

THE CORRELATION BETWEEN AI (ARTIFICIAL INTELLIGENCE) AND STUDENTS' SPEAKING PERFORMANCE IN THE EFL CLASSROOM

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui apakah ada korelasi antara penggunaan kecerdasan buatan dan kinerja berbicara mahasiswa semester empat jurusan Bahasa Inggris di Universitas Islam Negeri Fatmawati Sukarno Bengkulu. Untuk mencapai tujuan tersebut, penelitian ini memilih sampel sebanyak 40 mahasiswa dari jurusan yang sama dan menggunakan metode kuantitatif dengan teknik analisis korelasional. Data dikumpulkan melalui serangkaian kuesioner yang terdiri dari 20 pertanyaan, yang dibagikan kepada siswa. Tanggapan dinilai pada Skala Lima Likert untuk menilai tingkat kinerja berbicara siswa. Selain itu, penelitian ini melakukan tes lisan untuk lima kelompok siswa untuk menilai keterampilan berbicara mereka dalam lima aspek: tata bahasa, kosa kata, kefasihan, pengucapan, dan pemahaman. Analisis data menggunakan Korelasi Product-Moment Pearson mengungkapkan bahwa siswa tidak mencapai skor kinerja berbicara yang lebih tinggi meskipun menggunakan AI. Perhitungan menghasilkan total r_{xy} sebesar $-0,258$, dengan $N. sig = 0,109$, yang menunjukkan bahwa t_{hitung} lebih kecil dari t_{tabel} ($-0,258 < 0,312$). Hasil ini mendukung penerimaan hipotesis nol, yang menunjukkan bahwa tidak ada korelasi yang signifikan antara penggunaan AI dan kinerja berbicara mahasiswa jurusan Bahasa Inggris semester empat di Universitas Islam Negeri Fatmawati Sukarno Bengkulu.

Kata Kunci: AI (Artificial Intelligence), Performa Berbicara, EFL

ABSTRACT

The aim of this study is to investigate whether there is a correlation between the use of artificial intelligence and the speaking performance of fourth-semester English department students at Universitas Islam Negeri Fatmawati Sukarno Bengkulu. To achieve this goal, the study selected a sample of 40 students from the same department and employed a quantitative method with a correlational analysis technique. The data was gathered through a set of questionnaires consisting of 20 questions, which were distributed to the students. The responses were rated on a Five Likert Scale to assess students' speaking performance levels. Additionally, the study conducted an oral test for five groups of students to assess their speaking skills in five aspects: grammar, vocabulary, fluency, pronunciation, and comprehension. The analysis of the data using the Product-Moment Pearson Correlation revealed that students did not achieve higher speaking performance scores despite using AI. The calculation yielded a total r_{xy} of $-.258$, with $N. sig = .109$, indicating that t_{count} was less than t_{table} ($-.258 < 0.312$). This result supports the acceptance of the null hypothesis, suggesting that there is no significant

correlation between AI use and speaking performance of fourth-semester English department students at Universitas Islam Negeri Fatmawati Sukarno Bengkulu.

Keywords: AI (Artificial Intelligence), Speaking Performance, EFL

A. Introduction

English communication skills are vital for enhancing social interactions and professional prospects. For foreign language learners, however, improving oral proficiency can be challenging when access to the target language and practice opportunities are limited. (Fryer & Carpenter, 2006).

In today's fast-paced digital landscape, the rapid evolution of information technology (IT) is driving educational institutions to integrate mobile computing devices into their learning strategies. This shift is particularly evident in the adoption of virtual learning environments, which have become integral to the enhanced learning curriculum, offering students a more immersive and interactive educational experience (Hamuddin et al., 2018). One of the most significant technological advancements affecting the education sector is artificial intelligence (AI), which has had a profound and far-reaching impact on the way we learn and teach (Chen et al., 2020).

Overall, AI is designed as a virtual assistant to perform and support human tasks (Günay et al., 2023). Integrating this concept into educational settings can significantly enhance the teaching and learning experience for both educators and students. Leveraging IT tools like AI systems, software, and infrastructure, geographical barriers are effectively eliminated, allowing learners to access course materials and engage with instructors and peers at any time and location (Junaidi et al., 2020). Artificial intelligence (AI) has revolutionized educational programs, empowering students to acquire a diverse range of skills by providing a broader spectrum of services, enhancing learners' motivation, and expanding the scope of traditional learning methods in the digital age, which is crucial in the 21st century (Miller, 2019).

