TRANSFORMATIONAL LANGUAGE, LITERATURE, AND TECHNOLOGY OVERVIEW IN LEARNING (TRANSTOOL)

THE IMPACT OF USING AI-BASED LANGUAGE LEARNING PLATFORMS ON ENGLISH SPEAKING SKILLS OF COLLEGE STUDENTS

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Abstract

The integration of artificial intelligence (AI) in language learning has created new opportunities to enhance the quality and personalization of educational experiences. This study aims to explore the impact of using AI-based language learning platforms on the English-speaking skills of college students. The research employs a quasi-experimental design with two groups: a control class using conventional learning methods and an experimental class using AI-based learning platforms. The research population consists of students from University X, with a sample of 32 students in the experimental class and 34 students in the control class. Data were collected through pre-tests, treatment, and post-tests. The results indicate a significant improvement in English speaking skills in the experimental group compared to the control group. Data analysis shows that AI-based learning platforms are effective in enhancing speaking skills, particularly due to the interactive features and adaptive feedback provided by the platforms. These findings suggest that the use of AI technology in language learning can yield better results compared to traditional methods, supporting further integration of this technology in language education.

Keywords: *AI-Based Language Learning, English Speaking Skills, Proficiency*

1. INTRODUCTION

The integration of artificial intelligence (AI) in language learning has gained significant attention in recent years, as it presents new opportunities to enhance the quality and personalization of educational experiences (Obari et al., 2020). Research by Dr. Rashmi (2023) indicates that AI-based platforms can offer tailored feedback and adaptive learning pathways, which are crucial for developing speaking proficiency among students, effectively addressing individual learning needs more than traditional methods can. These AI platforms create interactive environments that stimulate communicative practice, allowing learners to engage in real-time conversations and receive immediate corrections, leading to substantial improvements in their overall speaking abilities (Rusmiyanto et al., 2023). The personal nature of these tools has been shown to significantly boost student motivation and engagement, as users can practice speaking in a safe and supportive context, enhancing their confidence and reducing anxiety associated with language use in real-world scenarios (Rusmiyanto et al., 2023). Additionally, the dynamic interaction between students, AI software, and the learning environment is key to fostering a deeper understanding of linguistic nuances and practical applications in oral communication, aligning with the essential skills required for 21st-century learners in diverse and rapidly changing contexts (Jia et al., 2022).

Although the potential of AI-based language learning platforms has been well-documented, there are also important considerations related to privacy, transparency, and the need for adequate teacher preparation to ensure effective integration of this technology in educational settings. To address these issues, it is crucial to implement strong data protection measures and inform users about how their information is used, as well as provide professional development for educators to effectively guide students in navigating these AI tools while maintaining a balance between technology and human interaction (Woo & Choi, 2021). While AI-based language learning platforms offer promising advancements for improving English proficiency, careful consideration and proactive measures are needed to mitigate potential drawbacks, ensuring that these tools benefit all learners fairly and effectively in their language acquisition journey. Furthermore, further research is needed to strengthen the pedagogical impact of AI language tools, as understanding their effectiveness from the perspectives of both teachers and students will provide valuable insights for better implementation strategies in educational practice.

Studies by Rusmiyanto et al. (2023) and Woo & Choi (2021) focuses on comprehensive data collection related to feedback and student learning outcomes, as this will inform the design of AI features that align more closely with pedagogical goals, thereby enhancing the overall effectiveness of these platforms in improving students' English speaking skills. Additionally, the evolving nature of AI technology necessitates ongoing dialogue between educators, developers, and researchers to ensure that platforms not only meet pedagogical standards but also address specific linguistic challenges faced by students, ultimately creating a more effective and inclusive language learning ecosystem. This collaborative approach will enable a deeper understanding of how technology can be leveraged to support language learning and the potential adjustments needed to maximize interaction and inclusivity in the learning experience, ensuring that all students have equal opportunities to succeed in their English language development (Rusmiyanto et al., 2023; Woo & Choi, 2021). Effective use of AI-based platforms requires educators to stay informed about technological advancements and adjust their teaching strategies to better support the integration of these tools into language learning, highlighting the importance of professional development opportunities aimed at equipping teachers with the knowledge and skills needed to guide students in effectively navigating these AI-driven resources.

While the potential of AI technology in education has been widely discussed, this study provides new contributions by combining empirical analysis of how these platforms specifically affect speaking skills. This research not only addresses the effectiveness of AI in learning but also relates it to student engagement in the learning process. The findings of this study can offer valuable insights for developing more adaptive and effective educational strategies tailored to individual learners' needs in the digital age.

2. RESEARCH METHODS

This study falls under quasi-experimental research. In quasi-experimental research, two classes are required: a control group and an experimental group. The control group is subjected to conventional teaching methods, while the experimental group employs the traditional teaching model. The population for this study consists of students from

University X. The sample includes 32 students from the experimental group and 34 students from the control group.

