

AI-ASSISTED ENGLISH LANGUAGE TEACHING: PREVALENCE AND EFFECTIVENESS OF ARTIFICIAL INTELLIGENCE IN ENGLISH CLASSROOMS IN HIGHER EDUCATION INSTITUTIONS ACROSS PAKISTAN

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Abstract

The present research aims to investigate English language teachers' perceptions and views regarding the use of artificial intelligence (AI) in higher education institutions in Pakistan. A mixed-methods research design was adopted that included a quantitative descriptive survey and qualitative thematic analysis to gain a comprehensive understanding of AI adoption in ELTs. The target population was 40 teachers of English from public and private higher educational institutions who were selected from various provinces of Pakistan using purposive sampling. The data were gathered using a structured questionnaire that aligned with the Technology Acceptance Model (TAM). Descriptive statistics were used to analyze quantitative data. Moreover, the open-ended responses were analyzed using thematic analysis, which revealed the major themes: training needs, infrastructural challenges, and ethical issues. The results highlighted that teachers' awareness of AI ranges from moderate to high, and their attitudes were generally positive towards the role of AI in ELT. Most stated that AI improves student learning and are willing to adopt AI, but limited training and institutional support, technical issues and limited AI literacy prevented real-life use. However, overall, teachers generally saw AI as a complement to teaching, not a substitute for it, even as they recognized the potential to enhance language teaching. The study findings suggest the need for improvement in infrastructure, professional training, and institutional support for effective implementation of AI in higher education in English language classrooms across Pakistan.

Keywords: Artificial Intelligence, English Language Teaching, Higher Education, Teacher Perceptions, Technology Acceptance Model.

INTRODUCTION

In recent years, the field of Artificial Intelligence (AI) has shown growth and transformation across different industries, especially in language education. AI tools for language education, like QuillBot, Duolingo, ChatGPT, Grammarly, automated assessment, and intelligent tutoring, have been increasingly integrated that provides great opportunities for teaching and learning. The technologies enable personalized learning experiences; instant feedback; content creation; and learner engagement; shifting away from traditional pedagogical practices. As a result, AI support in English Language Teaching (ELT) has become a significant field of study in the research of ELT.

International researchers have emphasized that AI can enhance learning outcomes, foster autonomous learning, and assist teachers in creating learning resources and assessment

strategies. Even though there is extensive literature about the use of AI in educational contexts, most of the research has been carried out in technologically up-to-date settings, especially in Europe, North America and East Asia. In comparison empirical studies focusing the use of AI in developing nations, particularly in the case of Pakistan, are still limited. Moreover, most of the studies on the students' experiences and the technological efficacy have been centering on the students, leaving relatively little attention for the teachers' own experiences and practices in the English language classroom.

With the changing requirements of the twenty-first century, HEIs have started using digital technologies in every facet of their functioning. Digital technologies have become a part of the fundamental functioning of HEIs across Pakistan due to the changing twenty-first century future of education. English language teachers are gradually incorporating AI-driven applications in the learning process, such as lesson planning, preparation of learning materials, language assessment, language feedback, and improving communicative competence of learners. The use of AI tools, benefits and barriers of adopting AI tools, and institutional support for teachers in adopting AI tools are still under-studied. It is crucial for the development of effective policies and pedagogical strategies that reflect the changing educational landscape, to understand these dimensions.

This study aims to explore the use of artificial intelligence (AI) technologies in teaching the English Language in universities of Pakistan. The study, in particular, investigates the perceptions, attitudes, practices, perceived benefits, challenges, and institutional support of English language teachers when using AI-assisted technologies in the ELT classroom. The study also aims to offer context-specific analysis of the opportunities and challenges of using AI in the Pakistani context of higher education by focusing on the experiences of university teachers.

