The Effect of Using AI Applications in Improving English Reading Skills of Students at MA Al Ishlahiyah Binjai

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ABSTRAK

Penelitian ini merupakan penelitian kuantitatif populasi dalam penelitian ini adalah seluruh Populasi dalam penelitian adalah seluruh siswa MA Al Ishlahiyah Binjai yang berjumlah 140 orang. Sampel dalam penelitian adalah mengacu pada taraf kesalahan 5 %. Sampel dalam penelitian ini adalah 100 orang. Variabel dalam penelitian ini terdiri dari Aplikasi AI sebagai variabel X dan Kemampuan membaca bahasa inggris siswa sebagai variabel Y. Hasil penelitian menunjukkan bahwa (1) Nilai persentase aplikasi AI siswa di MA Al Ishlahiyah Binjai adalah P = 84,4 %. Berdasarkan hasil yang diperoleh di atas dapat diketahui bahwa aplikasi AI di MA Al Ishlahiyah Binjai dapat dikatakan sangat sangat baik. (2) Nilai persentase kemampuan membaca bahasa inggris adalah sebesar 83,07 %. Berdasarkan hasil yang diperoleh di atas dapat diketahui bahwa kemampuan membaca bahasa inggris siswa di MA Al Ishlahiyah dapat dikatakan sangat baik. (3) Terdapat pengaruh yang signifikan antara aplikasi AI terhadap kemampuan membaca bahasa inggris siswa di MA Al Ishlahiyah Binjai dengan *Adjusted R Square* 0,822 berarti 82,2%. Sedangkan 17,8% (100%-82,2%) dijelaskan oleh faktor lain yang tidak diteliti oleh peneliti. Berdasarkan penelitian ini menunjukkan besarnya nilai t_{hitung} variabel aplikasi AI adalah 11,633 lebih besar dari t_{tabel} yaitu 2,048 atau 11,633 > 2,048 dan signifikan pada 0.000 maka dapat disimpulkan bahwa vaiabel aplikasi AI berpengaruh secara signifikan terhadap kemampuan membaca bahasa inggris siswa di MA Al Ishlahiyah Binjai karena nilai signifikannya dibawah 0.05.

Keyword: Analisis AI; Kemampuan Bahasa Inggris; Membaca

ABSTRACT

This research is quantitative research. The population in this research is the entire population in the research is all MA Al Islahiyah Binjai students, totaling 140 people. The sample in the research refers to an error level of 5%. The sample in this study was 100 people. The variables in this research consist of AI applications as variable X and students' English reading ability as variable Y. The research results show that (1) The percentage value of students' AI applications at MA Al Islahiyah Binjai is P = 84.4%. Based on the results obtained above, it can be seen that the AI application at MA Al Islahiyah Binjai can be said to be very, very good. (2) The percentage value of English reading ability is 83.07%. Based on the results obtained above, it can be seen that the English reading ability of students at MA Al Islahiyah can be said to be very good. (3) There is a significant influence between AI applications on students' English reading ability at MA Al Islahiyah Binjai with Adjusted R Square 0.822 meaning 82.2%. Meanwhile, 17.8% (100%-82.2%) was explained by other factors not examined by researchers. Based on this research, it shows that the t-count value of the AI application variable is 11.633, which is greater than t table, namely 2.048 or 11.633 > 2.048 and is significant at 0.000, so it can be concluded that the AI application variable has a significant effect on students' English reading ability at MA Al Islahiyah Binjai because of its significant value. below 0.05.

Keyword: AI Analysis; English Ability; Reading

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1.   INTRODUCTION

Learning in schools and colleges has experienced a major shift in the last five years. This is the result of progress in the industrial revolution 4.0 and the Covid-19 pandemic (Dhawan 2020). Changes in people's lifestyles occurred in the 4.0 era or better known as the digital era (Fathira, Zuriati, and Maspufah, 2023). Face-to-face learning must be combined with technology, especially artificial intelligence (AI), which allows personalized learning for students. Each student has different abilities and learning styles, and AI can help recognize these differences and provide learning experiences that can be tailored to individual student needs and characteristics (Roll and Wylie 2016). Apart from that, AI is also able to provide interesting learning content that best suits students' needs (Luckin et al. 2016).