Table 1. Research Design

Group	Pre-Test	Treatment	Post-Test
Control	1	X_1	2
Experiment	3	X_2	4

Description:
Control X_1 : The group that does not receive treatment with the AI-based learning platform.
Experiment X_2 : The group that receives treatment with the AI-based learning platform.
1 : Pre-test scores for the control group.
2 : Post-test scores for the control group.
3 : Pre-test scores for the experimental group.
4 : Post-test scores for the experimental group.

Primary data in this study includes student learning outcomes obtained through a series of tests. These tests consist of a trial test, pre-test, treatment, and post-test. Secondary data in this study includes information related to respondent profiles, the frequency and duration of the use of the AI-based language learning platform by respondents, and students' perceptions of the effectiveness of the AI-based learning platform. The data collection techniques used in this study are interviews and observations.

3. RESULTS AND DISCUSSION

3.1. Results

The research investigates the impact of using an AI-based language learning platform on students' English-speaking skills. The study was conducted in both control and experimental classes, starting with pre-tests and followed by post-tests.

Table 2. Respondent Profile Data

Proficiency Level	Total Respondent
Basic	18
Intermediate	22
Advanced	26
Total	66

Based on the data in Table 1, the English proficiency levels of respondents show that the majority have advanced proficiency, with a total of 26 individuals, or approximately 39% of the 66 respondents. This is followed by 22 respondents, or about 33%, who have intermediate proficiency, and 18 respondents, or around 27%, who are at

the basic level. This distribution indicates that most respondents already possess a fairly high level of English proficiency, with a significant proportion also demonstrating developing proficiency. The comparison between the advanced and intermediate groups reveals a noticeable gap in English proficiency, while the basic level still represents a significant group, indicating the need for additional support to improve English skills in this group. Overall, this data provides a clear picture of English proficiency distribution among respondents, which can serve as a basis for planning more effective training programs or interventions.

Table 3. The Number of Respondents Based on The Frequency of Using AI-Based Language Learning Platforms Per Week and The Duration of Use Per Week

Frequency of Using (Per Week)	Frequency of Using (Hour/ Week)	Total Respondent
1-2 times	1-2 hours	10
1-2 times	3-4 hours	8
3-4 times	1-2 hours	12
3-4 times	3-4 hours	15
5-6 times	1-2 hours	6
5-6 times	3-4 hours	7
7 times or more	1-2 hours	5
7 times or more	3-4 hours	5
7 times or more	5 hours or more	5
Total		66

From the total 66 respondents, the majority tend to use the AI-based language learning platform 3-4 times per week, totaling 27 individuals, indicating a significant level of engagement with the technology. In terms of usage duration, the largest group consists of respondents who use the platform for 3-4 hours per week, amounting to 23 people, showing that they spend a relatively long time each week learning English. Low-frequency users, at 1-2 times per week, with a shorter duration (1-2 hours), involve 10 people, suggesting that this group may be new to or less intensive in using the platform. Conversely, high-frequency use, such as 7 times or more per week, combined with longer durations (3-4 hours or even more than 5 hours), involves 10 people, indicating a very high level of involvement and serious commitment to improving their English skills. This reflects a range of usage patterns, showing that while most respondents actively use the platform with moderate frequency and duration, there is also a significant group using it intensively.

Table 4. Student Perceptions of the Effectiveness of AI-Based Learning Platforms

No	Criteria	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Platform helps understand the material	25	30	7	3	1
2	Platform increases learning motivation	20	28	10	6	2
3	Platform is easy to use	18	32	10	4	2
4	Platform provides relevant material	22	29	10	4	1
5	Platform is effective for speaking practice	24	26	11	4	1

From a total of 66 respondents, the results show that the majority of students have a positive perception of various aspects of the platform. Most respondents agree that the platform helps them understand the material well, with 55 respondents (25 strongly agree and 30 agree) giving positive evaluations, while only 4 respondents disagree or strongly disagree. In terms of increasing learning motivation, 48 respondents (20 strongly agree and 28 agree) felt a positive impact, although 8 respondents were less agreeable. The ease of use of the platform was also well-rated by 50 respondents (18 strongly agree and 32 agree), with only 6 respondents showing dissatisfaction. The platform was also considered effective in providing relevant material by 51 respondents (22 strongly agree and 29 agree), while 5 respondents gave negative evaluations. Finally, the effectiveness of the platform for speaking practice was supported by 50 respondents (24 strongly agree and 26 agree), with only 5 respondents showing disagreement. Overall, the data indicates that the AI-based learning platform is well-received by students, particularly in terms of ease of use and relevance of material, though there are some areas that still need further attention to enhance its effectiveness.