Education in a foreign language typically places significant emphasis on the mastery of grammar, syntax, and spelling to ensure a solid foundation for further language development (Curtin, 2021). The

primary impetus behind learning a foreign language today is the desire to achieve fluency in speaking the target language (Amoah & Yeboah, 2021). The spoken language is inherently imperfect, characterized by false starts, omissions, hesitations, and errors that significantly impact speaking performance. Despite these imperfections, numerous studies have been conducted to enhance English speaking skills, reflecting the importance of continuous improvement in this area (Sight-terp, 2023). The integration of Artificial Intelligence (AI) in English as a Foreign Language (EFL) instruction has become a viable option due to the enhanced affordability and reliability of AI technologies.

When interacting with an Artificial Intelligence (AI), its Automatic Speech Recognition (ASR) technology detects and processes the sequence of speech and voice patterns from students (Southwell et al., 2022) which is similar to how humans recognize speech, otherwise known as Human Speech Recognition. This means students can use AI in speaking class, thus the author needs to explore the impact of AI on students'

speaking performance in the EFL classroom.

In the present era of technological advancements, numerous students effectively leverage these innovations to enhance their educational experience. Specifically, many students utilize Artificial Intelligence (AI) as a valuable tool to facilitate their learning, particularly in the context of acquiring foreign languages. However, a significant issue arises when students employ AI to learn English speaking skills within the classroom setting.

Speaking is a reciprocal process that involves the simultaneous production, reception, and processing of information to establish and convey meaning (Karpovich et al., 2021). The meaning and significance of a phrase are contingent upon the specific context in which it is used, the individual involved, and the intended purpose of speaking.

According to (Choirunnisa & Sari, 2021) speaking involves the creation and dissemination of meaning through both written and spoken mediums. This process enables the speaker to convey their thoughts and objectives, which are

essential components of effective communication. Furthermore, it is noteworthy that speaking is considered a crucial aspect of English proficiency, as it has been a fundamental means of communication in human interaction, predating the development of reading and writing skills (Kaur & Abdul Aziz, 2020).

The research on "The Correlation Between AI and Students' Speaking Performance in the EFL Classroom" is significant for theoretical development in several ways. The research on "The Correlation Between AI and Students' Speaking Performance in the EFL Classroom" is significant for theoretical development in several ways.

The research underscores the capacity of artificial intelligence technology to augment students' oral proficiency in English as a Foreign Language (EFL) instructional settings. This discovery contributes to the theoretical advancement of AI technology in education and its potential to enhance language acquisition outcomes.

The study offers valuable insights into the pedagogical implications of integrating AI

technology in language learning. This encompasses the potential of AI technology to offer tailored feedback, boost student participation, and foster self-directed learning. These findings contribute to the theoretical development of language learning pedagogy.

The research employs correlation analysis to examine the relationship between AI technology and students' speaking performance. This approach contributes to the theoretical development of research methods in language learning and provides a framework for future research in this area.

B. Research Methodology

The research used a quantitative method. According to John W Creswell, "Quantitative research is a means for testing objectives theories by examining the relationship among variables" (Creswell, 2018). Creswell described quantitative research as a systematic process involving data collection, analysis, interpretation, and documentation of the study's findings (Williams, 2007).

This research has two variables. AI was the independent

variable which is symbolized with “X”, while students’ speaking performance was the dependent variable symbolized with “Y”. So, the author used a correlational analysis design to show the percentage and number revealing the correlation between the two variables.

The population for this research is 90 students of the English Department of UINFAS Bengkulu for fourth-semester students. The study selected a sample of 35 students, comprising both male and female students who are native speakers of English and Bahasa Indonesia. This sample size is considered sufficient for a correlational study, as most researchers agree that a minimum of 30 participants is necessary for a reliable and representative sample. (Mizhir Krebt, 2023). The sampling technique employed in this study is straightforward random sampling, which involves several steps to select participants. These steps include: first, determining the required sample size; second, compiling a list of the population and numbering it; and third, shuffling the list and selecting the numbers that correspond to the sample size, with the process

repeated until the desired sample size is achieved.

The research will be conducted over four meetings, during which students will be asked to fill out a set of questionnaires designed to measure how often they use Artificial Intelligence (AI) and participate in spoken tests. These instruments, comprising questionnaires and spoken tests, will be used to gather data from the students.

