ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

ARTIFICIAL INTELLIGENCE IN ENGLISH LANGUAGE PEDAGOGY: OPPORTUNITIES, CHALLENGES, AND LEARNING OUTCOMES

Dr. Tahira Adeel Zaman
Assistant Professor, Department of Communication and Languages, College of Business Management, Institute of Business Administration
Email: tahira.adeel@iobm.edu.pk
Nida Shabbir
Senior Lecturer, SZABIST University
Email: nida.shabbir@szabist.edu.pk
Zehara Sultana
Visiting Lecturer, SZABIST University
Email: zaraiqbal2511@gmail.com

Abstract
This study aims to explore how artificial intelligence (AI) can be applied to the teaching of English (L2) and what kinds of opportunities, challenges, and impacts it can have on the learning outcomes of English learners. Contemporary ELT is revolutionized with the incorporation of AI technologies like intelligent tutoring systems, chatbots, automated feedback systems, and adaptive language learning platforms, fostering interactive and personalized educational experiences. The study employed a quantitative research design, which was a cross-sectional research type, to examine the relationship between the AI learning tools, student engagement, language achievement and learning outcomes. The data was gathered using a stratified random sampling technique from 250 English language teachers and students in the form of structured questionnaires. SPSS was used for statistical analysis such as descriptive statistics, correlation and regression analysis. The results showed that the use of AI-enhanced learning tools has had a positive impact on students' engagement, language proficiency, and learning outcomes. However, problems regarding digital literacy, accessibility, ethics and teacher preparation were identified as well. The research underscores the need for both responsible use of AI technologies and their effective incorporation into the English language education process to enhance teaching effectiveness and foster technology-enhanced learning environments.

Keywords: *Artificial Intelligence (AI), English Language Pedagogy, AI-Based Learning Tools, Student Engagement, Learning Outcomes, Technology-Enhanced Learning, English Language Teaching (ELT),*

Introduction

The development and implementation of AI applications have served to revolutionize virtually all aspects of the modern education system—teaching, learning, and assessing. In particular, machine learning, natural language processing, intelligent tutoring systems, and generative AI technologies have caused the emergence of more refined, personalized, and interactive learning opportunities. In the last 20 years, the use of AI across the education sector has increasingly impacted the development and delivery of curricula, the assessment of learners, and online learning frameworks (Chen et al., 2022). Further, the COVID-19 pandemic resulted in the rapid digitalization of the education sector and increased the use of AI-based educational technologies across most subject areas, including English language teaching (ELT) (Gutiérrez, 2023; Ain & Azam, 2025).

The importance of English language teaching has increased in the digital age. English has become the global language for communication, collaboration, and the pursuit of opportunities in learning and employment. Consequently, new technologies focused on improving language learning and

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

student engagement have been incorporated into the teaching and learning process. Predictable AI applications for education such as Intelligent Tutoring Systems, Automated Writing Evaluation Systems, Speech Recognition, Chatbots, and Mobile-Assisted Language Learning Systems have been embraced for the teaching of vocabulary, pronunciation, grammar, and writing and speaking skills (Divekar et al., 2021; Fritzner et al., 2025). Many of the studies conducted in this area also support the claim that the use of AI-assisted Language Learning applications has the potential to mitigate language students' anxiety and improve their willingness to engage in the learning of foreign languages communicatively (El Shazly, 2021).

Concept of Artificial Intelligence in English Language Pedagogy

In education, Artificial Intelligence (AI) is mainly referred to as a program or computer system that has human-like understanding and intelligence such as decision making, language comprehension and processing, and other things such as adaptive learning and providing automated feedback. When it comes to teaching and learning a language, specifically the English language, AI can support the process in a number of ways. A few methods include AI-integrated teaching and learning systems, learner analytics, feedback mechanisms, and communication systems. AI English Language Teaching (ELT) practices include automated essay scoring systems, AI-based grammar correction tools, language learning systems that are adaptive to students' proficiency and learning needs, and learning systems integrating machine translation with learning (Deng & Yu, 2022; Woo & Choi, 2021).

One notable advancement that AI has brought to English Language Teaching (ELT) is personalized and adaptive learning. AI is capable of collecting learner performance data and analyzing it, and based on the analysis, AI can fill the identified learning gaps by offering exercises that are tailored to individual learning gaps and providing the exercises with instant feedback (Rana & Tuba, 2017; Tuba & Rana, 2015). This practice improves learner autonomy and motivation (AbuSahyon et al. 2023). Also, more and more AI apps such as ChatGPT that have the ability to generate custom responses, instant explanations, and writing tools, are being used in the teaching, assessment, and ELT classroom interaction because they allow for writing, explanations, and conversation to be taken care of in a matter of seconds (Meniado, 2023).