THEORETICAL FRAMEWORK

Theoretically, the study is based on the Technology Acceptance Model (TAM) that was proposed by Davis (1989) and the principles of the Computer-Assisted Language Learning (CALL). The Technology Acceptance Model suggests that the acceptance and intent to use a technology are mainly based on the perception of usefulness and ease of use.. Complementing the technological focus of TAM and CALL offers pedagogical focus on exploring the role of technology in language learning and (instruction). CALL focuses on the use of digital technologies to improve interaction, learner autonomy, feedback and communicative competence. With generative AI, the use of CALL has offered customization options, real-time feedback, automated content creation, and adaptive teaching assistance. Thus, the incorporation of TAM and CALL provides a full picture of technology acceptance and pedagogical implications for the use of AI in ELT.

METHODOLOGY

This study used a mixed methods research design. Quantitative descriptive survey approach complemented by qualitative thematic analysis was adopted. The quantitative component used a descriptive survey. Participants were selected using purposive sampling, as they were directly involved in English language teaching and had exposure to or awareness of AI or digital tools. Closed-ended questions like multiple-choice and Likert scale statements were used to assess the perceived impact of adopting AI, frequency of usage, challenges in integrating AI, training and institutional support, readiness to adopt, perceived usefulness, and familiarity with AI technologies. To make the instrument accessible and to increase participation, the instrument was given electronically. Data collected were quantitative data, which were analyzed using descriptive statistics. Data were presented using pie-chart and for easy interpretation.

Along with the quantitative part, a qualitative part of the study was carried out based on open-ended answers in which thematic analysis was used to enrich and deepen the interpretation of the collected data. The thematic analysis was conducted to highlight the major concerns, including training and professional development, infrastructure and technology, and ethical and pedagogical issues concerning the use of AI. Both the quantitative and the qualitative methods were incorporated in the study, such that the overall results strengthen each other and enhance the study's methodological triangulation.

CONTRIBUTION

By exploring teachers' experiences and perceptions, this study contributes to the emerging discourse on AI-assisted language education in Pakistan. The results will offer important implications for both teachers and administration, as well as for policy makers and curriculum planners who are interested in the potential of AI technologies to enhance the English language teaching and learning process. Furthermore, the study tackles an important lacuna in the literature by offering context-specific evidence on the opportunities and difficulties of the integration of AI in Pakistani university classrooms, which enriches the general body of knowledge on the integration of educational technology and language pedagogy.

LITERATURE REVIEW

In the past few decades, the use of technology in language teaching has developed significantly. The research in Computer-Assisted Language Learning (CALL) laid the groundwork for the use of digital technologies in the teaching of English. Warschauer and Healey (1998) argue that technology has revolutionized the study of the language by increasing the ease of interaction, communication and self-directedness of language learners. They believed that, with the use of technological tools, language teaching can be more effective because they can be used to create real learning situations and to motivate students to participate actively. Their work represented a departure from teacher-centered pedagogies to more learner-centered and technology-enhanced pedagogies.

Based on these advances, Chapelle (2001) asserted that technological innovations can enhance second language acquisition through the factors of interaction, prompt feedback, and access to authentic linguistic input. She stated that technology learning space enables meaningful language use and promotes learner autonomy. In the same vein, Levy (2009) pointed out the increasing status of CALL in language instruction and emphasized the role of technology in the language teaching context as a supplement to the role of teachers and their pedagogical goals. Such studies have laid the groundwork for theoretical knowledge of the pedagogical value of digital technologies in the field of language education.

The field of education is experiencing a new era in AI technology with the advent of adaptive learning systems, intelligent tutoring systems, and automated feedback mechanisms. Luckin et al. (2016) contended that AI technologies can help personalise learning experiences and offer learners personalised instructional support. Their research highlighted the need to consider AI as a tool to empower teachers and improve teaching quality, not as a substitute for them. They also highlighted the need for proper training, institutional support, and considerations in the successful integration of AI.

Davis' (1989) Technology Acceptance Model (TAM) has been very influential in the research about technology acceptance in educational contexts. The model says that the factors that will determine the acceptance and adoption of a technology by the users are perceived usefulness, and perceived ease of use. In the past, many studies have used TAM to examine teachers' and students' attitudes toward the use of education technologies. Scherer et al (2019) in their meta-analysis of technology acceptance in teachers revealed that perceived usefulness and ease of use of technology are significant factors that determine teachers' intention to adopt digital

technology in the teaching-learning process. They found that positive attitudes and proper support are vital in the successful adoption of technology.

