

The Influence of Artificial Intelligence on the Writing and Speaking Competence of Pakistani Undergraduate ESL Learners

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Abstract

This study aimed to identify the influence of Artificial Intelligence (AI) on writing and speaking competence of undergraduate ESL learners in Pakistani universities. This mixed methods study employed triangulation to explore the research questions through a combination of qualitative and quantitative methods. A survey questionnaire dispensed to 550 ESL learners revealed diverse opinions about AI's role in improving their English writing and speaking competency. Most of the learners perceived AI tools as beneficial, reporting enhancements in their English writing and speaking competence. However, concerns about over-reliance on AI and the potential for plagiarism were found to be prevalent. Ten Teachers were interviewed to know of their opinion about the role of AI, a few of whom exhibited hesitation in promoting AI tool usage, majorly fearing it may foster dependency. Despite these apprehensions, the teachers acknowledged AI's capacity to provide instant feedback and support to learners' progress in writing and speaking skills.

Key words: Artificial Intelligence (AI), Pakistani ESL Learners, Undergraduate, Writing and speaking competence

Introduction and Background

The digital revolution of Artificial Intelligence (AI) is gaining more and more popularity in modern times with reference to its drastic influence on education, language acquisition and

self-regulated learning (Şişianu & Puşcaşu, 2024; Alhalangy & AbdAlgane 2023; Wei, 2023). Today's ESL learners are fortunate to live in an era of technological abundance. A profusion of digital platforms and availability of a vast variety of applications cater to their specific needs, transforming their learning experiences into something more engaging, constructive, effective, virtual and accessible life (AlTwijri & Alghizzi, 2024; Zainol, 2023). Aljohani (2021) conducted a survey in Saudi Arabia and highlighted teachers' and students' positive perceptions towards AI for English language learning tasks like grammar, spellings and pronunciation. This trend likely extends to Pakistan, where affordable access to technology is increasing. However, the influence on English language learning needs further exploration.

Learning English language has always been an important and crucial activity for Pakistani ESL learners (Khan & Ghani, 2024; Shahid et al., 2024). Being taught through traditional methods and presence of intricacies of grammar and sentence structure, coupled with vocabulary gaps, wrong spellings and mispronunciation of words often impede fluency and hinder Pakistani ESL learners' confidence in flawless communication (Khan & Ghani, 2024; Bashir, 2019). Such hurdles become a major cause of frustration for ESL learners who lack access to native-speaking peers or immersive environments to practice their English writing and speaking skills.

In the contemporary times, a lot of research is being done regarding the application of AI assisted language learning strategies and their resultant influences on learners in the Western context. There is a dearth of research on the influence of utilizing AI assisted tools for undergraduates in Pakistani public sector university context to see how it supports learners' language learning activities. This study, therefore aimed to investigate the influence of AI on productive skills (writing and speaking) of Pakistani ESL learners. A further aim was to explore whether Pakistani undergraduates in this study are really benefitting from using AI tools or not.

Artificial Intelligence (AI)

Artificial intelligence (AI) hints at the simulation of human intelligence processes by digital machines, particularly computer systems (Ani-Rus et al., 2023). The culmination of technological advancement has paved the way for progress in digital technologies. Coppin (2004) defines Artificial Intelligence as the capacity of computers to adapt to new settings, make adjustments and deal with unforeseen circumstances, resolve problems, provide satisfactory answers, design plans, and carry out other multifarious tasks that call for some amount of intelligence. Thus, AI can be

taken as an influential and commanding instrument which accomplishes various tasks like developing innovative teaching strategies, stimulating group learning, integrating learning and making individualized instructions meeting the interests and intellectual requirements of individual learners (Nguyen et al., 2023). Integrating AI-generated prompts like roleplaying, comprehension quizzes, question answer sessions, pronunciation practices and listening tasks into ESL classrooms ultimately enhances teaching and learning experiences while mitigating potential risks (Snashall, 2023; Srinivasa et al., 2022). AI is just like a smart friend who assists the ESL learners in practicing and acquiring English language anywhere anytime, so it's not just a tool for learning rather a good partner which makes the language journey more effective, enjoyable and empowering (Astika, 2025).