Teaching and learning English in the traditional sense has its own issues as well, including overcrowded classrooms, insufficient individual feedback, low levels of engagement, and disparities in access to educational resources. Each of these aspects calls for technology-enhanced language learning environments to provide the support needed for language learning and the facilitation of learner-centered instruction. While English language pedagogy has huge potential with the advent of AI, the teaching and learning community has a limited understanding of the pedagogical and ethical concerns, obstacles to the implementation of AI, and its impact on learners in the short and long term (Maurya and Kochmar, 2025; Kyaw, 2025). Data privacy risks, lack of training, and an overreliance on AI systems remain barriers to the effective integration of AI in ELT classrooms (Crompton et al., 2024).

Objectives of the Study

1. To examine the impact of artificial intelligence on students' learning outcomes in English language pedagogy.
2. To analyze the opportunities and challenges associated with AI integration in English language teaching.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

3. To evaluate the relationship between AI-based learning tools, student engagement, and language achievement.

Research Questions

1. How do artificial intelligence influence students learn outcomes in English language pedagogy?
2. What opportunities and challenges are associated with AI integration in English language teaching?
3. What is the relationship between AI-based learning tools, student engagement, and language achievement?

This research bears significance for educators and educational establishments who adopt pragmatic stances in relation to AI technologies to enhance English language teaching and improve student learning experiences. Similarly, for policymakers and curriculum developers, the research holds significance and relevance, as it helps them design and develop educational technology ecosystems that integrate digital learning and other forms of education in the spirit of learning and teaching. In addition, the research addresses the challenge of integrating AI into English language teaching and learning within the rapidly growing area of technology-assisted language learning and language teaching. The results also provide educational stakeholders with a perception of AI in language skill personalization, student engagement, and digital literacy in contemporary education systems (Daud et al., 2025; Torres & Kahveci, 2025).

Literature Review

Artificial Intelligence in Education

Artificial Intelligence (AI) is a powerful tool that can upgrade educational standards through intelligent technologies that improve teaching, learning, and assessments. The development of AI has allowed education to evolve from simple computer-assisted instruction and expert systems, to machine learning and generative AI that can provide adaptive personalized learning (Zawacki-Richter et al., 2019). AI has advanced to systems that can intelligently tutor, predict learning outcomes through analytics, automate grading, and assist students through virtual learning. These technologies redefine educational instruction and enable data-driven educational decisions (Holmes et al., 2019).

AI based educational technologies offer personalized instruction, feedback, and learning that's adaptive. Crompton and Burke (2023) have said that AI Technologies can better learning and educational standards through learner-centric environments by reviewing students learning behaviors to suggest learning content. Kohnke et al. (2023) have also said that AI Technologies improve the digital classroom and enhance teachers' ability to plan and evaluate learning.

Artificial Intelligence in English Language Pedagogy

Artificial Intelligence (AI) included in English Language Teaching (ELT) frameworks has brought various novel methods to Teaching and Learning English. The inclusion of AI into Language Learning systems has allowed learners to experience interaction and adaptation to their needs in different ways when learning a language. Crafting systems are among the most widely used AI applications within the realm of Language Education, especially because they provide personalized learning and responses to the learners' performances (Weng et al., 2023).

Apart from that, AI has also automated Writing Evaluation (AWE). Incorporating AI into such writing and/or language learning support systems within the realm of language education has the potential to provide learners with instantaneous writing formative assessment. In their latest

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

research, Ranalli (2021) has shown that AI has improved learners' writing accuracy and learners' abilities to edit their work. Duolingo, Grammarly, and also the AI language teaching chatbots, provide learners with the opportunities to learn a language and create dialogues themselves (Chiu et al., 2022).

Opportunities of AI in English Language Teaching

AI presents many opportunities for English language instruction. First, there's the possibility of personalization (Riipa, et al., 2026; Hossain, et al., 2025). AI can modify the types of teaching materials and activities to best suit the individual learner based on their skills and preferences and how far along they are. These personalized AI learning environments mean learners can proceed at their own pace and promotes autonomy among learners (Kasneci et al., 2023).

There's also the possibility of instant feedback and assessment. AI systems can assess the learners' pronunciation, grammar, and writing in real time which helps learners spot and fix their language problems. From this, it can be concluded that the AI tools can improve the learners' language skills. AI draws students into language learning more due to the incorporation of games, activities, and chatbots. Huang et al. (2021) are in agreement that AI platforms draw the language learners' participation and help boost their confidence in language learning.