The advent of generative artificial intelligence, specifically large language models, has brought another revolution to the learning of English. OpenAI's launch of ChatGPT in 2022 was a significant milestone in the field of natural language processing and education. Kasneci et al. (2023) explored the potential and problems of ChatGPT in the field of education, finding that conversational AI tools like ChatGPT have the potential to provide many benefits in personalized learning, content creation, and real-time feedback. But the authors also found issues with accuracy, ethical considerations, academic integrity, and dependency on AI-generated content. They highlighted the importance of using AI technology in an integrated and responsible way that is pedagogically relevant.

In ELT, Kohnke, Moorhouse and Zou (2023) examined the pedagogical uses of ChatGPT and other generative AI in the teaching of English. Their analysis identified opportunities for AI technologies to support teachers in several aspects of lesson planning, material creation, grammar instruction, improving vocabulary and assessment. Moreover, the researchers said the use of AI tools helps foster learner independence and offer instant feedback, which improves students' language learning experiences. Even with these benefits, the study made it clear that there were issues with misinformation, a lack of critical thinking skills, and a need for teacher supervision.

Similarly, Lo (2023) studied the use of ChatGPT in language learning and found that teachers were overall positive about its use as it could create teaching materials and assist with individualized learning. Plagiarism, reliability, and ethical issues were also raised as concerns, however. The study found that digital literacy, pedagogical beliefs, and institutional support of teachers affect their acceptance of AI technologies.

Additionally, Yan (2023) explored teachers' perception of generative AI, and found that teachers realize the potential of generative AI to enhance the efficiency of instruction and student engagement. However, the participants noted that there were some challenges, including lack of training, unclear policies, and concerns about the impact of AI on academic integrity. The study suggested that schools and teachers' professional development programs are essential to develop teachers' knowledge and skills in using AI effectively.

While the world has turned to AI in Language learning and teacher attitudes towards the generative AI, it is not enough for developing countries to have empirical evidence. The research on the use of AI technologies in teaching English in Pakistan is still in early stages. Previous studies have mostly focused on e-learning, online teaching, and students' experiences in this field while neglecting to explore how English language teachers perceive, practice and face difficulties in using AI in their university classrooms. Moreover, very few case studies have been carried out to investigate the pedagogical implications of AI in the context of language teaching in Pakistan.

The field of generative AI and its impact on language learning has seen an unprecedented surge in research in recent years. Since its launch in late 2022, the pedagogical potential and the effects of ChatGPT on teaching and learning processes have been increasingly studied. The large language models are a paradigm shift in education because of the potential to create content, give instant feedback, and enable personalized learning, according to Kasneci et al. (2023). The authors also warned of accuracy and ethics problems as well as overreliance on AI-generated content.

Likewise, Tlili et al. (2023) discussed opportunities and challenges of ChatGPT in higher education. They concluded that generative AI technologies have the potential to boost creativity, personalize learning, and streamline teaching. However, the research highlighted

issues of academic honesty, privacy, and the importance of providing guidelines at the institutional level to promote ethical use of AI. Similarly, Lo (2023) found that teachers' overall attitude towards ChatGPT was positive, citing its ability to assist teachers in lesson planning and creating educational materials, but also pointing to concerns about plagiarism and reliability.

More recently, Li, Shadieff and Chiu (2025) engaged in a systematic review and meta-analysis of generative AI applications in task-based language teaching. The study found that AI-based language learning has a great impact on the language performance and interaction of learners and their engagement with the language. The researchers concluded that generative AI technologies can contribute to the communicative language teaching and promote collaborative learning environment. But they emphasized the need to incorporate good pedagogy with technology innovation.