Table 5. t-Test for Pre-Test Scores of Controls and Experimental Classes

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Value	Equal variances assumed	3.145	.004	2.851	64	.005	6.7831	2.3794	2.0296	11.5366
	Equal variances not assumed			2.963	63.781	.005	6.8824	2.3792	2.0297	11.5365

Source: Processed Data, 2023

Based on the table above, it can be seen that the t-value for the pre-test in the control class is 2.851, while the t-value for the experimental class is 2.963. This indicates that the pre-test t-value for the experimental and control classes are comparable. Therefore, it can be concluded that the students' abilities before the intervention were similar.

Table 6. t-Test for Post-Test of Control and Experimental Classes

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Value	Equal variances assumed	1.141	.003	3.803	64	.000	6.8915	1.8123	3.2710	10.5121
	Equal variances not assumed			3.800	63.504	.000	6.8915	1.8040	3.2870	10.4961

Source: Processed Data, 2023

Based on Table 6, it can be seen that the calculated t-value for the post-test in the control class is 3.800, while the calculated t-value for the experimental class is 33.800. This indicates that the t-value for the experimental class is significantly higher than that for the control class. Therefore, it can be concluded that the experimental class, which used the AI-based learning platform, showed better performance compared to the control class. This suggests that the AI-based learning model was more effective than the conventional method used in the control class.

3.2. Discussion

Based on the t-test results presented in Tables 4 and 5, there is a significant difference in students' English-speaking ability between the control and experimental groups before and after the treatment. At the pre-test stage, the t-value for the control group is 2.851, while for the experimental group, it is 2.963. These values indicate that both groups had similar initial abilities before the intervention. In other words, there was no significant difference in English speaking ability between the two groups at the start of the study.

However, this difference became significant after the treatment was administered. At the post-test stage, the t-value for the experimental group, which used the AI-based learning platform, is 33.800, whereas the control group, which did not receive the treatment, showed a much lower t-value of 3.803. This difference indicates that the experimental group experienced a more substantial improvement in English speaking ability compared to the control group.

Furthermore, these results suggest that the use of AI-based learning platforms has a significant impact on enhancing English speaking skills. The platform may provide more interactive and adaptive learning methods, allowing students to practice in a more relevant and individualized manner. In contrast, the conventional learning methods used

in the control group did not offer the same level of improvement, indicating that traditional approaches may be less effective in enhancing English speaking skills.

Thus, the findings support the argument that integrating technology, particularly AI-based platforms, into the learning process can yield better outcomes compared to traditional methods. The use of AI-supported learning platforms has become increasingly common in English language education, with more research demonstrating its significant impact on improving students' speaking abilities. This is largely due to the platform's ability to offer personalized learning experiences and immediate feedback, which are crucial factors in developing effective communication skills in a second language (Zhang et al., 2020). Additionally, the integration of advanced speech recognition technology in AI systems enables real-time assessment of pronunciation and fluency, allowing students to practice and refine their speaking skills in a supportive environment (Chen et al., 2022).

Additionally, the use of chatbots has been shown to improve language skills, with students reporting positive perceptions of these tools as supplementary aids in their learning process. While the potential of AI in English language teaching is widely recognized, it is crucial to ensure proper implementation to maximize benefits and address any limitations (Akbarani, 2023). Overall, AI-based platforms represent a transformative approach to enhancing English speaking skills, offering personalized and immediate feedback that may be lacking in traditional methods.

Consistent with research by Rusmiyanto et al. (2023), which states that AI-based learning platforms can adjust to individual learning speeds and styles, creating a more engaging and tailored learning experience. Immersive technologies like virtual reality also have the potential to create realistic conversation scenarios, enhancing students' speaking skills and comfort (Chen et al., 2022; Obari et al., 2020). Despite challenges, evidence suggests that these technologies can improve student performance in speaking assessments compared to traditional learning methods (Nanduri & Bonsignore, 2023; Rusmiyanto et al., 2023). AI-driven tools also provide personalized feedback and collaborative learning experiences, helping students practice speaking in a supportive and dynamic environment (Obari et al., 2020; Rusmiyanto et al., 2023). Moreover, these platforms can address challenges like anxiety and lack of motivation by providing a non-judgmental space to practice, encouraging risk-taking in language use, and promoting a growth mindset.

4. CONCLUSION

This study shows that the use of an artificial intelligence (AI)-based language learning platform has a significant impact on improving students' English speaking skills. Based on the t-test results, there is a significant difference in speaking abilities between the group using the AI-based platform (the experimental group) and the group using conventional learning methods (the control group). The experimental group showed a greater improvement in speaking ability after the intervention compared to the control group.

These findings indicate that AI-based learning platforms provide more interactive, adaptive, and relevant learning methods tailored to individual needs, making them more effective in enhancing students' speaking skills. Additionally, students expressed positive

perceptions of the AI platform's effectiveness across various aspects, such as ease of use, material relevance, and speaking practice effectiveness. Therefore, integrating AI technology into English language learning can be a more effective approach compared to traditional learning methods, especially in developing speaking skills. This supports the argument that AI-supported technology, which offers direct feedback and personalized learning experiences, has the potential to significantly improve learning outcomes.

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