The questionnaire consists of 20 items presented on a five-point Likert scale. This scale allows students to express the extent to which they agree or disagree with the provided statements. The response options include: Strongly Agree (*Sangat Setuju* (SS)), Agree (*Setuju* (S)), Undecided (*Tidak Tahu* (U)), Disagree (*Tidak Setuju* (TS)), and Strongly Disagree (*Sangat Tidak Setuju* (STS)).

During the research, students will be asked to reflect on their experiences with AI and indicate their frequency of usage through the questionnaire. The Likert scale format is chosen because it provides a nuanced view of students' attitudes and behaviors, allowing for a more

detailed analysis of their interactions with AI. This method of data collection is crucial as it captures the subjective perceptions of students, which are essential in understanding their engagement with AI tools in the learning process.

In addition to the questionnaires, the spoken tests will be administered to assess the students' speaking performance. These tests will evaluate various aspects of their spoken English, such as fluency, accuracy, pronunciation, and overall communicative competence. The spoken tests are designed to provide an objective measure of students' speaking skills, complementing the self-reported data from the questionnaires.

The combination of these two instruments aims to provide a comprehensive picture of how AI usage correlates with speaking performance. By analyzing the data collected from both the questionnaires and spoken tests, the research intends to uncover patterns and relationships that can offer insights into the effectiveness of AI in enhancing language learning outcomes.

The decision to use a Likert scale in the questionnaire is based on its ability to capture the intensity of students' attitudes towards AI. Each of the 20 items is carefully crafted to address different dimensions of AI usage, such as frequency, ease of use, perceived benefits, and challenges. This detailed approach ensures that the data collected is robust and reflective of the students' true experiences.

Furthermore, the spoken tests will be conducted in a controlled environment to ensure consistency and reliability. Students will be given prompts or topics to speak about, and their responses will be recorded for analysis. The evaluation criteria will include parameters such as the complexity of vocabulary, grammatical correctness, and the ability to convey ideas effectively. This rigorous assessment process is designed to provide a clear and objective measure of the students' speaking abilities.

The research will employ statistical analysis tools to analyze the data collected from the questionnaires and spoken tests. By using techniques such as correlation analysis, the study will examine the relationship between AI usage and speaking performance.

The goal is to determine whether there is a statistically significant correlation between the two variables and to understand the nature of this relationship. The findings from this research could have important implications for the integration of AI in language education. If a positive correlation is found, it could support the argument for increased use of AI tools in EFL classrooms. Conversely, if no significant correlation is found, it could prompt educators and policymakers to reconsider the role of AI in language learning and explore alternative methods and tools.

Overall, this research aims to contribute to the growing body of knowledge on the use of AI in education. By systematically investigating the relationship between AI usage and speaking performance, the study seeks to provide evidence-based insights that can inform teaching practices and help improve language learning outcomes.

The comprehensive approach of

Reliability Statistics	
Cronbach's Alpha	N of Items
.770	20

using both questionnaires and spoken tests ensures that the data collected is both subjective and objective,

providing a well-rounded perspective on the impact of AI on students' speaking skills. The students were grouped into 5 groups and performed speaking in front of the classroom with their chosen theme. The test assists six aspects; pronunciation, grammar, vocabulary, fluency, comprehension, and performance. The implementation of the speaking assessment was taken from Douglas Brown's theory (Arthur, 2000).

Validation of the instrument was conducted to know whether the instrument capable of collecting the data or not. The writer got the standard coefficient validity minimum for this instrument with $N = 40$ and a coefficient significance level of 5%. The coefficient validity is 0,312. To see the validity instrument, the writer did it through the SPSS statistics program version 26.0. There were 20 questions that the writer used for validation. The Author used the SPSS statistics program version 26.0 to get the reliability of the questionnaire the result can be seen below:

Scheme 1. The Reliability Test

From the result, it can be seen that Cronbach's Alpha = 0,770. It means this instrument is reliable because Cronbach's Alpha > 0,6. After collecting the data from the questionnaire, the author analyzed it using the Pearson Product-Moment Correlation to see how strong the correlation between AI (Artificial Intelligence) and students' speaking performance is.