The other area of enquiry that is emerging is the perception of AI-supported learning practices among teachers. Zhang (2025) examined teachers' attitudes about using AI for writing assessment in English as a Foreign Language. The study revealed that ChatGPT is beneficial for teachers in terms of its efficiency and consistency in grading writing assignments. However, teachers' perceptions remained affected by issues of assessment literacy, fairness, and authenticity of students' work.

Kohnke and Moorhouse (2026) have also shared their insights on the pre-service language teachers' attitudes towards generative AI mediated micro-learning. They found that teachers had positive attitudes towards AI due to its ability to provide personalized learning, engage learners, and assist self-regulated learning. The emphasis was that AI technologies are there to complement and not take the place of the pedagogical expertise of teachers.

Kilot (2026) examined the factors affecting the behavioral intention of English language teaching higher education teachers to use generative AI in a particular study aimed at higher education English language teaching. The study revealed that the perceived benefits, technological knowledge, and privacy concerns of teachers were significant factors affecting their intention to use AI in English language learning, based on the integrated model of the Unified Theory of Acceptance and Use of Technology (UTAUT) and Expectancy-Value Theory. The importance of institutional support and teachers' preparedness in the successful integration of AI technologies was underlined in the study.

In line with these results, Saarela, Gunasekara and Kumarage (2026) carried out a meta-analysis to explore the effects of generative AI on language skills and affective responses. Their analysis showed that AI-enhanced learning has a positive impact on language learning outcomes and on learner motivation and cognitive engagement. The research found that, when used in the right way alongside strong pedagogical support, generative AI tools can play an important role in language learning.

Similarly, Fan et al. (2026) analysed the results of 36 empirical studies and found that generative AI has a moderate but significant positive impact on higher-order learning, creativity and understanding. Their meta-analysis showed that AI technologies can enhance educational outcomes and deepen learning in a variety of higher education contexts.

Research Gap

Though, the international literature on the role of artificial intelligence in language learning is growing in volume, empirical evidence from Pakistan is still limited. While research on the adoption of online learning and educational technology in general has been widely carried out in the Pakistani context, the study on the university English language teachers' perceptions, usage, challenges, and institutional support regarding the use of AI in language teaching is limited. Furthermore, there is limited research focusing on a case study methodology and

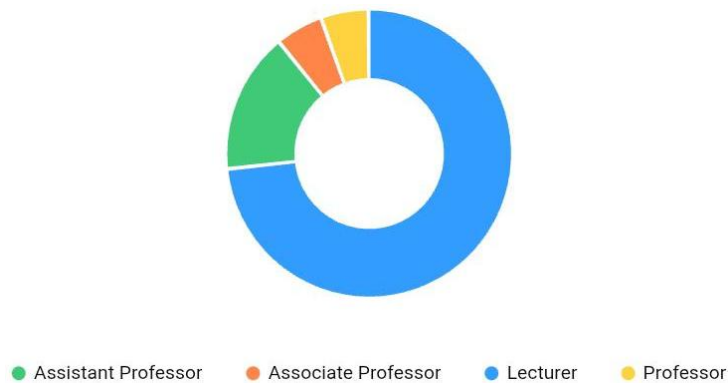
exploring the pedagogical implications of generative AI in Pakistani university classrooms. Thus, there is a gap in understanding of the attitudes and use of AI tools like ChatGPT and other Generative AI in English language teaching by Pakistani University teachers. To fill this void, the current study aims to examine the teaching learning process of AI in English Language Teaching (ELT) in Pakistani university classrooms through teachers' experience, perceptions, challenges and the role of institutional support. The study seeks to offer implications for language education pedagogy and policies in Pakistan and provide context-specific evidence to support the expanding knowledge base on the use of artificial intelligence in language education.

FINDINGS AND DISCUSSION

This section offers analysis and discussion on the findings as per the literature review to find consistency and contradictions with the available literature on AI-assisted English language teaching.

Demographic Information of the Participants

The demographic data regarding respondents' academic positions revealed that most participants were serving as Lecturers (73.7%). Assistant Professors represented 15.8% of the sample, while Associate Professors and Professors each accounted for 5.3%.

