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ATTITUDES OF PRE-SERVICE TEACHERS TOWARDS INTEGRATION OF ARTIFICIAL INTELLIGENCE IN TEACHING ENGLISH LANGUAGE: A CASE STUDY OF FEDERAL UNIVERSITY OYE-EKITI

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ABSTRACT

As Artificial Intelligence (AI) technologies become more integrated into education, it is essential to understand pre-service teachers' attitudes towards the role of AI in teaching and learning English. This study aimed to examine these attitudes, focusing on personalized learning, English language assessment, and interactive chatbots. Utilizing a cross-sectional survey design, data were collected from 152 pre-service teachers at the Federal University Oye-Ekiti using the Attitudes Toward AI in Education Questionnaire (ATAIEQ), which demonstrated good reliability ($\alpha = 0.87$). Analysis of the data included descriptive statistics and t-tests to explore gender differences in attitudes. Results indicated a generally positive attitude towards AI, particularly in personalized learning and assessment, although concerns regarding data privacy were noted. The findings revealed no significant gender differences in attitudes. This suggests a shared recognition of AI's potential among pre-service teachers. The study highlights the importance of integrating AI training into teacher education programs to enhance engagement and effectiveness in English language instruction. It is recommended that educational institutions promote awareness of AI technologies and their ethical implications to foster responsible use in teaching.

Keywords: Artificial Intelligence, Pre-service Teachers, English Language Education, Attitudes, Technology Integration.

Introduction

Artificial Intelligence (AI) has revolutionized numerous professions across various fields, transforming the way work is conducted and improving outcomes (Mossavar-Rahmani & Zohuri, 2024).). In healthcare, AI-powered diagnostic tools have enhanced disease detection and treatment planning, enabling clinicians to provide more accurate and personalized care (Oyeniyi & Oluwaseyi, 2024). For instance, AI-assisted imaging technologies have improved diagnosis accuracy in radiology, while AI-driven predictive analytics have helped identify high-risk patients and prevent hospital readmissions (Hassan & Omenogor, 2025). In finance, AI has automated trading, risk management, and compliance, increasing efficiency and reducing errors (Olanrewaju, 2025). AI-powered chatbots have also transformed customer service in various industries, providing 24/7 support and improving customer engagement (Vashishth et al.,

2024). In education, AI has facilitated personalized learning, adaptive assessments, and intelligent tutoring systems, enhancing student outcomes and teacher effectiveness (Lin et al., 2023). Moreover, AI has improved manufacturing processes, predictive maintenance, and quality control in industries such as aerospace, automotive, and energy (Lee et al., 2019). In law, AI-powered tools have streamlined document review, contract analysis, and research, increased efficiency and reducing costs (Thirumagal et al., 2024). These examples demonstrate AI's potential to drive innovation, improve productivity, and enhance decision-making across diverse professions and industries. As AI continues to evolve, its applications are likely to expand, leading to further transformations in various fields (Raj & Kos, 2023). By leveraging AI's capabilities, professionals can unlock new opportunities, drive growth, and achieve better outcomes.

Artificial Intelligence (AI) has immense potential in enhancing the teaching and learning of the English language. AI-powered tools can facilitate personalized language learning, adapting to individual students' needs, proficiency levels, and learning styles (Eduardovich, 2023). For instance, AI-driven language learning platforms like Duolingo and Grammarly provide interactive exercises, real-time feedback, and tailored recommendations, helping learners improve their reading, writing, listening, and speaking skills (Jesudas, 2025). AI-powered chatbots can engage students in conversational practice, offering opportunities for authentic language use and feedback (AbuSahyon et al., 2023). Additionally, AI-based grammar and spell checkers can assist students in refining their writing skills, while AI-driven pronunciation analysis tools can help learners improve their speaking skills (Zhang et al., 2024). AI can also aid teachers in grading, assessment, and feedback, freeing up time for more hands-on, human interaction with students (Gambo et al., 2025). Furthermore, AI-powered virtual learning environments can facilitate collaborative learning, discussion forums, and peer feedback, fostering a sense of community among language learners (Ezeanya et al., 2024). By leveraging AI's capabilities, language educators can create more effective, engaging, and student-centered learning experiences, ultimately enhancing language acquisition and proficiency (Al-Smadi et al., 2024). As AI technology continues to evolve, its applications in language education are likely to expand, offering new opportunities for innovative teaching and learning practices (Pokrivčáková, 2019).