The Power of AI in Empowering ESL Learners

AI-powered tools empower ESL learners by personalizing their learning experiences as they offer immediate and comprehensive feedback on grammar, vocabulary usage, correct sentence structure, accurate pronunciation and fluency etc., allowing students to identify and rectify their mistakes efficiently, ultimately accelerating their progress in language learning (Dhanapal et al., 2024; Jiang, 2022; Mohammad Ali, 2023). Additionally, AI-driven conversation practice tools can simulate real-world interactions, providing a safe space for learners to improve their speaking and writing skills without the fear of judgment (Javed, 2024). According to Jesudas (2025), AI has tremendous capacity to provide adaptive as well as individualized learning experiences for ESL learners to strengthen their language skills i.e reading, writing, listening and speaking which are usually unavailable in traditional classroom settings. AI-generated instant feedback escalates learners' confidence in their written and spoken abilities, motivating them to take risks in their language learning process and face the language learning challenges with greater adaptability (Ahmed et al., 2025).

Integration of AI-powered tools into English teaching makes it easier, less time consuming and more effective not only for the students but also for the teachers as well, providing them with innovative and up to date teaching material for English language teaching (Konyrova, 2024; Kumar, 2023). These synchronous feedback tools have the capacity to produce automated

sentences in response to a short prompt and guide learners about the correct pronunciation of words or sentences to enhance their deep learning.

According to Alharbi (2023), AI-powered writing/speaking assistance tools possess great potential to improve teaching and learning processes in English language classrooms only when they are integrated under the supervision of language instructor or teacher. Godwin-Jones (2022) believe that the dynamic interplay of ESL learners, the software and instructional environment in the form of English teacher's mediation in the learning process through AI tools enables the learners to become informed consumers of language technology.

Methodology

A self-reporting questionnaire was developed in English language comprising a total of 16 items that gauged information on the respondents' experience with AI tools and their resultant influence on their writing and speaking skills. The respondents were asked to report on the questionnaire items using a four-point Likert scale (1=Strongly Agree; 2=Agree; 3= Disagree and 4= Strongly Disagree) to show their Agreement or disagreement regarding the influence of AI tools on their English productive skills. The neutral option was not used intentionally to avoid respondents' ambiguity across response categories as propagated by Beamish (2008). The questionnaire respondents were 550 second semester students of undergraduate BS program enrolled in various disciplines in a Pakistani public sector university.

The data was entered into and analyzed through SPSS v29. Percentages and frequencies of responses to each item in each sub-section were then analyzed to find out the percentage of respondents being influenced by the usage of AI tools. The data was collected and presented in the form of two separate tables to show the influence of AI on their writing and speaking skills. Dichotomous percentages for the two agreement points (Combined agreement) and two disagreement points (Combined Disagreement) were also analyzed for all items for both the skills. The Mean score for all the items was analyzed.

Ten ESL teachers teaching English to undergraduate students in a Pakistani public sector university were interviewed to know about their perceptions regarding the influence of AI tools on their students' writing and speaking skills. A semi-structured interview was carried out individually with the participants to explore their observations and experiences regarding AI's

usage. The focus was on aspects like perceived changes in ESL learners' grammar, vocabulary, pronunciation and communication skills, their dependence on AI tools and potential strategies for integrating AI efficiently and effectively into writing and speaking instruction. Thematic analysis was used to identify recurring themes in the interview transcripts. Integrating qualitative findings with quantitative ones in the discussion section provided a comprehensive understanding the influence of AI tools on ESL learners' productive skills. Triangulation enriched the analysis, enhancing validity and reliability of the findings.

Quantitative Findings

The aim of this study was to investigate students' and teachers' perceptions on the influence of AI on the writing and speaking competency of Pakistani ESL learners. The findings of Table 1 show learners' perceptions about AI's influence on their Writing competency and those of Table 2 show the influence on their Speaking competency.