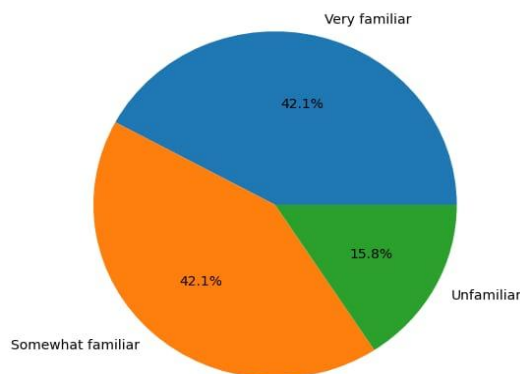


This distribution suggests that the study predominantly captured the perceptions and experiences of lecturers, who constitute the largest segment of teaching faculty in higher education institutions. The inclusion of senior academic staff, although limited, provides additional perspectives from more experienced faculty members.

Familiarity with AI Technologies

The participants were asked to report their familiarity with AI technology that are usually used, or could possibly be used in English language teaching in Higher education.

Figure 4.2: Familiarity with AI Technologies

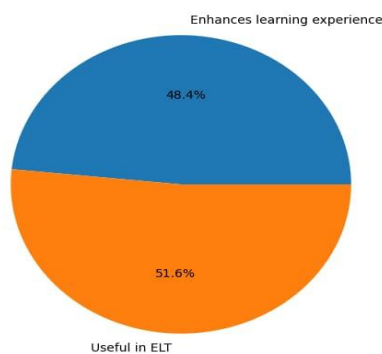


As we can see in the above pie chart, it suggests that the participants have a good familiarity with AI technologies. Specifically, 42.1% reported they were very familiar with AI tools while another 42.1% said they were somewhat familiar. 15.8% said they were not familiar with AI technologies. The overall distribution shows that ELT teachers in colleges and universities have already encountered AI to a certain extent in their professional life. The results are indicative of an emerging technological awareness, consistent globally with the adoption of technology in education. These findings are with that of Kasneci et al. (2023) and Tlili et al. (2023), who pointed to the incorporation of generative AI tools into the conversation and practice of ELT. The findings suggest that, despite the relative underdeveloped state, Pakistani English language teachers are gradually aware of the use of AI in various applications, probably through professional networks, institutional efforts, or personal research.

Teachers Views Regarding the Perceived Benefits of AI in English Language Teaching

The teachers' views regarding the perceived benefits of AI in ELT classroom are given in pie chart 4.3.

Figure 4.3: Perceived Benefits of AI



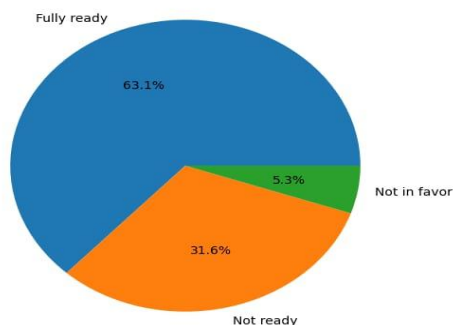
According to the analyzed data, there was a prevailing sense of the advantages of using AI in ELT. The majority of participants (78.9%) felt that AI improves the learning experiences of students and 84.2% felt that AI is very useful in English language teaching. The findings indicate a high level of confidence in AI tools as pedagogical tools. The teachers' views on AI aligned with the potential to enhance teaching efficiency, boost student participation, and offer extra academic assistance, especially in language acquisition settings that require personalized feedback and practice.

The results are similar to Davis's (1989) Technology Acceptance Model, which states that perceived usefulness is an important factor in technology acceptance. The results also confirm the findings of Luckin et al. (2016) that AI can enable personalized learning paths and improve instructional decisions. Likewise, Kohnke, Moorhouse and Zou (2023) underscore the benefit of AI to language education activities, including lesson planning, grammar instruction, vocabulary development and assessment design. Moreover, Lo (2023) found that attitudes of teachers toward the use of tools like ChatGPT are generally positive; and research by Saarela et al. (2026) and Fan et al. (2026) indicated that AI tools positively affect student engagement, creativity and learning outcomes. The overall impression of participants in this study was that AI is not a substitute for teachers, but rather a tool that supports teaching.