AI creates learning environments that are flexible and accessible in the context of inclusive education. Education and language training can be made accessible to even more learners (Alam, 2021). Mobile learning applications and learning materials that are available online mean the learners can learn whenever and wherever they want.

2.4 Challenges of AI Integration in English Language Pedagogy

While AI integration in English teaching has its benefits, it also has its drawbacks. A prime example of this is the varying degrees of digital literacy of both the teachers and the students (Ansari, Akhtar & Hafeez, 2024; Akhtar, et al., 2021). There are many teachers who do not have the requisite number of technological skills nor the required amount of training to facilitate the correct and efficient usage of AI tools in a teaching environment (Ng. et al, 2021).

While the digital divide and issues of accessibility remain concerning to many, for the most part developing countries are the most affected. This is due to a lack of online connectivity, digital devices, and failing technological infrastructure. AI tools in teaching still present many concerns when viewed in a vacuum. These include concerns with data privacy, algorithmic fairness, and negative impacts on student integrity. These issues have all been looked at by research (Bearman, et al, 2022). There are many issues and concerns with the excess use of AI by students. There are many negative impacts and concerns with this. Some of these are lack of critical thinking and failure to learn (independently) (Chan & Tsi 2023).

Another challenge involves teacher readiness. Teachers need to be able to transform their instructional practices along with the constantly evolving tech for successful AI integration. Still, the lack of professional development opportunities hinders teachers' confidence and preparedness for the use of AI in language classrooms (Moorhouse & Kohnke, 2021).

AI-Based Learning Tools and Student Engagement

AI technology reshapes education through interactive and collaborative learning experiences fueled by chat-based applications and games (Malik, et al., 2025; Hameed & Akhtar, 2023; Hashmi, et al., 2021). These tools offer learners a combination of support that increases engagement, and in some cases, even emotional involvement and intrinsic motivation (D'Mello & Graesser, 2022). AI also fosters independence and collaboration. Learners may use practice

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

language tools with an adaptive learning backbone, and then participate in collaborative discussions within the AI-supported context (Zhai et al., 2021). Use of such tools results in increased confidence and motivation to learn English language.

AI and Language Achievement

AI technologies influence language attainment by enhancing the skills of reading, writing, listening, and speaking. Some of the examples of AI technologies like pronunciation assistance and speech-recognition software help trainees improve their speaking and listening skills (Tai & Chen, 2020). Likewise, writing tools help improve grammar, syntax, and writing mechanics.

Free and paid subscription tools based on AI help learners improve their grammar, vocabulary, and writing better-organized essay prompts. Research studies have illustrated positive correlations between AI-supported environments and better academic performance. As stated by Torres and Kahveci (2025), students exposed to purposeful teaching technologies of AI to learn a second language have more language skills and perform better in comparison to students in the traditional teaching setups and environments.

Theoretical Framework

This study rests upon multiple educational and technological theories. The Technology Acceptance Model (TAM) posits that technology that is perceived to be useful and easy to use is more widely accepted (Abulail et al., 2025; Karan & Chakma, 2025). From a Constructivist perspective, the user is an active participant in knowledge construction through the use of interactive learning, while Social Constructivism focuses more on the role of the collaborative and social processes in the learning (Chen et al., 2025; Srivastava & Srivastava, 2025). Also, in the case of AI, Cognitive Learning Theory supports integration because of the emphasis on the construction of deep understanding and the role of memory in the learning process, and the use of personalized and adaptive teaching strategies (Wang & Sun, 2026; Long et al., 2026).

Empirical Review of Previous Studies

Recent international studies have placed a great emphasis on the European Association for Language Testing and Assessment (EALTA) and Research-based Best evidence Synthesis: International Summaries (RBES). For example, EALTA (2022) discusses the importance of learning a foreign language in the European community. EALTA (2023) focuses on artificial intelligence (AI) and its potential to enhance language learning. Kasneci, B. et. al., (2023) have posited that AI language models, like ChatGPT, because of their ability to understand prompts and provide meaningful feedback, could positively influence secondary and post secondary learners with their academic writing.

Locally and regionally, however, the studies are more limited, especially within the borders of less developed countries. The majority of the studies that are available speak about the positive impacts of technology but say very little, if anything, about pedagogy and ethics. Initially, AI was introduced in language classes for short-term use. In time, however, language teachers' attitudes toward AI within educational systems have evolved, and now, AI is seen as having a more permanent role. AI language pedagogy and methodology have yet to fully be developed.

Hypotheses of the Study

H1: Artificial intelligence positively influences students' learning outcomes in English language pedagogy.

