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

THE EFFECT OF USING AI ON STUDENTS' MOTIVATION AND ANXIETY IN LEARNING ENGLISH

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Abstract

The background of this research focuses on the growing use of artificial intelligence (AI) in the learning process, particularly in English language learning. The use of AI is expected to have a positive impact on students' motivation and anxiety. However, there are concerns that the application of this technology can also pose new challenges for students, such as increased anxiety in learning. This study aims to analyze the effect of AI on students' motivation and anxiety in learning English. This study used a quantitative method with a survey approach. Data were collected through questionnaires distributed to students involved in learning English using AI. The data analysis technique used was regression analysis to examine the relationship between the use of AI and students' motivation and anxiety levels. The results showed that the use of AI in English language learning significantly increased students' motivation. However, the study also found that the use of AI can lead to increased anxiety levels among students, especially for those who are less familiar with the technology. These findings indicate the need for a balanced approach in the implementation of AI in learning, so as to maximize the benefits without causing adverse side effects.

Keywords: *Artificial Intelligence, Student Motivation, Anxiety in Learning*

1. INTRODUCTION

As the use of artificial intelligence continues to grow in educational environments, it becomes important to understand its impact on students' motivation and anxiety in foreign language learning. Several studies have highlighted that the integration of AI technologies offers a personalized learning experience, which can increase student motivation by catering to their individual needs and preferences. Moreover, the potential benefits of AI in education, particularly in the context of language learning, suggest that such technologies can improve assessment techniques, thus providing students with timely and constructive feedback that further strengthens their motivation to engage with the material more. Conversely, concerns regarding privacy and educators' readiness to effectively integrate these technologies into their teaching practices remain significant barriers that have the potential to exacerbate student anxiety and hinder the overall learning experience (Woo & Choi, 2021).

The effectiveness of AI-based language learning tools may vary depending on the extent to which they are adapted to meet the learning styles and learning pace of individual students, indicating that while some students may thrive in these personalized conditions, other students may feel overwhelmed by the lack of human interaction or the perceived intrusion of technology into the learning process. The successful implementation of AI tools relies heavily on the availability of resources and training

provided to educators, which is critical to ensure that these technologies are utilized to their full potential without contributing to increased student anxiety through inadequate support or guidance.

The existence of algorithmic biases in AI systems can pose challenges that can lead to unequal learning opportunities, emphasizing the need for inclusivity and equity in their design and application in educational contexts (Rusmiyanto et al., 2023). Furthermore, fostering an environment that encourages open dialogue about students' experiences with AI technologies can increase their understanding and acceptance, which in turn can reduce feelings of anxiety and strengthen motivation, as this allows for the identification of potential problems and adjustments that can be made in real-time to better support students' needs. Continued collaboration between educators, technologists, and educational researchers is essential in developing AI tools that not only enhance language learning, but also prioritize students' psychological well-being (Pedro, et al., 2019), ensuring that their implementation promotes a balanced educational experience that minimizes anxiety while maximizing motivation.

Research shows that AI tools, such as speaking assistants and apps like ChatGPT, increase foreign language enjoyment (FLE) and willingness to communicate (WTC), while reducing foreign language anxiety (FLA) among learners. For example, one study found that students using AI experienced increased motivation and engagement, especially in writing and vocabulary acquisition. However, the emergence of AI anxiety stemming from concerns about job replacement and technology use may negatively impact students' behavioral intentions to engage with AI tools. Despite these challenges, the overall trend suggests that when applied effectively, AI can foster a more personalized and engaging learning environment, thereby increasing motivation and reducing anxiety. Educators are encouraged to address AI-related anxiety through supportive interventions to maximize the benefits of AI in language education.

2. RESEARCH METHODS

This research uses a quantitative approach, where data is collected, processed, and analyzed using statistical techniques to answer the hypothesis that has been set. The type of research applied is quantitative research with a quasi-experimental design, which is based on the positivism paradigm. In this study, a dual paradigm was used to examine two dependent variables, namely learning outcomes and learning motivation. The study population consisted of all grade 11 students at SMA Negeri 1, with samples taken using purposive sampling technique, involving grade 11 A as the experimental class and grade 11 B as the control class. Data were obtained from pre-test and post-test results and questionnaires, with the main data source being the students studied. The data analysis technique used is the classical assumption test, and hypothesis testing.

3. RESULTS AND DISCUSSION

3.1. Research Results

The results showed that the sample consisted of two classes from the population of grade 11 students at SMA Negeri 1. Grade 11 A included 26 students, with a gender distribution consisting of 18 females and 8 males, while grade 11 B included 25 students,

with 14 females and 11 males. This distribution reflects an almost equal gender proportion in class 11 B, but shows a greater gender imbalance in class 11 A, where there are far more female students than male. These findings provide an overview of the gender composition of the sample, which is important for further analysis of the potential influence of gender factors on the results.