Preparedness for integration of AI in ELT

Preparedness and readiness of teachers to use AI in ELT classroom is highly important because it makes the very foundation of this investigation. If the teachers are not prepared, the use of AI in English classroom becomes hard to think of.

Figure 4.4: Readiness for AI Integration



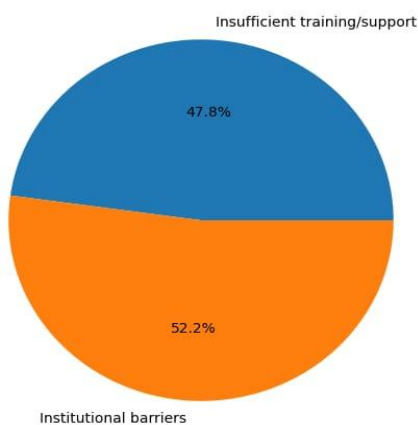
To the question of how well they felt ready, 63.2% said they were completely prepared to incorporate AI into their teaching. A considerable percentage, however, said they were not ready (31.6%), and a small minority (5.3%) opposed the use of AI in teaching. Overall, it appears that there is a positive sentiment about the integration of AI, but not everyone is prepared for it.

There are some important implementation gaps revealed by this variance in readiness. There is widespread positive sentiment towards AI, but less enthusiasm for integrating them into teaching and learning. This is partly consistent with Scherer et al. (2019) who state that the primary prerequisite for adopting a technology is positive perceptions but with proper training, institutional support and self-efficacy. Likewise, Yan (2023) revealed that teachers tend to recognize the potential of AI but are hesitant to adopt it because of inadequate preparation and guidance on how to use it in education. So, while there is a strong willingness to adopt AI, it seems that external support structures are pivotal to practical readiness.

Training and institutional support

Teachers’ training and capacity development of teachers in the use of AI in ELT classroom is very much important. It becomes responsibility of the institute’s administration to provide them trainings and necessary workshops on AI.

Figure 4.5: Training and Institutional Support



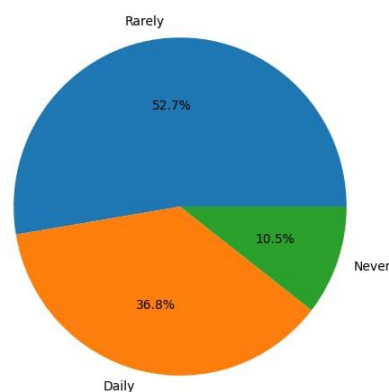
After, analyzing their responses, we can see in figure 4.5. The results indicate that there is a major gap of training and institutional assistance. Over half of the respondents (57.9%) indicated that they were not properly trained in AI technologies, and 63.2% identified institutional barriers to the effective use of AI. This is one of the most serious issues found in the study and it indicates a gap between technological development and institutional readiness.

These findings are very congruent with previous studies. Luckin et al. (2016) have stressed the need for using AI as a tool for the education system to be integrated through a framework of structured professional development and continuous teacher training. Likewise, Tlili et al. (2023) state that for the AI to be able to be adopted in an educational environment sustainably, the organization needs to be ready for this. Additionally, Kilot (2026) points out that institutional support is a significant factor in teachers' decision to adopt AI, and Yan (2023) mentions a lack of training as a major obstacle. Taken together, the findings indicate that although there is a growing focus on AI in Pakistani higher education, the systems might not be ready for its successful application.

Frequency of AI Use in ELT Classrooms

It is said that practice makes a man perfect. Teachers' competence in the use of AI is greatly dependent on the frequency of their AI usage in classroom. This is given in figure 4.6.