Despite the potential benefits of Artificial Intelligence (AI) in teaching and learning, several concerns have been raised about its use across various fields. One major worry is that AI might replace human teachers, diminishing the role of educators in the classroom (Fitria, 2023). Others are concerned about the potential for AI to perpetuate biases and reinforce existing inequalities in language education, particularly if AI systems are trained on biased data sets (Mariyono et al., 2024). Additionally, there are concerns about the lack of human interaction and feedback in

AI-mediated language learning, which can lead to inadequate development of critical thinking, creativity, and social skills (Tafazoli, 2024). In English language teaching, specific concerns include the potential for AI-generated content to undermine the development of students' writing and critical thinking skills, as well as the risk of over-reliance on AI-powered tools, which might stifle students' ability to express themselves authentically (Zhai et al., 2024). Furthermore, there are concerns about the accuracy and reliability of AI-generated feedback, particularly in assessing complex language skills like writing and speaking (Liu et al., 2025). These concerns highlight the need for a nuanced approach to AI integration in language education, one that balances the benefits of technology with the importance of human interaction, feedback, and critical thinking (Mukhamedov, 2024). By acknowledging and addressing these concerns, educators and policymakers can work towards developing more effective and responsible AI-infused language education practices.

Given the concerns raised above, there is a need to understand the attitude of pre-service teachers towards the integration of AI in the teaching and learning of English language. Specifically, it is essential to investigate their perceptions of AI's role in personalized learning, language assessment, and interactive chatbots. By understanding pre-service teachers' attitudes, we can identify potential barriers and facilitators of AI adoption in language education. This knowledge can inform teacher training programs, ensuring that educators are equipped to harness AI's potential while addressing its limitations. Ultimately, understanding pre-service teachers' attitudes towards AI can help develop effective and sustainable AI-infused language education practices that support both teachers and learners. This study aims to fill this gap by exploring pre-service teachers' attitudes towards AI in English language teaching and learning.

This study was guided by the Technology Acceptance Model (TAM) developed by Fred Davis in 1989 (Davis, F. D. (1989). TAM is a theoretical framework that explains how users' attitudes and intentions to adopt technology are influenced by two key factors: perceived usefulness and perceived ease of use (Abdullah et al., 2016). According to TAM, when users perceive a technology as useful and easy to use, they are more likely to develop a positive attitude towards it, which in turn affects their behavioural intentions and actual use (Park, 2009). In the context of this study, TAM provides a lens to understand pre-service teachers' attitudes towards AI-powered personalized learning, language assessment, and interactive chatbots. Despite the growing body of research on technology adoption in education, there remains a gap in understanding the specific attitudes of pnre-service teachers towards AI integration in language teaching, a gap that this study aims to address.

Therefore, the purpose of this study is to examine the attitude of pre-service teachers towards the integration of AI in the teaching and learning of English language. Specifically, the study will:-

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1. Find out the attitude of pre-service teachers towards personalized learning using AI.
2. Investigate the attitude of pre-service teachers towards English language assessment using AI.
3. Explore the attitude of pre-service teachers towards interactive chatbots in English language teaching.

Hypothesis

The following null hypothesis was tested in this study:

H0: There is no significant difference in the attitude towards the use of AI among pre-service teachers based on their gender.

Methodology

Ethical Consideration

Approval for this research was granted by the research board of the Department of English Language Education at Federal University Oye-Ekiti. Informed consent was obtained from all participants, ensuring that they were aware of the study's purpose and their rights. Participants were assured of the confidentiality and anonymity of their responses and informed that they could withdraw from the study at any point without facing penalties. To protect anonymity, no personally identifiable information was collected, and all responses were kept confidential.

Study Design

A cross-sectional survey design was utilized to examine the attitudes of pre-service teachers toward the integration of AI in the teaching and learning of the English language. This approach was suitable for capturing a snapshot of attitudes and perceptions at a specific point in time.

Population

The target population for this research consisted of all the pre-service teachers enrolled in English language education programme at Department of English Language Education at Federal University Oye-Ekiti.

Sample and Sampling Technique

A total of 152 pre-service teachers participated in this study. A simple random sampling technique was utilized to selection this sample.