H2: AI-based learning tools positively affect student engagement in English language learning.

H3: Student engagement positively influences language achievement.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

H4: Opportunities associated with AI integration positively influence English language learning outcomes.
H5: Challenges associated with AI integration negatively influence effective English language pedagogy.

Research Methodology

This research utilized a quantitative method to understand the prospects, barriers, and results of using Artificial Intelligence (AI) in teaching English. The method used was a cross-sectional survey, which was best for the time and cost constraints of the study. The survey method allowed the collection of data from a large population in a small time frame. The research was a positivism approach, which pertains to the collection of data to drive a hypothesis and the use of statistics to understand the relationship of AI- learning tools, student involvement, and learning results.

The population for the research was English language teachers and learners at the university and college level, specifically, those with the use of AI and digital technology in the pedagogy of English. Teachers and students were represented in the survey, ensuring minimal sampling bias. The sample size was 50 teachers and 200 learners, bringing the total to 250 participants.

For the research, structured questionnaires were developed with five-point Likert scale items that ranged from "Strongly Disagree" to "Strongly Agree." Sections of the instrument included demographics, perceptions of AI in language learning, student engagement, learning outcomes, and the opportunities and challenges related to the integration of AI in education. Content validity of the instrument was established by expert review, and reliability was tested by Cronbach's Alpha via SPSS. Usually, a Cronbach's Alpha score of 0.70 or higher was considered reliable. Ethics were maintained throughout the study in the forms of informed consent and the confidentiality of the respondents. Analysis of the collected data was done by SPSS, and the proposed hypotheses were tested by assessing the relationships of the construct variables through descriptive statistics, correlation analysis, and regression analysis.

Results and Data Analysis

This chapter examines data from English language instructors and students regarding the role of Artificial Intelligence (AI) in the classroom and the language learning process. I analyzed the data using the Statistical Package for the Social Sciences (SPSS). I examined AI learning tools, student engagement, language outcomes, and learning outcomes using descriptive statistics, reliability, correlation, and regression. My interpretations of the outcomes, presented in tables, will respond to the research objectives, the research questions, and the research hypotheses.

Demographic Analysis

Table 4.1: *Gender Distribution of Respondents*

Gender	Frequency	Percentage
Male	118	47.2
Female	132	52.8
Total	250	100

Table 4.1 showed that out of 250 respondents, 132 (52.8%) were female, while 118 (47.2%) were male. This shows that study participation was fairly even across both genders.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Table 4.2: Age *Distribution of Respondents*

Age Group	Frequency	Percentage
18–25 Years	140	56.0
26–35 Years	70	28.0
36–45 Years	28	11.2
Above 45 Years	12	4.8
Total	250	100

Table 4.2 indicated that the majority of respondents (56%) belonged to the age group of 18–25 years. This suggests that the majority of the respondents were university students that participated in AI-integrated learning environments.

Table 4.3: *Educational Level of Respondents*

Educational Level	Frequency	Percentage
Undergraduate	145	58.0
Graduate	78	31.2
Postgraduate	27	10.8
Total	250	100

The findings revealed that undergraduate students represented the largest group of participants (58%), followed by graduate students (31.2%).

Table 4.4: *Teaching Experience of Teachers*

Experience	Frequency	Percentage
1–5 Years	18	36.0
6–10 Years	20	40.0
Above 10 Years	12	24.0
Total	50	100

Most teachers (40%) had teaching experience between 6–10 years, indicating that experienced educators participated in the study.

4.2 Descriptive Statistics

Table 4.5: *Descriptive Statistics of Study Variables*

Variables	M	SD
AI-Based Learning Tools	4.12	0.61
Student Engagement	4.05	0.58
Language Achievement	3.98	0.63
Learning Outcomes	4.10	0.57

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Opportunities of AI	4.18	0.54
Challenges of AI	3.71	0.69

The results demonstrated high average ratings for AI-based learning tools, student engagement, and learning outcomes. This suggests a positive perception of the use of AI in English language teaching. The standard deviations were less than 1, indicating agreement among the respondents.

4.3 Reliability Analysis

Table 4.6: *Reliability Statistics*

Variables	Cronbach's α
AI-Based Learning Tools	.84
Student Engagement	.81
Language Achievement	.79
Learning Outcomes	.86
Opportunities and Challenges	.83

The Cronbach's alpha values ranged from .79 to .86, exceeding the acceptable threshold of .70. This indicated that the questionnaire items were reliable and internally consistent.