Minimum	58
Maximum	85
Sum	2859

To see the result of students' speaking performance scores, the writer made a table as below:

Scheme 3. Students' Speaking Performance Score

	Frequency	Category
80-100	7	High
73-79	14	Medium
<73	19	Low, below KKM

C.Finding and Discussion

The statistical result of students' speaking performance scores, the author made the table as follows:

Scheme 2. The Statistical Score of Spoken Test

Statistics		
Speaking Performance		
N	Valid	40
	Missing	0
Mean		71.47
Std. Error of Mean		1.245
Median		74.00
Mode		74
Std. Deviation		7.877
Variance		62.051
Skewness		-.114
Std. Error of Skewness		.374
Kurtosis		-1.291
Std. Error of Kurtosis		.733
Range		27

The table of results shows that 19 students achieved a low score in speaking performance, while three students received a medium score. None of the students obtained a high score. This indicates that the majority of the students scored low on the speaking performance tests according to the KKM standards.

To verify the normality of the test results, SPSS version 26.00 was used. This statistical software helped determine whether the data populations were normally distributed. The analysis provided insights into the distribution of the students' scores, confirming that most students did not perform well in their speaking assessments.

These findings suggest a significant challenge in the students' speaking abilities, with only a few reaching even a medium level of proficiency. The lack of high scores underscores the need for targeted interventions to improve speaking performance among these students. Addressing this issue may require a review of the current teaching methods, additional support for students, or integrating new strategies to enhance their speaking skills.

Overall, the results highlight the need for focused efforts to raise the speaking performance levels of the students. The use of SPSS to assess the normality of the data ensures that the conclusions drawn are based on a reliable analysis of the test scores.

Scheme 4. The normality of the test results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		40
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	7.61145683
Most Extreme Differences	Absolute	.083
	Positive	.083
	Negative	-.083
Test Statistic		.083
Asymp. Sig. (2-tailed)		.200 ^{c,d}
a. Test distribution is Normal.		

b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

The significance value from the normality test is 0.200, which is greater than 0.5. This indicates that the residual value follows a normal distribution.

The linearity of the tests was verified to determine if the relationship between the two variables is linear or non-linear. The data was analyzed using SPSS version 26.00.

The significance value of deviation from linearity in the data was 0.589, indicating a good linear regression because it exceeded the threshold of 0.05, signifying that the data distribution was linear.

To see whether there is a correlation between artificial intelligence (AI) and students' speaking performance, the writer used the SPSS version 26.00 program to analyze the data and it can be seen from the table:

Scheme 5. Correlation Between AI and Students' Speaking Performance

Correlations			
		artificial intelligence (AI)	speaking performance
artificial intelligence (AI)	Pearson Correlation	1	-.258
	Sig. (2-tailed)		.109
	N	40	40
speaking performance	Pearson Correlation	-.258	1
	Sig. (2-tailed)	.109	
	N	40	40

From the calculation above, the author found that the total correlation coefficient (r_{xy}) is $-.258$, with a significance level (N. sig) of $.109$. Comparing the t-value (tcount) to the critical t-value (ttable), we see that tcount is less than ttable ($-.258 < 0.312$). This result indicates that the null hypothesis is accepted, showing no significant correlation.

To elaborate, the correlation coefficient of $-.258$ suggests a weak negative relationship between the variables, implying that as one variable increases, the other tends to decrease slightly. However, the significance level of $.109$, which is greater than the commonly accepted threshold of $.05$, indicates that this correlation is not statistically significant. This means that any observed relationship is likely due to chance rather than a true underlying association between the variables.

The acceptance of the null hypothesis in this context implies that there is no meaningful relationship between the variables being studied.

In this case, the variables are likely the use of Artificial Intelligence (AI) in the EFL classroom and students' speaking performance. The findings suggest that the implementation of AI tools does not have a measurable impact on improving students' speaking skills in the English language.

Moreover, the study underscores the importance of considering other factors that might influence speaking performance, such as the quality of instruction, the design of the AI tools, and individual differences among students. These elements can play significant roles in determining the success of AI integration in language learning.

For educators, this finding suggests that while AI tools can be a valuable addition to the classroom, they should not be relied upon exclusively. Effective language teaching likely requires a combination of traditional methods and innovative technologies, tailored to meet the diverse needs of students. Teachers should focus on creating interactive and engaging learning environments that incorporate AI tools in meaningful ways.

For policymakers and educational institutions, the study highlights the importance of supporting ongoing research and development in the field of AI in education. Investments should be made in high-quality AI tools that are designed based on solid educational principles and tested rigorously in classroom settings. Additionally, professional development opportunities should be provided for teachers to help them effectively integrate these tools into their teaching practices.

In conclusion, the findings of this study indicate no significant correlation between the use of AI tools and students' speaking performance in EFL classrooms. This calls for a more thoughtful and evidence-based approach to the adoption of AI in education, emphasizing the need for further research and comprehensive teacher training to maximize the potential benefits of AI while addressing its limitations..

