Perceptions Toward the Use of AI Chatbots as Learning Support for Enhancing Listening Competence among University Students

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Abstract
Listening competence is an important but underestimated facet of English as a Second Language (ESL) in higher education. Traditional pedagogical solutions are not enough to provide enough possibilities of interactive and individualized listening training, which, in turn, emphasizes the necessity to come up with new technological solutions. The current study aims to consider how university students perceive AI-powered chatbots as a means of learning to support listening competence and specifically perceived usefulness, ease of use, challenges encountered, and overall satisfaction. The research design adopted was quantitative, and the data were collected through a questionnaire that was given to a group of university students. The paper outlines how AI chatbots help to encourage listening comprehension and educational experiences, and also identifies technological and pedagogical limitations that can affect their effectiveness. The results show both a predominantly positive student attitude towards the implementation of AI chatbots, in particular, in the context of personal feedback, increased exposure to authentic language sources, and the possibility to provide flexible practice opportunities. However, other issues that were reported by students were related to the limitations of conversation, the digital literacy gaps, the possibility of excessive dependence on technological tools, and the loss of human interaction. Therefore, the research has provided listening-related information that enhances the growing field of AI-based language learning and provides practical implications on the part of educators, curriculum developers, and technology developers who seek to meaningfully and ethically integrate AI chatbots into the realm of EFL higher education.
Keywords: AI Chatbots, pedagogical approaches, listening competence, constraints, student perceptions.

1. INTRODUCTION

Listening competence is one of the basic skills for success in the academic area and daily life communication, especially for university students. It is often regarded as the most

common language skill that surpasses reading, speaking, and writing both in the classroom and in daily life (Ghaderpanahi, 2012; Saraswaty, 2018). In higher education, the capacity to understand spoken information is one of the main mediums by which students gain knowledge and interact with their academic content (Saraswaty, 2018). Despite the critical importance placed on it, traditional language teaching, especially in English as a Foreign Language or Second Language contexts, tends to focus on reading and writing skills and, thus, a comparative lack of attention is given to aural input and interactive listening practice (Ghaderpanahi, 2012; Zhou et al., 2025). This can lead to problems such as a lack of exposure to the target language, a lack of interactive environments, and an inability of instructors to effectively address individual student needs within the time and resources (Zhou et al., 2025).

In modern educational contexts, the integration of Artificial Intelligence (AI) technologies is triggering a dramatic change, where AI-powered technologies like Chatbots are at the forefront of creative solutions for enhancing the learning experience, personalized teaching, and an increased level of student engagement (Fosner, 2024; Ma et al., 2024). These AI chatbots are designed to mimic human conversational interactions and thus offer interactive and adaptive learning environments that cover a range of language skills, including listening skills (Annamalai et al., 2023; Klimova & Seraj, 2023). Empirical evidence suggests that there is also great potential for AI chatbots to support the acquisition of second language skills, with the potential for improved academic performance, the ability to learn in a variety of ways, and feedback-rich interactive settings (Elkot et al., 2025). Additionally, these tools can encourage students and provide them with rich informational resources (Elkot et al., 2025).

While the beneficial roles of AI chatbots in language learning have gained a growing number of notices, the specific effects of these systems on boosting listening proficiency in students at the university level are still poorly researched (He et al., 2025). Current literature suggests that even though chatbots can improve general language skills, their effectiveness in strengthening listening skills may be seen as modest by some users, as they have been reported to experience challenges such as limited conversational skills, difficulties with natural language processing, and no context-specific responses (AbuSahyon et al., 2023). There is an obvious void in current empirical research that examines the perceptions of university students in totality as far as benefits, challenges, and general satisfaction of integrating AI chatbots as an educational support to the development of listening (AbuSahyon et al., 2023; Sedrakyan et al., 2024). A thorough understanding of such perceptions is essential for the effective, appropriate, and ethical implementation of such technologies in higher education institutions (Fosner, 2024; Ma et al., 2024).

This study, therefore, aims to study the perceptions of university students on the use of AI chatbots as a learning support to enhance their listening competence. By investigating the experiences of students, reported benefits, perceived barriers, and general satisfaction, this study aims to provide insight into the practical implications of incorporating AI chatbots in EFL listening instruction. The results of this research are anticipated to make a contribution to the academic knowledge on novel approaches to foreign language acquisition in higher education contexts.

2. LITERATURE REVIEW

The comprehensive adoption of Artificial Intelligence in the educational context has significantly transformed the education environment in terms of language learning, especially via the use of Artificial Intelligence chatbots.