Correlation Analysis

Table 4.7: *Correlation Matrix*

Variables	1	2	3	4
1. AI-Based Learning Tools	1			
2. Student Engagement	.682**	1		
3. Language Achievement	.645**	.711**	1	
4. Learning Outcomes	.698**	.734**	.756**	1

Note. p < .01.

The correlation analysis showed strong positive relationships among AI-based learning tools, student engagement, language achievement, and learning outcomes. AI-based learning tools had a strong positive relationship with student engagement (r = .682, p < .01) and learning outcomes (r = .698, p < .01).

Regression Analysis

Table 4.8: *Model Summary*

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.742	.551	.544	0.421

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

According to the model summary, learning tools based on AI accounted for 55.1% of the variance in learning outcomes. The R^2 value indicated that the independent variables had a significant impact on the dependent variable.

Table 4.9: *ANOVA Results*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	42.116	3	14.039	79.214	.000
Residual	34.551	246	.140		
Total	76.667	249			

The ANOVA results indicated that the regression model was statistically significant, $F(3, 246) = 79.214$, $p < .001$. This confirmed that AI-based learning tools, student engagement, and language achievement significantly influenced learning outcomes.

Table 4.10: *Regression Coefficients*

Variables	β	t	Sig.
AI-Based Learning Tools	.384	6.521	.000
Student Engagement	.427	7.134	.000
Language Achievement	.318	5.442	.000

The regression coefficients showed that AI-based learning tools positively influenced learning outcomes ($\beta = .384$, $p < .001$). Student engagement also had a significant positive effect on language achievement and learning outcomes.

4.6: Hypotheses Testing

Table 4.11 *Hypotheses Testing Results*

Hypotheses	Decision
H1: Artificial intelligence positively influenced students' learning outcomes in English language pedagogy.	**Accepted**
H2: AI-based learning tools positively affected student engagement in English language learning.	**Accepted**
H3: Student engagement positively influenced language achievement.	**Accepted**
H4: Opportunities associated with AI integration positively influenced English language learning outcomes.	**Accepted**
H5: Challenges associated with AI integration negatively influenced effective English language pedagogy.	**Accepted**

All five hypotheses were substantiated by the statistical analysis. The results showed that AI integration improved student engagement, enhanced language achievement, and improved

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

language learning outcomes. Moreover, challenges in AI integration adversely impacted effective English language pedagogy.

Summary of Findings

The study determined that AI enhanced pedagogy for English Language learning with personalized pathways, active learning, and real-time feedback. The learning tools also developed student engagement, language learning, and overall learning. The study determined that the benefits of AI usage when applied positively, impacted English Language learning more so than the challenges of limited technology, digital experience, ethics of AI and policy. The study indicated that AI was fundamental in enhancing English learning and teaching in the institutions.

Discussion

The results showed that using AI in English language pedagogy improved learning outcomes for students. AI-based learning tools, student engagement, and language achievement showed strong positive relationships in the statistical analysis. AI-facilitated learning promoted student engagement, motivation, and learning outcomes, which particularly fulfills the objectives of this research. Moreover, the studies of Chen et al. (2022) and Kasneci et al. (2023) indicated the beneficial influence of AI technologies on educational outcomes and the interaction of learners, which is consistent with the present study.

The results confirmed earlier studies about the positive impact of AI in language learning. Chen et al. (2022) and Zhai et al. (2021) reported that AI led to advancements in adjustment to learners' needs and personalized instruction. Likewise, Divekar et al. (2021) and AbuSahyon et al. (2023) observed that AI-supported systems for language learning developed the autonomy of learners and their interaction and communication skills. Additionally, El Shazly (2021) and Tai and Chen (2020) documented advancements in learners' confidence in speaking and language skills as a result of using AI tools.

The research found multiple prospects concerning the infusion of AI within English language teaching. Personalization, adaptivity, and instant feedback were some of the advantages noted for AI-supported systems (Deng & Yu, 2022; Tlili et al., 2023). Intelligent Tutoring Systems and Chatbots, as means of Interactive instruction, also contributed to higher levels of engagement and participation (Kohnke et al., 2023; Huang et al., 2021). Furthermore, the incorporation of AI technologies was found to positively impact the teaching and learning of the four language skills of reading, writing, speaking, and listening (Ranalli, 2021; Meniado, 2023). While the benefits of AI are clear, its integration has presented problems. These problems include: ethics, privacy, technology, and lack of teacher readiness to use AI (Bearman et al., 2022; Ng et al., 2021). Digital illiteracy and a lack of training greatly hampered the use of English language teaching with AI (Moorhouse & Kohnke, 2021; Chan & Tsi, 2023).