Figure 4.6: Frequency of AI Usage



Even though we found a positive attitude towards AI, evidence of its use suggests that it is not widely in practice. For instance, 52.6% said they use AI tools not often, with 36.8% saying they use them daily and 10.5% saying that they don't use AI in their instruction. This is especially important because attitudes do not always reflect behavior, meaning that one's attitude may not be consistently applied. The finding is similar to Davis (1989) and Scherer et al. (2019), who reported that ease of use, institutional support, and user confidence in technology usage in addition to perceived usefulness, play an important role in actual technology use. The results show that enthusiasm for AI is increasing but the use of AI in the regular teaching and learning process is limited. This disparity shows need for more support measures to make positive perceptions become consistent instructional use.

AI Tools that Teachers Use in ELT Classrooms in Pakistan

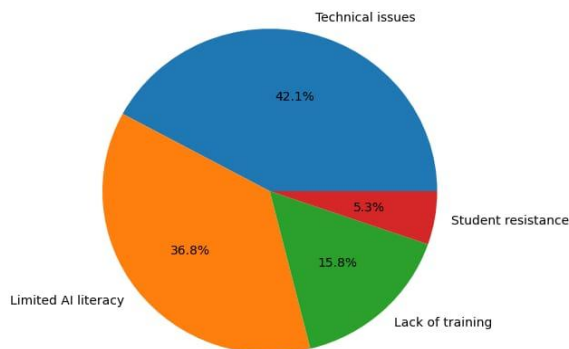
ChatGPT was the most popular AI tool, with 73.7% of respondents indicating that they are using it in their instruction. This dominance is indicative of the worldwide surge in the use of AI in education, with ChatGPT emerging as one of the most user-friendly and adaptable tools for academic work.

This discovery is consistent with ChatGPT being identified by Kasneci et al. (2023), Lo (2023) and Kohnke et al. (2023) as one of the key tools for lesson planning, content creation, conceptual explanations and assessment development. It can be explained that its popularity is due to its user-friendliness, the conversational approach in which it operates and the fact that it offers relevant answers that are suitable for the situation in which it is used, which is why it is particularly useful in the context of teaching the English language.

Challenges in integration of AI in ELT Classrooms

In the evolving AI world, teachers, might face challenges and problems in the integration of AI in ELT classroom due to various reasons. The following figure 4.8. shows the challenges faced by English teachers in integrating AI in English classrooms.

Figure 4.8: Challenges in AI Integration



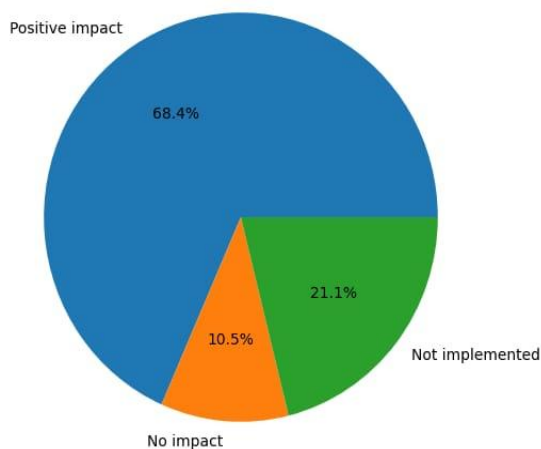
Participants had detected some difficulties in the integration of AI in the teaching practice. Technical issues (42.1%) and limited AI literacy (36.8%) were the most common problems, followed by a lack of training (15.8%) and student resistance (5.3%). The results indicate that the main obstacles to AI adoption are structural and knowledge-based and not attitudinal.

Many teachers and institutions are still in the initial phase of digital transformation. The findings suggest that technical constraints and lack of AI literacy are among the major hurdles. The findings parallel Yan (2023) who emphasized that insufficient training and lack of knowledge are significant obstacles towards AI usage. In a similar way, Lo (2023) argues that digital literacy is a critical factor in teachers' confidence in utilizing AI tools. Kilot (2026) also states that the level of technological competence has impact on behavioral intention towards AI usage. Interestingly, resistance by the students was the least reported challenge, while the constraints seemed to be at institutional and teacher levels at the present time.