Table 1. Learning Motivation t-test Group Statistics

Class		N	Mean	Std. Deviation	Std. ErrorMean	Sig. (2-tailed)
Motivation	Experimental Class	26	59.08	6.177	1.211	.000
	Control Class	25	49.96	6.445	1.289	

Based on the analysis results presented in Table 1, the t-test shows a significance value of 0.000. This significance value is clearly smaller than the significance threshold limit commonly used in research, which is 0.05 (0.000 < 0.05). In this context, a significance assessment smaller than 0.05 indicates that the results obtained are unlikely to occur by chance if the null hypothesis (Ho) is true. Thus, the alternative hypothesis (Ha) which states that there is a significant effect of the Problem-Based Learning model on student learning motivation can be accepted. Conversely, the null hypothesis (Ho) stating that there is no significant effect is rejected. This shows that the Problem-Based Learning model plays an important role in increasing students' learning motivation in English materials.

The implication of this finding is that the implementation of the Problem-Based Learning model can be an effective strategy in increasing students' engagement and passion for learning. This model, which emphasizes problem solving as the core of the learning process, appears to motivate students in a more effective way than traditional teaching methods. The use of this model can inspire students to be more active in the learning process, relate learning to real situations, and increase their satisfaction and interest in English materials.

Table 2. t-test of Learning Outcomes
Group Statistics

Class		N	Mean	Std. Deviation	Std. Error Mean	Sig. (2-tailed)
Student Anxiety	Experimental Class	26	75.58	6.217	1.219	.001
	Control Class	25	68.60	7.572	1.514	

Based on the results shown in table 2, the t-test yields a significance value of 0.001. This value is well below the commonly accepted significance level of 0.05 (0.001 < 0.05). This result leads to the rejection of the alternative hypothesis (Ha) and acceptance of the null hypothesis (Ho). In other words, the Problem-Based Learning model was shown to have a significant effect on students' classroom anxiety in English language materials.

The results of the multivariate test analysis, if the significance value (p-value) obtained is smaller than 0.05, then the alternative hypothesis (Ha) will be rejected and the null hypothesis (Ho) accepted. Conversely, if the significance value is greater than 0.05, then Ha is accepted and Ho is rejected. In this study, the multivariate test results using SPSS 16.0 showed a significance value of 0.000. This figure is much smaller than 0.05, which means Ha is rejected and Ho is accepted. In other words, this test shows that the problem-based learning model and the lecture learning model have no significant impact on students' learning motivation and learning outcomes when compared to the use of AI.

3.2. Discussion

Multivariate test results indicated that the use of AI has a significant influence on students' learning motivation and anxiety in English subjects. This indicates that the application of AI technology in English language learning can influence affective factors such as students' motivation and anxiety. These results emphasize the importance of technology integration in learning strategies to increase students' engagement and reduce the anxiety they may experience during the learning process. AI technologies, such as virtual tutors or AI-based learning applications, can provide more personalized and adaptive learning, which directly increases student motivation. Students tend to be more motivated when they feel that the material presented matches their ability and learning pace. However, on the other hand, the presence of AI can also trigger anxiety for some students (Almaiah et al., 2022), especially when they feel less familiar with the technology or when there is uncertainty about how the AI will assess their performance. This anxiety can be addressed through proper mentoring and gradual introduction of AI technology in the learning environment, so that students can adapt and feel more comfortable with its use.

The results of this study are in line with research Kim (2009) which suggests that anxiety can fluctuate depending on the course format, with higher anxiety reported in interactive contexts such as conversation courses compared to more structured environments such as reading classes, which in turn can affect students' motivation to engage effectively in language learning activities. In addition, findings Zheng & Ji (2009) suggest that while certain motivational orientations may show a negative correlation with anxiety, other forms of motivation related to the learning environment may increase anxiety levels, highlighting the complexity of the relationship between these variables in different learning contexts.

This complexity underscores the need for educators to create a supportive and engaging learning environment that fosters intrinsic motivation among students while reducing anxiety, as this dual approach can improve overall language acquisition outcomes and academic performance. Fostering an inclusive classroom atmosphere that reduces feelings of alienation and increases students' self-confidence is essential, as this can lead to increased participation and better performance, which ultimately benefits motivation and anxiety management in language learning environments (Zheng & Ji, 2009). One effective strategy is to implement interactive and communicative activities that not only engage students, but also give them the opportunity to practice their language skills in a low-stress environment, which can significantly reduce anxiety and increase their motivation to learn (Mohamad et al., 2022).

The integration of Artificial Intelligence technologies in educational settings has become a topic of increasing interest and debate. This interest stems from the potential of AI to transform traditional teaching methodologies, especially in enhancing personalized learning experiences and meeting the diverse needs of students in the language acquisition process. The adaptability of AI systems can significantly impact student motivation by providing feedback and resources tailored to individual learning pace and preferences, ultimately fostering a more engaging learning environment. Research Rusmiyanto et al (2023) shows that the use of AI tools not only supports skill development in areas such as speaking, listening, reading and writing but also has the potential to reduce anxiety levels among learners by creating a more supportive and interactive atmosphere that encourages risk-taking and active participation.