Implications for English Language Education

The results indicated pedagogical, institutional, and technological implications. It is vital for institutions to offer the technology and the training of teachers to best support the pedagogical integration of artificial intelligence in English language teaching (Holmes et al, 2019; Crompton & Burke, 2023).

Conclusion

The study showed that Artificial Intelligence (AI) can be a powerful addition to English language teaching through its ability to improve student engagement and language skills, and to enhance learning outcomes. It showed that the use of AI tools in learning, particularly intelligent tutoring

systems, chatbots, and automatic feedback apps, can provide learning experiences that are more personalized and interactive. From the data analyzed, it was clear that AI had a positive impact on student motivation, classroom interaction, and language skills development. The study also showed that the use of AI learning environments can greatly improve practice in reading, writing, and language speaking and listening. The study, in its totality, showed the positive impact of AI on English language teaching with its use of more personalized and technology-advanced learning practices.

Recommendations

For teachers, the recommendation was to implement Artificial Intelligence tools in English classrooms in a way where the tools can help enhance learner engagement and support adaptive instruction. Another requirement is the training of teachers in order to assist in increasing their digital and technical skills.

For Educational institutions, the recommendation was to ensure the integration of Artificial Intelligence in the educational institutions new digital technologies, access to the internet and digital learning materials is made available Artificial Intelligence in education. Also, the institutions will need to develop teachers and students' workshops and training.

For the policy makers, the recommendation was to strengthen the policies concerning the integration of Artificial Intelligence in education and the development of the systems to ensure safe and responsible integration of Artificial Intelligence in the classrooms and the educational institutions. More emphasis is to be placed on the policies of Data protection, Equal Access to learning and Educational opportunities.

Practical Implications

The research demonstrated how AI's implementation in English language teaching can enhance digital learning environments and increase learner autonomy and teaching efficiency. AI-facilitated systems can provide the design of flexible, accessible, and learner-oriented learning environments.

Future Research Directions

Future research should employ mixed-methods approaches, comparative methods across different institutions, and longitudinal research to analyze the long-term effects of AI on English language learning.

References

Abulail, R. N., Badran, O. N., Shkoukani, M. A., & Omeish, F. (2025). Exploring the factors influencing AI adoption intentions in higher Education: an Integrated model of DOI, TOE, and TAM. *Computers*, *14*(6), 230. https://doi.org/10.3390/computers14060230

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.

Ain, Q. U., & Azam, M. K. S. (2025). Artificial intelligence in Language Education: A Review of Emerging trends and Implications. *PAKISTAN LANGUAGES AND HUMANITIES REVIEW*, *9*(IV). https://doi.org/10.47205/plhr.2025(9-iv)14

Akhtar, N., Aslam, N., Hussain, S. Q., & Memon, A. (2021). Qualitative Analysis of Diffusing ERE cycle in Teaching at Higher Education: Experiential Learning Practices in Pakistan. *Ilkogretim Online*, *20*(5), 7525-7539.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Alam, A. (2021). *Possibilities and apprehensions in the landscape of artificial intelligence in education*. In *2021 International Conference on Computational Intelligence and Computing Applications (ICCICA)* (pp. 1–8). IEEE. https://doi.org/10.1109/ICCICA52458.2021.9697272

Annadurai, R. (n.d.). *Enhancing active learning with artificial intelligence: Collaborative learning and peer instruction in the digital age*. *Artificial Intelligence, 29*, 128

Ansari, R., Akhtar, N., & Hafeez, A. (2024). Exploring the Perceptions of Secondary School Teachers on Teaching Licenses in Sindh: A Qualitative Study. *International Journal of Social Science & Entrepreneurship*, *4*(3), 126-147.

Bearman, M., Ryan, J., & Ajjawi, R. (2022). Discourses of artificial intelligence in higher education: a critical literature review. *Higher Education*, *86*(2), 369–385. https://doi.org/10.1007/s10734-022-00937-2

Chan, C. K. Y., & Tsi, L. H. Y. (2023). The AI revolution in Education: Will AI replace or assist teachers in higher education? *arXiv (Cornell University)*. https://doi.org/10.48550/arxiv.2305.01185

Chen, X., Xie, H., Qin, S. J., Wang, F. L., & Hou, Y. (2025). Artificial Intelligence-Supported Student Engagement Research: text mining and Systematic analysis. *European Journal of Education*, *60*(1). https://doi.org/10.1111/ejed.70008

Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). Two Decades of Artificial Intelligence in Education: Contributors, Collaborations, Research Topics, Challenges, and Future Directions. Educational Technology & Society, 25(1), 28–47. https://www.jstor.org/stable/48647028