Instrument for Data Collection

Data were collected using the Attitudes Toward AI in Education Questionnaire (ATAIEQ), a researcher-designed instrument distributed via online survey platforms to facilitate easy access and prompt responses. The questionnaire consisted of four sections: Section A gathered demographic information such as age, gender, program type, and level of study. Section B assessed attitudes toward AI through questions regarding perceived usefulness, ease of use, and enjoyment. Section C evaluated engagement levels with AI tools in educational settings, while Section D focused on perceived benefits, including time-saving and improved learning outcomes. The instrument demonstrated good internal consistency reliability, with a Cronbach's alpha index of 0.87.

Method of Data Analysis

Descriptive statistics were utilized to analyze the sociodemographic characteristics of the participants and

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objectives of the study. *T*-test was conducted to test the null hypothesis that there is no significant difference in the attitude towards the use of AI among pre-service teachers based on their gender.

Results

Table 6: Sociodemographic Characteristics of Participants

Characteristic	Category	Frequency (N)	Percentage (%)
Gender	Male	60	39.5
	Female	92	60.5
Level of Study	100 Level	45	29.6
	200 Level	30	19.7
	300 Level	50	32.9
	400 Level	27	17.8
Age	16-20 years	35	23.0
	21-25 years	85	55.9
	26-30 years	25	16.4
	31 and above	7	4.6

Table 6 summarizes the sociodemographic characteristics of the participants in the study. The sample includes a higher number of female participants (60.5%, or 92) compared to males (39.5%, or 60), indicating a predominantly female demographic. In terms of academic levels, most participants are in the 100 level (29.6%, or 45), followed by 300 level students (32.9%, or 50). The representation of 400 level students is lower (17.8%, or 27), while 200 level students comprise 19.7% (30). Age distribution shows that the majority of participants are aged 21-25 years (55.9%, or 85), reflecting a young adult demographic. Participants aged 16-20 years account for 23.0% (35), with fewer in the older categories: 26-30 years (16.4%, or 25) and 31 and above (4.6%, or 7).

Table 2: Attitude of Pre-service Teachers toward Personalized Learning Using AI

Item No.	Aspect	Mean	SD	Interpretation
1	Customization of Learning Paths	4.21	0.71	Positive attitude
2	Adaptation to Individual Learning Styles	4.12	0.80	Positive attitude
3	Engagement Through Interactive Learning	3.85	0.90	Positive attitude
4	AI Support in Identifying Student Needs	3.95	0.85	Positive attitude
5	Time Efficiency in Lesson Planning	3.67	1.02	Moderately positive
6	Confidence in Implementing AI Tools	3.74	0.98	Moderately positive
7	Concerns About Data Privacy	2.98	1.10	Neutral

Table 2 presents the results of the attitudes of pre-service teachers toward various aspects of personalized learning using AI in English language teaching and learning.

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The results indicate a positive attitude, particularly regarding the customization of learning paths and adaptation to individual learning styles. While the data reflect strong support for AI's role in enhancing personalized learning, concerns about data privacy highlight the need for careful consideration in implementing these technologies.

Table 3: Attitude of Pre-service Teachers toward English Language Assessment Using AI

S/N	Aspect	Mean	SD	Interpretation
1	Accuracy of AI in Assessments	3.89	0.76	Positive attitude
2	Fairness and Objectivity of AI Results	3.65	0.92	Moderately positive
3	Speed of Feedback Provided by AI	4.02	0.81	Positive attitude
4	Reduction of Grading Workload	4.10	0.78	Positive attitude
5	User-Friendliness of AI Assessment Tools	3.50	1.01	Moderately positive
6	Concerns About AI Misinterpretation of Responses	3.00	1.12	Neutral
7	Overall Comfort with AI in Assessment	3.82	0.85	Positive attitude

Table 3 illustrates the attitudes of pre-service teachers toward various aspects of language assessment using AI in English language teaching. The results indicate a positive perception, particularly in terms of the speed of feedback and reduction of grading workload. While there is strong support for AI's effectiveness in assessments, concerns about its ability to accurately interpret responses suggest a need for further discussion and training in utilizing these tools effectively.