The use of AI in the classroom can also foster a more collaborative and engaging learning environment, where students can interact with intelligent tutoring systems or virtual conversational agents to practice their language skills in a less risky and risk-free environment (Rusmiyanto et al., 2023; Woo & Choi, 2021). These interactions not only improve their communication skills, but also encourage a greater willingness to participate and experiment with language, leading to increased motivation and decreased anxiety related to language learning difficulties (Rusmiyanto et al., 2023). In addition, the ability of AI tools to create immersive experiences through technologies such as virtual reality can provide students with contextualized learning opportunities that deepen their understanding and appreciation of language, further increasing motivation while decreasing anxiety as they engage with realistic scenarios in a controlled environment.

While the potential benefits of AI in English language learning are promising, it is important to note that the successful integration of these technologies requires careful planning and implementation to address issues of privacy, transparency and the role of the teacher in the learning process (Yang & Chen, 2007). As educators seek to capitalize on the advantages of AI, attention should be directed to ensuring adequate teacher training and support systems that can facilitate the effective use of these tools in the classroom, thereby improving instructional quality and student learning outcomes in language learning contexts. A balanced approach will ensure that the needs of both students and educators are met, addressing potential limitations while maximizing the advantages that AI technologies can bring to education.

In this regard, ongoing research is critical to evaluate not only the pedagogical effectiveness of AI-based language learning tools, but also to gather insights into learner perceptions and experiences, which can guide educators in making informed decisions about the integration of these technologies into their teaching practices. Moreover, as the language learning landscape continues to evolve with the integration of AI, it is imperative to identify and address challenges that may arise, such as concerns about data privacy and the need for teacher preparedness in using these advanced tools effectively (Woo & Choi, 2021).

Research Woo & Choi (2021) suggests that addressing these challenges through comprehensive professional development for educators and strong privacy policies will play an important role in leveraging the full potential of AI, ensuring that student motivation and learning outcomes are positively affected while minimizing anxiety associated with the language learning process. In conclusion, the judicious adoption of

AI in English language learning has the potential to significantly increase student motivation and reduce anxiety, provided that educators are equipped with the necessary tools and training to effectively implement these technologies in their teaching practices, building a modern and supportive learning environment that meets the diverse needs of language learners. In addition, ongoing evaluation and feedback mechanisms should be established to monitor the effectiveness of AI tools, ensuring that they remain aligned with educational objectives and evolving student needs, thus fostering an atmosphere of continuous improvement and adaptation in language learning contexts.

Ultimately, through a synergistic approach that combines the power of AI technology with the expertise of educators, we can truly maximize the benefits of these advancements, ensuring that learning experiences not only become more engaging and personalized, but also inclusive and responsive to the diverse needs of language learners. Furthermore, the integration of AI into language learning environments leads to a paradigm shift in how educators can adapt their teaching strategies, enabling a more individualized approach that recognizes and addresses the unique challenges faced by students, ultimately contributing to increased motivation and reduced anxiety in the pursuit of language proficiency.

4. CONCLUSION

This study found that the use of AI in English language learning has a significant effect on students' motivation and anxiety. In particular, the use of AI is able to increase students' motivation to learn English, because AI provides learning that is more interactive, personalized, and in accordance with the needs of each student. In addition, the use of AI also proved to be effective in reducing students' anxiety levels, especially in dealing with difficulties that are usually found in the English learning process. Thus, the integration of AI technology in education, especially in English language teaching, not only improves the quality of learning but also supports students' mental health. This conclusion confirms the importance of technology development and application in education, as well as the need to pay attention to students' psychological factors to create a more supportive and effective learning environment.

REFERENCES

Almaiah, M. A., Alfaisal, R., Salloum, S. A., Hajjej, F., Thabit, S., El-Qirem, F. A., ... & Al-Maroof, R. S. (2022). Examining the impact of artificial intelligence and social and computer anxiety in e-learning settings: students' perceptions at the university level. *Electronics*, *11*(22), 3662.

Kim, N. S. (2009). Foreign language reading anxiety on computer-based TOEIC test. *Modern Studies in English Language and Literature*, *53*(1), 19–40.

Pedro, F., Subosa, M., Rivas, A., & Valverde, P. (2019). Artificial intelligence in education: Challenges and opportunities for sustainable development.

Rusmiyanto, R., Huriati, N., Fitriani, N., Tyas, N. K., Rofi'i, A., & Sari, M. N. (2023). The role of artificial intelligence (AI) in developing English language learner's communication skills. *Journal on Education*, *6*(1), 750–757.

https://doi.org/10.31004/joe.v6i1.2990
Woo, J. H., & Choi, H. (2021). Systematic review for AI-based language learning tools. *ArXiv Preprint ArXiv:2111.04455*.
Yang, S. C., & Chen, Y. J. (2007). Technology-enhanced language learning: A case study. *Computers in human behavior*, *23*(1), 860-879.
Zheng, B., & Ji, L. (2009). Notice of Retraction: Correlation of Anxiety and Motivation in English Language Learning. *2009 International Conference on Computational Intelligence and Software Engineering*, 1–3.

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