Table 1

Influence of AI Tools on ESL learners' Writing Competency

	Statements	SA	A	DA	SDA	CA	CDA	Mean
1.1	I have used AI writing tools (e.g., Grammarly, QuillBot, Meta AI & ChatGPT etc.) for my ESL writing tasks	42.0	52.0	6.0	2.0	94.0	6.0	1.82
1.2	I am comfortable using AI writing tools to improve my English writing	40.0	56.0	4.0	2.0	96.0	4.0	1.84
1.3	I find AI writing tools to be user-friendly and easy to navigate.	30.0	60.0	10.0	0.0	90.0	10.0	2.06
1.4	AI writing tools have helped me to identify and correct grammatical errors in my English writing	20.0	60.0	20.0	0.0	80.0	20.0	2.20
1.5	AI suggestions have improved the clarity and flow of my writing	24.0	62.0	14.0	0.0	86.0	14.0	2.08
1.6	I rely on AI instructions for forming English sentences and avoid developing sentence structure on my own	10.0	28.0	48.0	14.0	38.0	62.0	3.28

1.7	Overreliance on AI tools has hindered my ability to develop my own writing style	10.0	34.0	50.0	6.0	44.0	56.0	3.08
1.8	I find myself simply accepting AI suggestions without understanding the reasoning behind them	8.0	30.0	44.0	18.0	38.0	62.0	3.34

Note: SA=Strongly Agree (1); A =Agree (2); DA= Disagree (3); SDA= Strongly Disagree (4); CA=Combined Agree; CDA=Combined Disagree

The findings for the influence of AI on ESL learners' writing competency (table 1) revealed that the majority of Pakistani undergraduate learners have preferably used AI writing tools to take guidelines to improve their writing skills (items 1.1 and 1.2) with Mean scores 1.82 and 1.84 respectively. The results for item 1.3 indicated that 90% learners found AI tools user friendly (Mean=2.06) whereas 10% felt quite opposite to it. The findings further revealed that 80% learners (item 1.4, Mean=2.20) believed that AI writing tools like Grammarly, Meta AI and Quillbot etc. helped them to correct their grammatical errors and sentence structures through practice activities leading to improving the efficiency and quality of their written expressions. The remaining 20% respondents indicated dissatisfaction with the positive influence of AI tools on their written competency. The data for item 1.5 (Mean=2.08) highlighted the agreement of 86% learners with the fact that AI tools have helped them in enhancing their written expressions.

The data for item 1.6 (Mean=3.28) indicated that 38% learners felt reliant on AI tools for creating innovative written expressions whereas 62% of learners disagreed to this statement showing that they perceived that AI helps them to become independent English writers. The results for item 1.7 (Mean=3.08) again showed learners' mixed response towards their overreliance on AI tools. The data demonstrated that 44% respondents believed that they have developed over-reliance on AI tools whereas 56% respondents showed strong disagreement with the statement. The findings for item 1.8 (Mean=3.34) showed that 38% respondents felt themselves using AI tools recklessly and that they have become fully dependent on them for creating written expressions, whereas 62% respondents disagreed to this statement showing that they took help from AI given word choice but tried to make accurate and concise sentences on their own as well. Their response indicated that AI powered tools offer benefits like speed, accuracy, scalability and versatility for written expressions.

Table 2

Influence of AI Tools on ESL learners' Speaking Competency

	Statements	SA	A	DA	SA	CA	CDA	Mean
2.1	I have used AI speaking tools (e.g., ChatGPT, Chat AI & AI Voice Generator etc,) for helping with my ESL speaking tasks	26.0	54.0	14.0	6.0	80.0	20.0	2.20
2.2	I am comfortable with using AI speaking tools to improve my English speaking skills	30.0	48.0	20.0	2.0	78.0	22.0	2.16
2.3	I find AI speaking tools to be user-friendly and easy to navigate	26.0	54.0	14.0	6.0	80.0	20.0	2.20
2.4	AI speaking tools have helped me to correct my pronunciation	24.0	50.0	24.0	2.0	74.0	26.0	2.30
2.5	AI suggestions have improved the quality and fluency of my English speech	22.0	52.0	16.0	4.0	74.0	26.0	2.30
2.6	I rely on AI instruction for speaking in English and avoid developing sentence structure on my own	12.0	22.0	56.0	10.0	34.0	66.0	3.32
2.7	Overreliance on AI tools has hindered my ability to develop fluency in my speaking skill	12.0	22.0	54.0	12.0	34.0	66.0	3.32
2.8	I find myself simply accepting AI suggestions without understanding the reasoning behind them	12.0	24.0	50.0	14.0	36.0	64.0	3.30