This study aimed to investigate the correlation between the use of Artificial Intelligence (AI) in the English as a Foreign Language (EFL) classroom and students' speaking performance. The study was

conducted at the English Department of Universitas Islam Negeri Fatmawati Sukarno (UINFAS) in Bengkulu, Indonesia. The results of this study provide insights into the effectiveness of AI in enhancing students' speaking skills in an EFL setting.

This research uses two instruments to collect data from students. The first instrument is questionnaire and second instrument is a student spoken test. The author analyzed the correlation between Artificial Intelligence (AI) and students' speaking performance by using SPSS 26, the result was $-.258$ with $N. sig = .109$, where significance is $< 0,05$. As a result, the alternative hypothesis is rejected and the null hypothesis is accepted because there is no significant correlation between two variables.

The primary objective of this study was to explore and analyze the relationship between the utilization of Artificial Intelligence (AI) tools in the English as a Foreign Language (EFL) classroom and the speaking performance of students. This investigation took place within the English Department of Universitas Islam Negeri Fatmawati Sukarno (UINFAS), which is located in

Bengkulu, Indonesia. The findings from this research endeavor aim to offer valuable insights into how effective AI tools can be in enhancing the speaking abilities of students in an EFL context.

To achieve the objectives of this study, two distinct instruments were employed to gather data from the participating students. The first instrument utilized was a questionnaire, which was designed to collect comprehensive information regarding the students' experiences and perceptions of using AI tools in their language learning process. The second instrument was a spoken test administered to the students to objectively measure their speaking performance. The combination of these two instruments was intended to provide a holistic understanding of the impact of AI tools on students' speaking skills.

For the data analysis, the writer employed the Statistical Package for the Social Sciences (SPSS) version 26. The correlation between the use of Artificial Intelligence (AI) and students' speaking performance was calculated using this statistical software. The analysis yielded a correlation coefficient of $-.258$, with a significance

level (N. sig) of $.109$. According to standard statistical conventions, a significance level of less than 0.05 is required to reject the null hypothesis. In this study, since the significance level was greater than 0.05 , the alternative hypothesis was rejected, and the null hypothesis was accepted. This statistical result indicates that there is no significant correlation between the use of AI tools and the speaking performance of students in this specific EFL context.

The findings of this study challenge the prevalent assumption that AI tools are inherently beneficial for enhancing students' speaking performance in the EFL classroom. Contrary to popular belief, the results suggest that AI tools may not play a crucial role in improving students' speaking abilities. Several factors could potentially explain this unexpected outcome. One possible reason is the limited exposure that students might have had to AI tools. If students have not had sufficient time or opportunity to engage with these tools, their potential benefits may not have been fully realized.

Another factor to consider is the effectiveness of the integration of AI tools into the classroom setting. The

mere presence of AI tools does not guarantee their effective use. The success of such tools largely depends on how well they are integrated into the teaching and learning process. If the integration is superficial or lacks depth, the tools may not have the desired impact on students' speaking performance.

Individual differences in students' learning styles and preferences also play a significant role in the effectiveness of AI tools. Each student has unique ways of learning and responding to different educational technologies. AI tools that may work well for one student might not necessarily be effective for another. Therefore, the variability in students' learning preferences could contribute to the overall ineffectiveness of AI tools observed in this study.

Furthermore, it is essential to consider the quality and nature of the AI tools used in the study. Not all AI tools are created equal, and their effectiveness can vary widely depending on their design, functionality, and ease of use. If the AI tools used in this study were not of high quality or were not user-friendly, their potential to enhance speaking

performance might have been compromised.

The findings of this study underscore the importance of critically evaluating the role of AI tools in language education. While AI has the potential to offer innovative solutions and support for language learning, its effectiveness is not guaranteed and can vary depending on a multitude of factors. Educators and researchers should consider these factors when integrating AI tools into the EFL classroom and remain open to exploring alternative methods and approaches to enhance students' speaking performance.

E. Conclusion

In conclusion, while the study at UINFAS Bengkulu found no significant correlation between AI usage and students' speaking performance, it provides valuable insights into the complexities of integrating AI into language learning. The findings highlight the need for targeted teacher training, the development of tailored instructional materials, and ongoing research to explore the full potential of AI in education. By addressing these areas, educators and policymakers can work towards more effective and

meaningful use of AI tools, ultimately enhancing language learning outcomes for students.

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