

THE EFFECT OF AI USE ON ENGLISH PROFICIENCY OF HIGH SCHOOL STUDENTS AT SMK TELKOM 2 MEDAN

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ABSTRACT

This study examines the impact of artificial intelligence (AI) usage on the English proficiency of high school students at SMK Telkom 2 Medan. As AI-based tools such as chatbots, language learning apps, and automated writing assistants become increasingly integrated into students' daily academic activities, they offer both potential benefits and challenges for language development. The research adopts a quantitative correlational approach, involving 70 students selected as participants. Data were gathered through questionnaires and English proficiency assessments, then analyzed using correlation and regression techniques. The results indicate a positive and statistically significant relationship between the use of AI tools and students' English proficiency, particularly in improving vocabulary mastery, writing organization, and reading comprehension. Students also reported increased confidence when practicing English with AI assistance. However, the study also highlights potential drawbacks, such as over-reliance on AI-generated responses, which may limit critical thinking and reduce grammatical accuracy when students do not actively engage in the learning process. Overall, the findings suggest that AI can function as an effective supplementary tool in English learning when used thoughtfully and under proper guidance. This research contributes to the growing discussion on technology-enhanced language learning and offers practical insights for educators in integrating AI into classroom instruction in a balanced and pedagogically sound manner.

Keywords: artificial intelligence, english language learning, english proficiency

ABSTRAK

Penelitian ini mengkaji dampak penggunaan kecerdasan buatan (AI) terhadap kemahiran bahasa Inggris siswa SMA di SMK Telkom 2 Medan. Seiring dengan semakin terintegrasinya alat berbasis AI seperti chatbot, aplikasi pembelajaran bahasa, dan asisten penulisan otomatis ke dalam kegiatan akademik sehari-hari siswa, hal ini menghadirkan potensi manfaat sekaligus tantangan bagi perkembangan bahasa. Penelitian ini menggunakan pendekatan korelasi kuantitatif, dengan melibatkan 70 siswa yang dipilih sebagai peserta. Data dikumpulkan melalui kuesioner dan penilaian kemahiran bahasa Inggris, kemudian dianalisis menggunakan teknik korelasi dan regresi. Hasil penelitian menunjukkan hubungan positif dan signifikan secara statistik antara penggunaan alat AI dan kemahiran bahasa Inggris siswa, terutama dalam meningkatkan penguasaan

kosakata, organisasi penulisan, dan pemahaman bacaan. Siswa juga melaporkan peningkatan kepercayaan diri saat berlatih bahasa Inggris dengan bantuan AI. Namun, studi ini juga menyoroti potensi kelemahan, seperti ketergantungan berlebihan pada respons yang dihasilkan AI, yang dapat membatasi pemikiran kritis dan mengurangi akurasi tata bahasa jika siswa tidak secara aktif terlibat dalam proses pembelajaran. Secara keseluruhan, temuan ini menunjukkan bahwa AI dapat berfungsi sebagai alat bantu yang efektif dalam pembelajaran bahasa Inggris jika digunakan dengan bijaksana dan di bawah bimbingan yang tepat. Penelitian ini berkontribusi pada diskusi yang semakin berkembang mengenai pembelajaran bahasa yang didukung teknologi dan menawarkan wawasan praktis bagi pendidik dalam mengintegrasikan kecerdasan buatan ke dalam pembelajaran di kelas secara seimbang dan secara pedagogis tepat.

Kata Kunci: Kecerdasan buatan, Pembelajaran Bahasa Inggris, Kemahiran Bahasa Inggris

A. Introduction

The rapid growth of digital technology has significantly reshaped the educational landscape, especially in the field of language learning. In recent years, artificial intelligence (AI) has evolved beyond its initial role as a technological tool and has become an important resource in supporting learning activities. High school students, as active users of digital technology, increasingly rely on AI-based tools such as chatbots, grammar checkers, and automated writing assistants for both academic and personal purposes. This shift creates new opportunities for improving English proficiency by providing instant feedback, personalized learning experiences, and exposure to authentic language use.

The integration of AI into improvement in certain aspects of English proficiency, particularly in language learning aligns with modern educational theories that emphasize interactive, adaptive, and learner centered environments. AI enables students to engage with English in more flexible and meaningful ways, allowing them to practice language skills beyond traditional classroom settings. Through continuous interaction with AI tools, students can improve vocabulary, writing structure, and comprehension skills in a more autonomous manner.

In the Indonesian educational context, the use of AI in language learning has begun to attract attention, although research in this area is still relatively limited. Several studies suggest that AI can support language

acquisition by offering immediate corrections, personalized suggestions, and diverse learning materials. Students who frequently engage with AI tools tend to show writing and reading. Moreover, AI can enhance students' confidence by providing a low-pressure environment where they can practice without fear of making mistakes.

However, the use of AI is not without challenges. One major concern is students' overdependence on AI-generated responses, which may reduce their critical thinking skills and limit their ability to construct ideas independently. In addition, excessive reliance on AI tools may hinder the development of grammatical accuracy if students simply accept corrections without understanding them. Another issue is that not all AI-generated content is fully accurate, which requires students to remain critical and selective in using such tools.