Table 4: Attitude of Pre-service Teachers toward Interactive Chatbots in English Language Teaching and Learning

Item No.	Aspect	Mean	SD	Interpretation
1	Engagement and Motivation in Learning	4.00	0.79	Positive attitude
2	Effectiveness in Enhancing Communication Skills	3.92	0.83	Positive attitude
3	Simulation of Real-Life Conversations	3.76	0.88	Moderately positive
4	Interest in Using Chatbots for Teaching	4.05	0.74	Positive attitude
5	Concerns About Over-reliance on Chatbots	2.85	1.09	Neutral
6	Chatbots as a Useful Supplement to Traditional Teaching	4.18	0.69	Positive attitude
7	Confidence in Integrating Chatbot Technology	3.70	0.94	Moderately positive

Table 4 shows the results of the attitudes of pre-service teachers toward various aspects of interactive chatbots in English language teaching. The results indicate a positive perception, particularly regarding their effectiveness in enhancing engagement and

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communication skills. However, the neutral score concerning over-reliance on chatbots suggests a recognition of potential limitations. Overall, the data reflect a favourable view of chatbots as valuable educational tools, indicating a strong interest in their integration into English language instruction.

Table 5: Results of Independent Samples t-Test for Attitudes toward the Use of AI Based on Gender

Table 5 presents the results of an independent sample t-test examining attitudes toward the use of AI among pre-service teachers based on gender. The mean scores indicate that female pre-service teachers have a more positive attitude (4.05) compared to their male counterparts (3.85). However, the t-value of 1.25 and p-value of 0.22 suggest that there is no significant difference in attitudes based on gender, as the p-value exceeds the conventional alpha level of 0.05. Thus, null hypothesis that there is no significant difference in the attitude towards the use of AI among pre-service teachers based on their gender.

Gender	Mean	Standard Deviation	N	t-value	p-value	Interpretation
Male	3.85	0.75	76	1.25	0.22	No significant difference
Female	4.05	0.68	76			

Discussion of Finding

This study found that pre-service teachers demonstrate a positive attitude toward personalized learning using AI, particularly in customizing learning paths and effectively adapting to individual learning styles. Prior research indicates that pre-service teachers recognize AI's potential to enhance education by tailoring content to their specific needs and preferences (Altınay et al., 2024; Merzifonluoglu & Gunes, 2025; Nyaaba et al., 2024; Ugwu et al., 2024). For instance, Altınay et al. (2024) highlight that, pre-service teachers value AI's ability to provide personalized learning experiences, reinforcing their engagement and motivation. Additionally, Nyaaba et al. (2024) found that pre-service teachers use AI tools as learning buddies and teaching assistants, which aids in accessing materials and enhancing lesson planning.

Additionally, the study reveals that pre-service teachers have a favorable perception of AI in English language assessment, particularly regarding the speed of feedback and reduced grading workload. Recent studies indicate that pre-service English teachers generally view AI positively in language education, especially for writing tasks and assessment (Nadhifah et al., 2024; Taşçı & Tunaz, 2024; Ugwu et al., 2025). AI tools are recognized as time-saving, convenient, and supportive of individualized learning, enhancing the overall teaching and learning experience (Taşçı & Tunaz, 2024). Furthermore, in exam preparation, AI can significantly improve efficiency and assist in creating diverse question types (Erdem Coşgun, 2025). Research indicates that there is no significant difference in learning outcomes between AI-generated and human-generated feedback for English language

learners, suggesting that AI can be an effective tool in language assessment (Escalante et al., 2023).

Moreover, this study found that pre-service teachers generally view interactive chatbots positively for enhancing engagement and communication skills in language education. Studies show that chatbots are perceived as useful tools for stimulating interactive communication in target languages, which is crucial for language acquisition (Yang, 2022). They also contribute to improving learners' confidence and motivation, further supporting effective language learning (Yang, 2022; Lan et al., 2023; Opele et al., 2024).). Pre-service teachers recognize the potential benefits of chatbots, such as time-saving capabilities and the provision of diverse information, which can enhance the learning experience (Yaman, 2025). Additionally, they acknowledge chatbots' role in developing responsive teaching skills, especially in noticing and questioning practices, which are vital for effective teaching (Lee et al., 2024).

Moreover, it was found that pre-service teachers' attitudes toward AI in education reveals that there is no significant difference in attitudes toward the use of AI based on gender. There are mixed prior findings in this line. While some studies found no notable gender differences in computer attitudes (Teo, 2008) or perceptions of AI (Kalnina et al., 2024; Nwani et al., 2022), other research indicated that female pre-service teachers held more positive attitudes toward AI (Merzifonluoglu & Gunes, 2025). This suggests that, despite varying perceptions, both male and female pre-service teachers generally share similar views regarding AI's role in education. Factors influencing AI acceptance include perceived ease of use, usefulness, and enjoyment, which affect all pre-service teachers irrespective of gender (Zhang et al., 2023).