Note: SA=Strongly Agree (1); A =Agree (2); DA= Disagree (3); SDA= Strongly Disagree (4); CA=Combined Agree; CDA=Combined Disagree

The findings of table 2 indicate that 80% respondents reported that they have used AI tools for improving their spoken English (Item 2.1) whereas 20% respondents reported to have not used AI tools (Mean=2.20). This indicates the fact that university undergraduates take more help from AI tools for improving their writing as compared to enhancing their spoken English skill. The reason behind this could be the fact that in Pakistani educational institutions students' proficiency is mostly measured in the terms of good performance in written work so they try to take maximum help from AI tools to enhance productivity in the written work.

The data for item 2.2 (Mean=2.16) highlighted that 78% respondents felt comfortable while using AI speaking tools like voice generators or ChatAI etc., whereas 22% respondents felt quite

opposite to it. The results for item 2.3 (Mean=2.20) indicated that 80% respondents perceived AI speaking tools to be user friendly and easy to navigate. The data for items 2.4 and 2.5 (Mean=2.30 each) accentuated the fact that 74% respondents showed agreement to the statement that AI speaking tools have helped them to correct their pronunciation through communication practices or practical conversation activities ultimately bringing enhancement in their spoken communication in the form of fluency and correct pronunciation. On the other hand, 26% respondents showed disagreement to this statement revealing a different opinion.

The results for items 2.6 and 2.7 (Mean=3.32 each) underscore the reality that 34% respondents have developed over-reliance on AI speaking tools for their spoken tasks whereas 66% respondents disagreed to this statement. These figures bring into light the fact that Pakistani undergraduates lack in spoken communication and to certain extent they are reliant on AI tools for their tasks. Lastly, the results for item 2.8 (Mean=3.30) again indicated the opinion of 36% learners in favor of the fact that they used AI speaking tools thoughtlessly not to improve their oral expressions but just to go through some tasks bluntly and they felt themselves dependent on this technology for any kind of spoken activity. However, 64% respondents reported not feeling like this.

Qualitative Findings

The qualitative insights gathered from ESL teachers presented a complex picture of AI's potential role in ESL learning of Pakistani students. Although the majority of the teachers appreciated the productivity and interactivity of AI tools, they also showed their concerns about learners' over-reliance on them and also for the marginalization of human element in teaching as human interactions improve communication and conversational skills leading to comprehend various cultural contexts. The participants' responses are mentioned by using the participant numbers T1, T2, T3, ..., T10 here. Two major themes emerged from the interview data: Integration of AI into English classrooms and its positive influences, and concerns regarding AI tools.

Integration of AI into English Classrooms and its Positive Influences

Mostly the teachers in this study felt that it is the need of the hour to motivate ESL learners to integrate AI writing tools like Grammarly, claud.ai and Bing.com etc. in ESL teaching and learning to improve their spellings, grammar, sentence structure, and voice bots, AI voice Generator, Text

to Speech Online tools etc. to improve their pronunciation and communication skills. Participant T2 said:

I ask my students to take help from these tools in a positive way. When they use such tools appropriately, they get benefits, for instance, if they use the QuillBot, it can paraphrase very difficult paragraphs or ideas into simple language which is easily understandable for the learners. Such tools are highly beneficial for producing best content writings as well.