In today's digital era, the education sector has witnessed a significant transformation through the integration of Artificial Intelligence (AI). With its potential to revolutionize various sectors, AI has emerged as a promising tool in enhancing the teaching and learning experience. English language teaching, in particular, faces many challenges in meeting the needs of diverse learners. Therefore, exploring the effectiveness of AI in English language teaching becomes very important to reveal new opportunities in language education.

Several research results have been conducted related to the use of AI in English lessons, namely by Abimanto and Mahendro (2023) where the results of their research show a significant increase in listening, speaking, reading and writing skills after using AI. These findings support the effectiveness of using AI in language learning. Furthermore, research conducted by Subiyantoro et al. (2023) said that the emergence of artificial intelligence (AI) technology has created opportunities and challenges for teaching and learning English. AI has transformed English language teaching in higher education. English lecturers use various types of AI for various purposes, asking and solving questions and checking grammatical errors, checking plagiarism, paraphrasing, and reviewing literature. The research also reveals that AI has various benefits for language teaching and learning, including the detection of plagiarism and grammatical errors. Additionally, AI has created opportunities and challenges for the future of English language teaching (Chapelle and Sauro 2017).

The history of AI in education shows ongoing efforts to harness smart technology for educational purposes. As quoted by Siemens (2013), "AI has a rich history in education, marked by milestones in smart tutoring systems, adaptive learning, and personalized instruction." This historical overview highlights the continuous evolution of AI in education and paves the way for exploring its particular applications in English language teaching.

This research aims to see and fill the gap at Madrasah Al Islahiyah Binjai by studying the effectiveness of AI in teaching English. By analyzing existing literature and conducting empirical research, this study seeks to provide an understanding of the impact of AI on language skills, student engagement, providing feedback, and meeting the needs of diverse learners. The novelty of this research lies in its comprehensive investigation of the specific contribution of AI in English language teaching, providing valuable insights for language educators, educational institutions, and policy makers.

In this research, it is hoped that it can present useful findings based on analysis of the data collected. Next, we will explain in detail the findings and analysis regarding the effectiveness of AI in teaching English, as well as its comparison with traditional methods. This research will also discuss the implications of these findings for language educators and educational institutions, as well as the challenges and limitations associated with the use of AI in English language teaching. Apart from that, this research will also provide direction for further development and potential areas that can be improved in the use of AI in English education at Madrasah Al Islahiyah Binjai.

2.   RESEARCH METHOD

This research began with the design of a structured quantitative research method, aimed at measurably exploring the impact of students' use of artificial intelligence (AI) in the context of completing English language assignments. The initial stage involves formulating clear and measurable research objectives. The research objective was designed to quantitatively assess the impact of students' use of AI on time efficiency in completing school assignments and improving the quality of homework results.

Data is collected through a variety of methods, including surveys to measure assignment quality, efficiency of assignment completion, and students' understanding of the use of artificial intelligence. This data collection ensures comprehensive information acquisition. The collected results then undergo a testing and validation process. Artificial intelligence algorithms are tested in situations that represent real conditions and validated to ensure their performance meets the research objectives. In addition, the validity of the survey instrument was also checked through a validity test. By applying rigorous quantitative methodology, this research can provide an in-depth and measurable understanding of the impact of students' use of AI in completing English language assignments. This approach supports the generalization of research results and provides a significant contribution in the context of education in madrasas.

3. RESULTS AND DISCUSSION

A. *AI Application Description*

The researcher summarized the description of the research data as follows:

Table 1. Summary of Research Data Description for Variable

No	statistic value	X	Y
1	amount	6758	6646
2	Maximum score	79	79
3	Minimum score	53	53
4	average	67,58	66,46
5	Standard Deviesion	5,29	5,42

Based on the collected education variable score data, it spreads from 53 to 79 with an average value of 67.58 and a standard division of 5.29. To get a clearer picture of the distribution of mentoring activity variable data, see the table below.

Table 2. Variable X (AI Application)

No	Absolute frekuensi	Class interval	Relative frekuensi
1	50-55	3	3%
2	56-65	34	34%
3	66-75	50	50%
4	76-85	13	13%
5	86-100	-	-
	Jumlah	100	100%

To see how big the percentage is in variable X (AI application) use the formula:

P = F/N x 100% 　　　　　　　　　　　　　　　　　　　　　　　　　　　(1)

Information:

P = Percentage

F = Frequency

N = Nominal (Number of Samples x Number of Items x Maximum Value)

Thus, P = 6758/8000 x 100%

　= 84.4 %

Based on the results obtained above, it can be seen that the AI application activities at MA Al Islahiyah Binjai can be said to be very, very good.