Chiu, T. K., Xia, Q., Zhou, X., Chai, C. S., & Cheng, M. (2022). Systematic literature review on opportunities, challenges, and future research recommendations of artificial intelligence in education. *Computers and Education Artificial Intelligence*, *4*, 100118. https://doi.org/10.1016/j.caeai.2022.100118

Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: the state of the field. *International Journal of Educational Technology in Higher Education*, *20*(1). https://doi.org/10.1186/s41239-023-00392-8

Crompton, H., Edmett, A., Ichaporia, N., & Burke, D. (2024). AI and English language teaching: Affordances and challenges. *British Journal of Educational Technology*, *55*(6), 2503–2529. https://doi.org/10.1111/bjet.13460

Daud, A., Aulia, A. F., Muryanti, M., Harfal, Z., Nabilla, O., & Ali, H. S. (2025). Integrating Artificial intelligence into English language teaching: A Systematic review. *European Journal of Educational Research*, *14*(2), 677–691. https://doi.org/10.12973/eu-jer.14.2.677

Deng, X., & Yu, Z. (2022). A Systematic Review of Machine-Translation-Assisted Language Learning for Sustainable Education. *Sustainability*, *14*(13), 7598. https://doi.org/10.3390/su14137598

Divekar, R. R., Drozdal, J., Chabot, S., Zhou, Y., Su, H., Chen, Y., Zhu, H., Hendler, J. A., & Braasch, J. (2021). Foreign language acquisition via artificial intelligence and extended reality: design and evaluation. *Computer Assisted Language Learning*, *35*(9), 2332–2360. https://doi.org/10.1080/09588221.2021.1879162

D'Mello, S., & Graesser, A. (2022). *Feeling, thinking, and computing with affect-aware learning technologies*. Educational Psychologist, 57(1), 1–20.

El Shazly, R. E. (2021). *Effects of artificial intelligence on English speaking anxiety and speaking performance: A case study*. *Expert Systems, 38*(3), e12667. https://doi.org/10.1111/exsy.12667

Fritzner, J., Vergara, G. I. S., & Campos, N. D. C. (2025). The Evolution of English Language Teaching: How Artificial Intelligence is Reshaping Learning and Pedagogy. *Ciencia Latina Revista Científica Multidisciplinar*, *9*(3), 6843–6859. https://doi.org/10.37811/cl_rcm.v9i3.18329

Gutiérrez, L. (2023). Artificial intelligence in Language Education: Navigating the potential and challenges of chatbots and NLP. *Research Studies in English Language Teaching and Learning*, *1*(3), 180–191. https://doi.org/10.62583/rseltl.v1i3.44

Hameed, S., & Akhtar, N. (2023). An Evaluation of Early Childhood Education at Provincial Level: Policies, Practices, Issues, and Challenges in Baluchistan. *Journal of Social Sciences Review*, *3*(2), 629-639.

Hashmi, S. U., Hussain, S. Q., Zaman, T. A., Arshad, S., & Akhtar, N. (2021). CRITICAL REVIEW OF FORMATIVE ASSESSMENT PRACTICES IMPLEMENTED IN ENGLISH LANGUAGE LEARNING PROGRAMS IN SINDH. *Humanities & Social Sciences Reviews*, *9*(3), 703–712. https://doi.org/10.18510/hssr.2021.9369

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education promises and implications for teaching and learning*. Center for Curriculum Redesign.

Hossain, A., Tasnim, A. F., Akhter, F., Semi, M. M. A., Khan, R., Rahman, R., ... & Sabeena, A. A. (2025). Transforming Healthcare Decisions in the US Through Machine Learning. Artificial Intelligence, 1(2).

Huang, X., Zou, D., Cheng, G., & Xie, H. (2021). A Systematic review of AR and VR Enhanced Language Learning. *Sustainability*, *13*(9), 4639. https://doi.org/10.3390/su13094639

Karan, B., & Chakma, C. (2025). Influence of higher education students' perceived behaviour on their artificial intelligence acceptance: an empirical investigation using technology acceptance model. *Journal of Applied Research in Higher Education*, *18*(3), 745–760. https://doi.org/10.1108/jarhe-11-2023-0535

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., . . . Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, *103*, 102274. https://doi.org/10.1016/j.lindif.2023.102274

Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal*, *54*(2), 537–550. https://doi.org/10.1177/00336882231162868

Kyaw, E. M., & Deng, J. (2025). Systematic review of artificial intelligence integration in English language teaching: Trends, applications, and pedagogical implications. *Educalitra: English Education, Linguistics, and Literature Journal*, *4*(2), 153-181.