Participant T4 reported that: “Such tools boost the confidence of the students by making them capable of writing in English with clarity of thoughts and producing essays, articles and creative stories”. Another participant, T7 commented that: “The writings of students used to lack in coherence and clarity...The discovery of AI powered tools like Grammarly and Speechling has enhanced their writing and speaking skills and they have shown significant progress”.

Participant T8 told that: “I recommend AI...because due to interactive sessions and immediate feedback, learners stay engaged in the language learning process which is crucial for their long-term learning”. The findings revealed that since AI tools analyze the individual performance of ESL learners and adapt the learning content accordingly so such personalized approach seems instrumental in addressing every learner’s specific weakness and strength, making their language learning more effective for each one of them. The integration of AI tools is crucial in ESL classrooms to improve the effectiveness and efficiency of language learning process. Participant T9 commented: “...its immediate and constructive feedback reduces the fear of failure from the minds of language learners” which leads towards a continuous and energetic pursuit of language proficiency.

Concerns regarding AI tools

Although most of the ESL teachers in this study acknowledged the worth of AI tools and recommended them for language learning, yet a deep concern was also present there in their minds regarding the over-reliance of learners on such tools which leads towards learners’ dependency on them. Teachers who restrict AI tools in ESL classrooms often prioritize a deeper understanding of language acquisition. They believe that fluency is not just about grammatically correct sentences, but also about developing the thought processes behind them. AI tools, while helpful with grammar

and vocabulary suggestions, cannot replicate the active learning and critical thinking required to truly grasp a language. Participant T1 showed her concern by saying that:

Relying on AI tools for writing and speaking can hinder students' ability to form their own ideas and express them confidently, because language acquisition thrives on active participation, like discussions, debates, and original writing tasks, which AI tools cannot fully replace.

Participant T3 was also in rapport with others while communicating the fact that although AI tools guide well but their "...unrestricted and immoderate usage kills creativity" as it "negatively stifles originality". She suggested for the integration of such tools with "human feedback" to gain maximum out of such interaction.

Participant T5 also showed her concerns regarding the deteriorating influence of AI tools specifically on the writing skills of ESL learners by indicating the fact that:

I have witnessed that students misuse such tools by directly copy pasting material and not taking any help from their critical thinking skills which ultimately hinders their creative writing ability. So, I believe strict plagiarism policies must be introduced by the institutes regarding the usage of such tools to keep students away from any malpractices.

She indicated the fact that copy pasting activity has become so easy for the learners that instead of taking assistance from their thinking faculties, they copy the material and present it as their own for gaining good grades. Participant T6 contended that: "The focus should be on fostering a learning environment where students learn the 'why' behind the language, not just the 'how' of grammatically correct sentences". Participant T7 pointed out that although she found many positive changes in her students' English writing skills but at the same time she also spotted "immoderate tendency among learners" to over-rely on such tools which affects "the social as well as communicative aspects" of language learning process. She advocated for the "...availability of human interaction and personal engagement with an easy access to digital resources for escalating language learning outcomes" for ESL learners.

While AI provides excellent tools for language learning, as commented by participant T10 “... it should complement traditional learning methods rather than replace them”, because combining AI with classroom learning can provide a more rounded educational experience for ESL learners.

Discussion

The overall findings reveal that mostly Pakistani undergraduate ESL learners use AI tools for performing their written and spoken tasks in English and they believe that AI tools have positive influences on their writing and speaking competency. The quantitative findings show that AI writing/speaking tools offer Pakistani ESL learners valuable support in grammar, vocabulary, spellings, pronunciation, practical conversation and feedback; however, overdependence can hinder independent learning. University limitations like unreliable internet or lack of teacher training can further restrict effective use of AI tools. Striking a balance between AI assistance and fostering core writing/speaking skills remains crucial. Therefore, to get advantage from the potential of AI-powered tools, a balanced approach is required in ESL classrooms. AI must be used as a complementary tool along with human interaction in the form of ESL teachers' experienced expertise in order to cope with the challenges and optimize the language learning process. It is evident from the findings that immoderate and unrestrained use of AI-powered applications must be checked at undergraduate level for making students compelled to get involved in practical usage of language. For gaining real conversational skills and empowering themselves with the ability to exchange information effectively in English language, the learners ought to have direct usage of language in their real life situations.