B. *English Language Skills*

Table 3. Variable Y

No	Class Interval	Absolut frekuensi	Relatif frekuensi
1	50-55	3	3%
2	56-65	46	46%
3	66-75	46	46%
4	76-85	5	5%
5	86-100	-	-
	Amount	100	100%

To see how big the percentage is in variable Y (Students' English Ability) the formula is used:

P = F/N x 100% 　　　　　　　　　　　　　　　　　　　　　　　　　　　(2)

Information:

P = Percentage

F = Frequency

N = Nominal (Number of Samples x Number of Items x Maximum Value)

Thus, P = 6646/8000 x 100% = 83.07%

Based on the results obtained above, it can be seen that the English language skills of students at MA Al Islahiyah Binjai can be said to be very good.

To determine the level of normality of variable X and variable Y, the Lilifors normality calculation formula can be used. With that, it can be calculated using the following formula:

Information:

$$a = \frac{(\Sigma y)(\Sigma x^2) - (\Sigma x)(\Sigma xy)}{n.\Sigma x^2 - (\Sigma x)^2}$$

$$a = \frac{(6402)(531076) - (6428)(528219)}{(78)(531076) - 41319184}$$

　= 66,45

C. Hypothesis Testing

The determination test (R2) is measuring how well the model is able to explain the independent variables. If R2 gets bigger, then it can be said that the influence of the independent variable on the dependent variable is more independent. On the other hand, if R2 gets smaller, it can be said that the influence of the independent variable on the dependent variable is getting smaller. As can be seen in the following table:

Table 4. Determinasi R^2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.910[a]	.829	.822	1.261

From the table above using SPSS version 25 it can be seen that
a) R = 0.910 means the ability to explain AI application variables on students' English language skills at MA Al Islahiyah Binjai is good because the value is close to one.
b) Adjusted R Square 0.822 means that 82.2% of the factors influencing students' English language skills at MA Al Islahiyah Binjai can be explained by the mentoring activities carried out. Meanwhile, 17.8% (100%-82.2%) was explained by other factors not examined by researchers.

The t statistical test is used to test whether there is an influence of each independent variable (mentoring activities) on the dependent variable (student moral formation). By using the following steps:

Ho: b = 0

This means that partially there is no positive and significant influence from the independent variable on the dependent variable.

Ha: b ≠ 0

This means that partially there is a positive and significant influence from the independent variable on the dependent variable.

Ho is accepted if tcount < ttable at α = 0.05
Ha is accepted if tcount > ttable at α = 0.05

The results of the t statistical test can be seen in the table below:

Table 5. Uji T

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.298	2.712		.847	.404
	Aplikasi AI	.904	.078	.910	11.633	.000

Dependent Variable: Students' English Ability

Based on the table above, it can be seen that the value of t calculated for the mentoring activity variable is 11.633, which is greater than t table, namely 2.048 or 11.633 > 2.048 and is significant at 0.000, so it can be concluded that the AI application variables have a significant effect on students' English language skills at MA Al Islahiyah Binjai because the significant value is below 0.05.

4. CONCLUSION

Based on the research results obtained, the following conclusions can be drawn from this research:
1. The percentage value of students' AI applications at MA Al Islahiyah Binjai Rejo is P = 84.4%. Based on the results obtained above, it can be seen that the AI application at MA Al Islahiyah Binjai can be said to be very, very good.
2. The percentage value for the formation of English reading skills at MA Al Islahiyah Binjai is 83.07%. Based on the results obtained above, it can be seen that the students' English reading ability at MA Al Islahiyah Binjai can be said to be very good.
3. There is a significant influence between AI applications on students' English reading ability at MA Al Islahiyah Binjai with Adjusted R Square 0.822 meaning 82.2%. Meanwhile, 17.8% (100%-82.2%) was explained by other factors not examined by researchers. Based on this research, it shows that the t-count value of the AI application variable is 11.633, which is greater than t table, namely 2.048 or 11.633 > 2.048 and is significant at 0.000, so it can be concluded that the AI application variable has a significant effect on students' English reading ability at MA Al Islahiyah Binjai because of its significant value. below 0.05.

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