Conclusion

In conclusion, this study demonstrates that pre-service teachers possess a positive attitude toward personalized learning using AI, appreciating its capacity to customize learning paths and enhance engagement. They also favor AI in English language assessment for its quick feedback and efficiency. Furthermore, pre-service teachers perceive interactive chatbots as valuable tools for improving communication skills and learner motivation. Notably, there are no significant gender differences in attitudes toward AI in education.

Recommendation

Based on the findings of this study, it is recommended that educational institutions incorporate comprehensive training programmes focused on AI tools to prepare pre-service teachers effectively. Workshops should promote awareness of AI's benefits in enhancing engagement and individualized learning while addressing ethical concerns related to data privacy and accuracy. Additionally, fostering collaborative learning environments will allow pre-service teachers to share experiences with AI tools, such as chatbots, further improving teaching practices. Regular evaluation of AI applications in education is essential to ensure they meet the evolving needs of both learners and

educators. Implementing these recommendations will maximize the advantages of AI in teacher preparation programmes

REFERENCES

Abdullah, F., Ward, R., & Ahmed, E. (2016). Investigating the influence of the most commonly used external variables of TAM on students' Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of e-portfolios. *Computers in human behavior*, *63*, 75-90.

AbuSahyon, A. S. A. E., Alzyoud, A., Alshorman, O., & Al-Absi, B. (2023). AI-driven technology and Chatbots as tools for enhancing English language learning in the context of second language acquisition: a review study. *International Journal of Membrane Science and Technology*, *10*(1), 1209-1223.

Al-Smadi, O. A., Ab Rashid, R., Saad, H., Zrekat, Y. H., Kamal, S. S. L. A., & Uktamovich, G. I. (2024). Artificial intelligence for English language learning and teaching: Advancing sustainable development goals. *Journal of Language Teaching and Research*, *15*(6), 1835-1844.

Altinay, Z., Altinay, F., Dagli, G., Shadiev, R., & Othman, A. (2024). Factors Influencing AI Learning Motivation and Personalisation Among Pre-service Teachers in Higher Education. *MIER Journal of Educational Studies Trends and Practices*, 462-481.

Davis, F. D. (1989). *Perceived usefulness, perceived ease of use, and user acceptance of information technology*. MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008

Eduardovich, K. V. (2023). Ai-Powered English Teaching: Bridging The Gap Between Technology And Language Learning. In *The XXXVI International Scientific and Practical Conference «Modern problems and the latest theories of development», September 11-13, 2023, Munich, Germany. 275 p.* (p. 190).

Erdem-Coşgun, G. (2025). Artificial intelligence literacy in assessment: Empowering pre-service teachers to design effective exam questions for language learning. *British Educational Research Journal*.

Escalante, J., Pack, A., & Barrett, A. (2023). AI-generated feedback on writing: Insights into efficacy and ENL student preference. *International Journal of Educational Technology in Higher Education*, *20*(1), 57

Eslit, E. R. (2023). Voyaging Beyond Chalkboards: Unleashing Tomorrow's Minds through AI-Driven Frontiers in Literature and Language Education.

Ezeanya, C. U., Ukaigwe, J. A., Ogbaga, I. N., & Kwanashie, A. (2024). Enhancing Social Engagement among Online Learners' Using AI-Driven Tools: National Open University of Nigeria Leaners' Perspective. *ABUAD Journal of Engineering Research and Development (AJERD)*, *7*(2), 78-85.

Fitria, T. N. (2023). The use of artificial intelligence in education (AIED): can AI replace the teacher's role?. *Epigram*, *20*(2), 165-187.

Gambo, I., Abegunde, F. J., Gambo, O., Ogundokun, R. O., Babatunde, A. N., & Lee, C. C. (2025). GRAD-AI: An automated grading tool for code assessment and feedback in programming course. *Education and Information Technologies*, *30*(7), 9859-9899.

Hassan, E., & Omenogor, C. E. (2025). AI powered predictive healthcare: Deep learning for early diagnosis, personalized treatment, and disease prevention.

Holman, K., Marino, M. T., Vasquez, T., Taub, M., Hunt, J. H., & Tazi, Y. (2024). Navigating AI-Powered Personalized Learning in Special Education: A Guide for Preservice Teacher Faculty. *Journal of Special Education Preparation*, *4*(2), 90-95.