Furthermore, the effectiveness of AI in language learning depends on several factors, including frequency of use, type of AI tools, and students' level of engagement. While AI offers many advantages, its impact is not automatic and largely depends on how

it is utilized by learners. Students who actively engage with AI as a learning partner tend to gain more benefits compared to those who use it passively.

Although previous studies have explored specific aspects such as writing improvement or learner motivation, comprehensive research examining the overall impact of AI on English proficiency is still limited. In addition, studies focusing on vocational high school students, particularly in Medan, remain scarce. Therefore, this study aims to fill this gap by analyzing the relationship between AI usage and English proficiency among students at SMK Telkom 2 Medan.

B. Research Method

This study employed a quantitative correlational research design to investigate the relationship between the use of artificial intelligence (AI) and English proficiency among students at SMK Telkom 2 Medan. A correlational approach was chosen because it allows researchers to identify the degree and direction of the relationship between variables without manipulating the research environment.

The study was conducted at SMK Telkom 2 Medan, Indonesia, and involved 70 students as participants. The participants were selected based on their experience using AI tools for educational purposes, particularly in learning English. Their varying levels of English proficiency and patterns of AI usage provided a suitable basis for examining the relationship between the variables.

Data were collected using a structured questionnaire and an English proficiency test. The questionnaire was designed to examine students' frequency and patterns of AI usage, while the proficiency test assessed vocabulary, grammar, reading comprehension, and writing skills. Data collection was conducted in a supervised session to ensure consistency and reliability.

To ensure the quality of the research instruments, validity and reliability tests were conducted. Content validity was established through expert judgment, while reliability was measured using Cronbach's Alpha. The collected data were analyzed using descriptive statistics, Pearson Product-Moment Correlation, and simple linear regression. A significance level of 0.05

was applied to determine the statistical significance of the findings.

C. Results and Discussions

The analysis revealed that AI tools have a positive effect on students' English proficiency among students at SMK Telkom 2. Based on the questionnaire results, the majority of students agreed that AI tools support English learning activities and improve their English proficiency. The findings indicate that AI tools contribute positively to vocabulary mastery, grammar understanding, speaking skills, and reading comprehension.

Table 1 Students' Responses toward the Use of AI Tools

Indicator	Agree & Strongly Agree	Interpretation
Understanding English lessons	98.6%	Very Positive
Learning new vocabulary	98.6%	Very Positive
Learning effectiveness	81.4%	Positive
Completing assignments faster	100%	Very Positive
Useful explanations for learning	95.6%	Very Positive

The findings demonstrate that students perceive AI tools as helpful and effective in supporting English learning. Most students agreed that AI tools make English lessons easier to understand and help them learn new vocabulary more effectively. These findings are consistent with previous studies which stated that AI technologies can support students' language acquisition and learning motivation.

Further analysis was conducted to examine students' motivation and engagement in learning English using AI tools.

Table 2 Students' Motivation and Interest toward the Use of AI Tools

Indicator	Agree & Strongly Agree	Interpretation
Learning English becomes more interesting	95.7%	Very Positive
Increased learning motivation	98.5%	Very Positive
Enjoy learning English using AI	95.4%	Very Positive

Confidence in learning English	95.6%	Very Positive
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More active during learning activities	97.1%	Very Positive
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The results indicate that AI tools increase students' motivation and interest in learning English. Most respondents stated that AI tools create a more engaging learning environment and encourage active participation during English learning activities. These findings support previous research which emphasized that AI-assisted learning environments improve students' confidence and engagement in language learning.

Moreover, the findings also reveal that AI tools positively affect students' English proficiency improvement.

Table 3 English Proficiency Improvement through AI Tools

Skill Area	Agree & Strongly Agree	Category
Vocabulary mastery	97.1%	High
Grammar understanding	100%	Very High
Speaking skills	97.1%	High

Reading comprehension	97.1%	High
Overall English proficiency	97.1%	High

The data show that AI tools significantly help students improve their English proficiency, particularly in vocabulary mastery and grammar understanding. Students also reported improvements in speaking skills and reading comprehension after using AI tools. These findings align with previous studies which found that AI technologies provide interactive and personalized learning experiences that support English language development.

Overall, the findings demonstrate that AI tools have a positive impact on English learning among students at SMK Telkom 2. The accessibility and effectiveness of AI tools contribute to increased motivation, engagement, and language proficiency. Therefore, AI tools can be considered useful supplementary media for English language learning.

D. Conclusion

This study concludes that the use of artificial intelligence (AI) tools has a positive effect on the English

proficiency of students at SMK Telkom 2 Medan. The findings indicate that AI contributes to improvements in vocabulary mastery, grammar understanding, reading comprehension, and overall language proficiency. In addition, students reported higher levels of motivation, engagement, and confidence when learning English through AI-assisted tools. These results suggest that AI can serve as an effective supplementary resource that supports students' language learning experiences and enhances their academic performance.

However, the study also highlights the importance of using AI responsibly in educational settings. Excessive dependence on AI-generated content may reduce students' critical thinking skills and limit their ability to develop language proficiency independently. Therefore, AI should be integrated into English language learning in a balanced and pedagogically appropriate manner, with proper guidance from teachers. Future research is recommended to involve larger samples and explore the long-term impact of AI tools on different aspects of language learning in various educational contexts.

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