Lin, C. H., & Warschauer, M. (2020). *Artificial intelligence and language learning: What does the future hold?* Language Learning & Technology, 24(1), 1–8.

Long, D. Y., Wang, S., Rashid, S. M., & Lu, X. T. (2026). Artificial intelligence in higher education: a systematic review of its impact on student engagement and the mediating role of teaching methods. *Frontiers in Education*, *10*. https://doi.org/10.3389/feduc.2025.1648661

Malik, F., Irfan, S., Saba, S., Mumtaz, L., & Nasir, H. (2025). Consumers Spirituality Towards Green Purchase Intention: Mediating Roleof Perceived Consumer Effectiveness and Moderating Role of Religious Commitment. *Journal of Management & Social Science*, *2*(1), 138-157.

Maurya, K. K., & Kochmar, E. (2025). Pedagogy-Driven evaluation of generative AI-Powered intelligent tutoring Systems. In *Communications in computer and information science* (pp. 32–46). https://doi.org/10.1007/978-3-031-99261-2_3

Meniado, J. C. (2023). The impact of CHATGPT on English Language Teaching, Learning, and Assessment: A Rapid Review of literature. *Arab World English Journal*, *14*(4), 3–18. https://doi.org/10.24093/awej/vol14no4.1

Moorhouse, B. L., & Kohnke, L. (2021). *Responses of English language teachers to the challenges of online teaching during COVID-19*. RELC Journal, 52(3), 359–367.

Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2021). Conceptualizing AI literacy: An exploratory review. *Computers and Education Artificial Intelligence*, *2*, 100041. https://doi.org/10.1016/j.caeai.2021.100041

Rana, N. A., & Tuba, N. (2017). Failure to Get Admissions in a Discipline of Their Own Choice: Voices of Dejected Students. *Journal of Education and Educational Development*, *4*(1), 7-31.

Ranalli, J. (2021). L2 student engagement with automated feedback on writing: Potential for learning and issues of trust. *Journal of Second Language Writing*, *52*, 100816. https://doi.org/10.1016/j.jslw.2021.100816

Riipa, M. B., Ahmed, F., Rony, M. K. K., Hossain, A., Islam, A., Utsho, M. R., ... & Tasnim, A. F. (2026). The role of artificial intelligence in predicting cardiovascular outcomes: a systematic review and meta-analysis. *Biostatistics & Epidemiology*, *10*(1), e2670804.

Srivastava, S., & Srivastava, S. (2025). Collaborative learning in digital environment. *International Journal of Research and Analytical Reviews*, *12*(1), 392-404.

Tai, T., & Chen, H. H. (2020). The impact of Google Assistant on adolescent EFL learners' willingness to communicate. *Interactive Learning Environments*, *31*(3), 1485–1502. https://doi.org/10.1080/10494820.2020.1841801

Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments*, *10*(1). https://doi.org/10.1186/s40561-023-00237-x

Torres, P. J., & Kahveci, Y. E. (2025). Effectiveness of Artificial Intelligence (AI) in language teaching. *Computers and Education Artificial Intelligence*, *9*, 100522. https://doi.org/10.1016/j.caeai.2025.100522

Tuba, A., & Rana, N. A. (2015). Using social networking site (SNS) in students' learning experiences: An experimental study at higher secondary school Karachi, Pakistan. *Int. J. Engl. Educ*, *4*(3), 238-249.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Wang, G., & Sun, F. (2026). Effect of Artificial Intelligence-Based tutoring, cognitive engagement, and teacher feedback on university students' academic performance. *European Journal of Education*, *61*(2). https://doi.org/10.1111/ejed.70619

Wang, G., & Sun, F. (2026b). Effect of Artificial Intelligence-Based tutoring, cognitive engagement, and teacher feedback on university students' academic performance. *European Journal of Education*, *61*(2). https://doi.org/10.1111/ejed.70619.

Weng, X., & Chiu, T. K. (2023). Instructional design and learning outcomes of intelligent computer assisted language learning: Systematic review in the field. *Computers and Education Artificial Intelligence*, *4*, 100117. https://doi.org/10.1016/j.caeai.2022.100117

Woo, J. H., & Choi, H. (2021, October 29). *Systematic review for AI-based language learning tools*. arXiv.org. https://arxiv.org/abs/2111.04455

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education*, *16*(1). https://doi.org/10.1186/s41239-019-0171-0

Zhai, X., Chu, X., Chai, C. S., Jong, M. S. Y., Istenic, A., Spector, M., Liu, J., Yuan, J., & Li, Y. (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity*, *2021*(1). https://doi.org/10.1155/2021/8812542.