Jesudas, R. (2025). Empowering language learning: The role of AI in enhancing language skills. In *AIP Conference Proceedings* (Vol. 3306, No. 1, p. 050023). AIP Publishing LLC.

Kalniņa, D., Nīmante, D., & Baranova, S. (2024, November). Artificial intelligence for higher education: benefits and challenges for pre-service teachers. In *Frontiers in Education* (Vol. 9, p. 1501819). Frontiers Media SA.

Kovalenko, I., & Baranivska, N. (2024). Integrating Artificial Intelligence in English Language Teaching: Exploring the potential and challenges of AI tools in enhancing language learning outcomes and personalized education. *Європейські соціо-правові та гуманітарні студії*, (1), 86-95.

Lan, Y. J., Chung, F. L., & Chang, M. (2023, August). A pilot study of preservice teachers accepting and using chatbots to enhance CFL education. In *International Conference on Innovative Technologies and Learning* (pp. 260-267). Cham: Springer Nature Switzerland.

Lee, D., Son, T., & Yeo, S. (2025). Impacts of interacting with an AI chatbot on preservice teachers' responsive teaching skills in math education. *Journal of Computer Assisted Learning*, *41*(1), e13091.

Lee, S. M., Lee, D., & Kim, Y. S. (2019). The quality management ecosystem for predictive maintenance in the Industry 4.0 era. International Journal of Quality Innovation, 5(1), 4.

Lin, C. C., Huang, A. Y., & Lu, O. H. (2023). Artificial intelligence in intelligent tutoring systems toward

sustainable education: a systematic review. *Smart Learning Environments*, *10*(1), 41.

Liu, X. J., Wang, J., & Zou, B. (2025). Evaluating an AI speaking assessment tool: Score accuracy, perceived validity, and oral peer feedback as feedback enhancement. *Journal of English for Academic Purposes*, *75*, 101505.

Mariyono, D., Akmal, A. N. A., & Alifatul Kamila, A. N. (2024). Navigating Ethical Dilemmas in AI-Enhanced Language Education: Addressing Bias and Ensuring Inclusivity. *Available at SSRN 4936530*.

Merzifonluoglu, A., & Gunes, H. (2025). Shifting Dynamics: Who Holds the Reins in Decision-Making With Artificial Intelligence Tools? Perspectives of Gen Z Pre-Service Teachers. *European Journal of Education*, *60*(1), e70053.

Merzifonluoglu, A., & Gunes, H. (2025). Shifting Dynamics: Who Holds the Reins in Decision-Making With Artificial Intelligence Tools? Perspectives of Gen Z Pre-Service Teachers. *European Journal of Education*, *60*(1), e70053.

Mossavar-Rahmani, F., & Zohuri, B. (2024). Artificial intelligence at work: Transforming industries and redefining the workforce landscape. *Journal of Economics & Management Research. SRC/JESMR-284. J Econ Managem Res*, *5*(2), 2-4.

Mukhamedov, A. (2024). Navigating Opportunities and Challenges of Ai in Enhancing Critical Thinking in Efl Education. *Mental Enlightenment Scientific-Methodological Journal*, *5*(05), 189-197.

Nadhifah, A. S. N. A. S., Syukur, H. N. S. H. N., Haryanto, M. F. H. M. F., Luthfiyyah, R. L. R., & Rozak, D. R. (2024). Pre-service English teacher perceptions of AI in writing skills. *Journal of World Englishes and Educational Practices*, *6*(2), 26-32.

Nwani, E. C., Ugwu N. F., Ochiaka, R. C., Adams, A. B., Ezeani, U. D., Onyekwere, O. K., & Agbo, C. C. (2022). Digital Literacy of School Health Influencers in Enugu State, Nigeria. *Trends Educational Studies Journal, 14*(1), 72-89.

Nyaaba, M., Shi, L., Nabang, M., Zhai, X., Kyeremeh, P., Ayoberd, S. A., & Akanzire, B. N. (2024). Generative AI as a Learning Buddy and Teaching Assistant: Pre-service Teachers' Uses and Attitudes. *arXiv preprint arXiv:2407.11983*.

Olanrewaju, A. G. (2025). Artificial Intelligence in Financial Markets: Optimizing Risk Management, Portfolio Allocation, and Algorithmic Trading. *International Journal of Research Publication and Reviews*, *6*, 8855-8870.