The findings of this study resonate with the findings of research done by Ullah et al. (2024) who promoted the fact that learning environments aided by AI tools positively enhance the intellectual development and attain broader educational outcomes in Pakistani universities where they have real potential for transforming personalized learning and creating professionalism. However, apprehensions regarding their misuse by the students are also present side by side. The teachers in this study believed that strict measures must be taken by the institutions to introduce plagiarism policies which can keep ESL learners away from becoming prone to malpractices. Over-reliance or excessive dependence on AI-tools must be avoided as it may hinder learners' progress in real-

world conversational skills (Ekizer, 2025). Although AI-driven tools cast great impact on technical specifications of language acquisition but they seem insufficient in transmitting the cultural context of the language essential for gaining language proficiency in practical world situations (Jesudas, 2025). This is what Shakil and Saddiq (2024) also suggested in their quantitative study that incorporation of ChatGPT and other tools in ESL classrooms has become a real challenge for Pakistani universities where the analytical writing skills of ESL learners are deteriorating as a result of plagiarizing subject content.

Firdaus and Nawaz (2024) have propagated the fact that ESL teachers in Pakistan support the use of AI technology in the educational institutions for English language teaching only if the barriers are prevailed over regarding its implementation. Fathi et.al. (2025) conducted a research in Iranian context and came up with the conclusion that human-centered support is essential to integrate AI-Powered tools in to ESL classrooms instructions to optimal the overall effectiveness of language teaching and learning process. The findings of the present study reveal that the ESL teachers have witnessed a drastic change in the written/spoken expressions of ESL learners owing to utilizing AI tools, so such technologies must be used under their supervision with the core purpose to optimize productivity in language learning process. It is observed that usually they take assistance from these tools and do copy pasting of the presented material without evaluating its worth or grasping the conceptual depth which ultimately results in very casual demeanor towards language learning.

The present study suggests that learners should be given chances to get involved in classroom discussions and other participatory activities to be able to utilize their analytical abilities in such written/spoken tasks more positively. Instead of mere rote learning and memorization, they must be guided by the English teachers about encountering and using language in their contexts for meeting their individual needs. Such real-world language interactions in the learners' environments not just focus on the accomplishment of textbook tasks but also enable them to become efficient learners.

Conclusion

This study concludes that the potential influence of AI writing/speaking tools can be a double-edged sword for Pakistani ESL learners at public universities. The integration of AI tools in ESL area presents a multifaceted picture with both the advantages and challenges. On the positive side,

they can help identify grammatical errors, correct sentence structures and give chances for practical conversations to improve students' oral/written communication skills. The findings show that students use these tools for language learning and improving clarity and flow, potentially boosting their overall written/oral expressions. However, there is a risk of overreliance.

A number of students and teachers in this study however agreed that leaning too heavily on AI suggestions for sentence structure can hinder their ability to develop their own writing style and critical thinking skills. While it can be a helpful aid, it should not replace one's own efforts to learn the intricacies of English sentence structure and expressing oneself clearly in English language. The teachers believed that owing to their interactivity and adaptability, the modern technological advancements are seen as a major step ahead from traditional language teaching methods with the ability to tailor individual learner's needs for language learning. However, ESL learners and educators disagreed with its excessive use as it will be a threat to them. They ask for making strict policies at institutional level to ascertain the originality of ESL learners' creative work in English. The overall findings revealed that ESL teachers have shown interest in implementing AI tools in ESL classes owing to the positive results they get from learners.

According to the study findings, it can be suggested that AI-assisted tools must be utilized in English language learning settings to help learners develop their own language learning skills and sub-skills as they are provided with the required feedback and comments on different language skills in order to contribute to their language achievements in general. The findings supported the notion that AI-mediated language instruction in Pakistani universities holds promise in revolutionizing language learning, and it highlights the positive influence of AI-driven educational technologies in the realm of ESL language education.

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