Blackbox AI merupakan alat yang efektif untuk meningkatkan keterampilan menulis bahasa Inggris siswa sekaligus menciptakan pengalaman belajar yang lebih menarik menciptakan pengalaman belajar yang lebih menarik.keterampilan menulis bahasa Inggris siswa.

**Kata Kunci:** *Blackbox AI, Keterampilan Menulis, Pembelajaran Bahasa Inggris, Persepsi Siswa.*

## **A. INTRODUCTION**

The development of technology in the industrial revolution 4.0 era required the integration of technology into learning. Students in the current generation were more interested in the use of technology than traditional methods (Anwar et al., 2021). One of the innovations that developed was the use of Artificial Intelligence (AI) in education, including in writing skills.

Blackbox AI was an AI-based application that could provide instant feedback on grammar, vocabulary, and sentence structure. However, its effectiveness in the context of English language learning still needed to be proven empirically. Therefore, this study was conducted to answer the question: Was there a significant influence of using Blackbox AI on students' English writing skills?

The purpose of this study was to determine the effect of Blackbox AI on students' writing skills, particularly in vocabulary mastery, grammatical accuracy, and writing confidence. According to Selwyn (2023), the integration of AI in education has transformed the way students learn and teachers teach.

## **B. RESEARCH METHOD**

This study used a quasi-experimental design with a pretest–posttest control group design. The sample consisted of 54 eleventh-grade students at MA Al-Islamiyah Bebidas, with 26 students as the experimental group (who used Blackbox AI) and 28 students as the control group (who used conventional methods).

The research instruments included writing tests (pre-test and post-test) and a student perception questionnaire. The

validity of the instruments was examined through expert judgment, while the reliability of the questionnaire was tested using Cronbach's Alpha ( $\alpha = 0.842$ ). The data were analyzed using an independent samples t-test after normality and homogeneity assumptions were fulfilled. The sample in this study was determined following Sugiyono's (2013) definition that a sample is a subset of the population representing its characteristics.

### C. RESULTS AND DISCUSSION

This research was conducted on students of class XIA and XIB at Pondok Pesantren Al-Islamiyah Bebidas in the academic year 2025/2026. The total number of respondents was 54 students, consisting of 26 students from class XIA and 28 students from class XIB. Based on gender, the respondents were divided into male and female students. The researcher used two instruments to collect the data: a writing test and a questionnaire. The writing test was used to measure the students' writing ability, while the questionnaire was used to investigate students' perceptions of using Blackbox AI in subtitling.

Table 1. Descriptive Statistics of Students' Writing Scores

Group	N	Min	Max	Mean ± SD
Control	28	58	80	69.57 ± 5.97

Table 2. Independent Samples T-Test

t	df	Sig. (2- tailed )	Mean Differenc e	Std. Error Differenc e
14.54	52	0.000	19.739	1.357

The results showed that there was a significant difference between the experimental and control groups. The mean score of the control group was 69.57 (SD = 5.97), while the experimental group reached 89.31 (SD = 3.63). The independent samples t-test indicated  $t(52) = 14.54$ ,  $p < 0.001$ , confirming a significant difference between the two groups.

In addition, the results of the questionnaire indicated that students gave positive responses to the use of Blackbox AI, particularly in vocabulary mastery, grammatical accuracy, and writing confidence. These findings were in line with previous studies which stated that

AI could help improve writing quality by providing instant feedback, enriching vocabulary, and increasing motivation to write.

#### **D. CONCLUSION**

In conclusion, this research confirmed that Blackbox AI was a highly effective medium for improving students' English writing skills. Its impact on vocabulary mastery, grammatical accuracy, writing confidence, and learner autonomy demonstrated that technology, when integrated wisely, could transform the learning process. At the same time, its limitations reminded us that AI should complement, not replace, human instruction. With careful implementation, continuous guidance, and ethical considerations, AI-based tools such as Blackbox AI could become powerful allies in advancing language education and equipping students with the skills necessary for success in both academic and professional contexts. The findings of this study strongly indicate that the integration of Blackbox AI in the teaching of English writing skills has produced significant positive effects on students' performance.

The experimental class, which was taught using Blackbox AI, achieved a

significantly higher mean score compared to the control class taught with conventional methods. This statistical difference was supported by the independent samples t-test, which showed a highly significant result. The improvement in writing skills covered key areas such as vocabulary mastery, grammatical accuracy, and overall writing confidence. These results affirm that the application of AI-based tools in language learning can provide students with more effective and engaging learning experiences.

Furthermore, the role of Blackbox AI was particularly evident in helping students expand their vocabulary. The tool provided alternative word choices and contextual suggestions that students might not have been able to access through traditional methods. As a result, students were exposed to richer and more varied vocabulary in their writing tasks. This exposure not only helped them to construct more precise and expressive sentences but also fostered creativity in their writing. In this regard, Blackbox AI served as a valuable support system in enhancing one of the most fundamental aspects of writing: lexical development.

Suggestions: (1) Teachers were recommended to use Blackbox AI as a supporting medium in teaching writing. (2) Students could utilize Blackbox AI as an independent practice tool. (3) Future researchers were suggested to expand the sample and extend the duration of the study to measure long-term impacts.

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