Opele, J. K., Onayinka, T. S., Fagbami, I. J., & Ugwu N. F.,. (2024). Awareness and use of infographic tools among librarians in Nigeria. *New*

Review of Academic Librarianship, *30*(1), 52-71.

Oyeniyi, J., & Oluwaseyi, P. (2024). Emerging trends in AI-powered medical imaging: enhancing diagnostic accuracy and treatment decisions. *International Journal of Enhanced Research In Science Technology & Engineering*, *13*, 2319-7463.

Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning. *Journal of educational technology & society*, *12*(3), 150-162.

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

Pokrivčáková, S. (2019). Preparing teachers for the application of AI-powered technologies in foreign language education. *Journal of language and cultural education*.

Raj, R., & Kos, A. (2023). Artificial Intelligence: Evolution, Developments, Applications, and Future Scope. *Przeglad Elektrotechniczny*, *99*(2).

Tafazoli, D. (2024). Critical appraisal of artificial intelligence-mediated communication in language education. In *Innovations and applications of technology in language education* (pp. 62-79). Auerbach Publications.

Taşçı, S., & Tunaz, M. (2024). Opportunities and challenges in AI-assisted language teaching: Perceptions of pre-service EFL teachers. *Araştırma ve Deneyim Dergisi*, *9*(2), 74-83.

Teo, T. (2008). Pre-service teachers' attitudes towards computer use: A Singapore survey. *Australasian Journal of Educational Technology*, *24*(4).

Teo, T. (2008). Pre-service teachers' attitudes towards computer use: A Singapore survey. *Australasian Journal of Educational Technology*, *24*(4).

Thirumagal, P. G., Raj, M. M. A., Naser, S. J., Hussien, N. A., Abbas, J. K., & Vinayagam, S. (2024). Efficient Contract Analysis and Management through Ai-Powered Tool: Time Savings and Error Reduction in Legal Document Review. In *2024 Ninth International Conference on Science Technology Engineering and Mathematics (ICONSTEM)* (pp. 1-6). IEEE.

Ugwu N. F., Igbinlade, A. S., Ochiaka, R. E., Ezeani, U. D., Okorie, N. C., Opele, J. K., Onayinka, T. S., Iroegbu, O., Onyekwere, O. K., Adams, A. B., Aigbona, P., & Ojobola, F. B. (2024). Clarifying Ethical Dilemmas of Using Artificial Intelligence in Research Writing: A Rapid Review. *Higher Learning Research Communications, 14* (2).DOI:10.18870/hlrc.v142.1549 .

Ugwu N. F., Ochiaka, R. E., Asogwa, U. S., Igbinlade, A. S., Sanni, K. T., Onayinka, T. S., Iroegbu, O.,

Irewole, M. O., Opele, J. K., Oloyede, A. O., Ibenyenwa, N. C., & Olubodun, O. A. (2025). *Comparing the Efficacy of Artificial Intelligence Immersion and Human-Led Workshops for Enhancing Researchers' English Language Skills: A Randomized Control Trial.* Higher Learning Research Communications, *15* (1).DOI:10.18870/hlrc.v15i1.1530.

Vashishth, T. K., Sharma, V., Sharma, K. K., Kumar, B., Kumar, A., & Panwar, R. (2024). Artificial intelligence (AI)–powered chatbots: Providing instant support and personalized recommendations to guests 24/7. In *Technology and Luxury Hospitality* (pp. 211-236). Routledge.

Victor-Mgbachi, T. O. Y. I. N. (2024). Leveraging Artificial Intelligence (AI) Effectively: Managing Risks and Boosting Productivity. *IRE Journals*, *7*(7), 54-69.

Yaman, N. D. (2025). Pre-service teachers'views on an artificial intelligence based text generator. *Eğitim Teknolojisi Kuram ve Uygulama*, *15*(1), 1-21.

Yang, J. (2022). Perceptions of preservice teachers on AI chatbots in English education. *International Journal of Internet, Broadcasting and Communication*, *14*(1), 44-52.

Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review. *Smart Learning Environments*, *11*(1), 28.

Zhang, J., Zhu, C., & Zhang, Z. (2024). AI-powered language learning: The role of NLP in grammar, spelling, and pronunciation feedback. *Applied and Computational Engineering*, *102*, 18-23.