Teachers' views on the role of AI in Students Learning

Interestingly, teachers expressed some good thoughtful views regarding the use of AI for students in their learning. These are given in figure 4.9. and explained below.

Figure 4.9: Perceived Impact on Student Learning



From data analysis, 68.4% of the respondents reported that AI positively impacted student learning outcomes, while 10.5% stated that they did not observe any impact. Likewise, 21.1%

had not used AI in their teaching. Overall, teachers viewed AI more as a resource for enhancing student engagement and learning efficiency than as an agent of language acquisition. These results are consistent with Li et al. (2025). He investigated the review of AI technologies that impact students in learning and engagement (AI is more likely to boost student performance and engagement, 2023). Likewise, Saarela et al. (2026) and Fan et al. AI influences the learner's motivation, creativity and higher-order thinking. The results suggest increasingly acknowledgement of some base cases in which AI adoption achieves beneficial outcomes, particularly in respect to interactive/adaptive language instructional settings.

How AI can affect ELT Classroom? A Qualitative Perspective

Results from the qualitative analysis of open-ended responses showed three big themes: training and professional development, infrastructure and technical support, and ethical and pedagogical concerns. The participants highlighted the importance of structured workshops, seminars, and practical training sessions to enhance AI literacy and integration in the classroom. They also emphasized the need for stable internet connectivity, access to digital devices, and institutional subscriptions to AI platforms as key infrastructural needs. Different participants (Ps) provided different views majority of which pertains to training on part of university. However, some of the exact and diverse views are as:

AI is still in transitional stage. Its use and outcome is not authentic. Students solely relying on ChatGPT are getting incompetent. I think we should focus more on enhancing the intuitive capabilities of the students instead of making them dependent on AI (P3).

To focus on the technicality, and provide full pledged facilities to Trainers in order to train their students. (P10)

The university should provide stable internet. They should arrange trainings to utilise AI in a better way (P16).

If trainings and sessions are arranged for teachers, they will help us to improve our literacy about AI integration in the classrooms. Then we will be able to guide our students in a better way (P21)

From the above views, it can be deducted that teachers are in higher need of training and proper facilitation from University's administration. Furthermore, some teachers raised questions on the ethical use of AI. Concerns with using AI in education ranged from concerns about the dependency of students on AI tools to a decrease in critical thinking skills, potential for plagiarism, and concerns about the reliability of AI-generated material. These concerns supports the concerns raised by Kasneci et al. (2023) and Lo (2023) about indiscriminate, uncritical use of generative AI in education without proper monitoring.

CONCLUSION AND RECOMMENDATIONS

To sum up, according to the findings of this research, most of the English teachers have positive perceptions regarding AI in their respective institutions in Pakistan. It is believed that AI can play an important role in improving the effectiveness of teaching and contribute to personalized learning experiences while increasing learner engagement. Results are very much aligned with the Technology Acceptance Model suggested by Davis (1989), specifically the perceived usefulness effect on the acceptance of the technology. In spite of the optimistic predictions, the implementation gap is very evident. While teachers are ready to use this technological innovation, its integration into classroom processes appears to be underdeveloped. There are several factors accounting for this state of affairs, including the lack of training, institutional support, technical issues, and poor AI literacy. On the whole, teachers view AI as complementary, but not substitute, of their teaching skills and competence.

It is highly recommended to ensure effective implementation of AI-based innovations in Pakistani universities in order to ensure that their integration will become sustainable and

beneficial. Therefore, efforts should be made to move from the awareness and interest in the topic to the creation of supportive mechanisms. To ensure the sustainability and effectiveness of AI integration in Pakistani higher education, the focus should shift from just being aware and enthusiastic about AI to establishing structured support systems. This involves extensive professional development opportunities, better technology support, well established ethics standards and ongoing institutional support. If these are not implemented, the possibilities of AI in education may not be realized, despite the positive attitudes and interest among teachers.

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