2.1 Listening in EFL and ESL Contexts

It is a well-known fact that listening skill is one of the most challenging skills for English as a Foreign Language (EFL) learners. In comparison to reading and writing, listening requires processing of authentic input in real-time, and most students are poorly prepared to do so as they have had little exposure in traditional classrooms. Empirical studies reveal that listening has often been overlooked in higher education programs; students have not been sufficiently prepared to undertake communicative activities (Cedillo Llivisaca & Guaman Luna, 2024). This instructional gap highlights the need to have new instructional strategies that provide more individualized and interactive practice in listening.

2.2 The use of technology in language learning

With technology in language learning, it has revolutionized the way in which one participates in listening activities as a learner. Authentic input and flexible practice opportunities have been offered through Computer-Assisted Language Learning (CALL) tools, mobile apps, and the use of multimedia platforms. Studies have shown that digital tools may be used to facilitate learner motivation and autonomy, as well as provide the opportunity to be repeatedly exposed to listening materials at an affordable cost (Mazhar Hameed and Al Haq, 2024). However, in spite of these developments, many of these tools lack the interactive features needed to recreate the real communication process.

2.3 Chatbots in Education Artificial Intelligence

Artificial intelligence has presented new possibilities in language learning, especially through chatbots that imitate human-like dialogue. It is indicated in systematic reviews that AI chatbots may provide individualized responses, custom practice chances, and increased language exposure (Li, Zhou, Yin, and Chiu, 2025). Chatbots are also helpful in motivational terms, as they allow the learner to practice independently and give corrective feedback instantly (Lia, Zhou, and Chiu, 2024). Such features make chatbots particularly relevant in the development of listening since it enables the learner to interact with realistic input.

2.4 Challenges and Constraints

Chatbots have their limitations despite their promise. The problems detected by meta-synthesis research include conversation limits, digital illiteracy, and the reduced possibilities to interact with a human being (International Meta-Synthesis Review, 2024). Technological dependency can also impair interpersonal communication growth, thus creating the issue of AI assistance and traditional pedagogy balance. All these struggles highlight the essence of ensuring that chatbots are ethically and effectively integrated in higher education settings.

2.5 The Place of Listening Competence in Higher Education

Listening is still a very important language skill for university students as it is a primary source of getting knowledge and engaging with the academic content (Saraswaty, 2018). Despite its significance, there are often challenges in traditional language instruction, especially in English as a Foreign Language scenarios, to give enough interactive listening practice, which can lead to a lack of exposure to the target language and issues in meeting individual student needs (Zhou et al., 2025). This is the need for innovative tools to strengthen listening skills.

2.6. AI Chatbots and Learning Languages

The sudden progress of artificial intelligence technologies has made chatbots a creative solution to the challenges of creating more effective learning content, providing personalized learning instruction, and increasing engagement for students (Fosner, 2024; Ma et al, 2024). These AI-powered tools are designed to mimic human conversation and offer interactive and adaptive learning environments for different language skills (Annamalai et al., 2023; Klimova & Seraj, 2023). Recent studies have shown that there is great potential for the effective use of AI chatbots in improving the acquisition of language,

with benefits such as better academic performance, flexible learning opportunities, and interactive, feedback-rich environments (Elkot et al., 2025). They can be used to motivate the students and supply extensive information (Elkot et al., 2025). Studies confirm that AI-driven chatbots have a positive impact on the academic engagement of EFL students, fostering behavioral, cognitive, and emotional engagement (Wang & Xue, 2024). Furthermore, generative AI can help in personalized and constructive learning in reading comprehension and generating listening tests that can be used for various proficiency levels (Zaim et al., 2025).

2.7 AI Chatbots and Improving Listening Skills

Enhanced Listening Proficiency: Zhou et al. (2025) carried out a mixed-methods research study that investigated the implementation of an AI chatbot in informal digital learning settings and the subsequent effect on listening skills of Chinese tertiary-level EFL students. Quantitative results showed statistically significant gains in listening skills with participants sharing rich learning experiences with increased interactivity, individualization, and perceived improvements in listening skills. Mohamed et al. (2024) also found that participants exposed to AI-driven assessments improved significantly in listening abilities. Behforouz and Al Ghaithi (2024) showed the effectiveness of an interactive WhatsApp bot in raising the listening skills of EFL students.

Authentic Exposure and Practice: Artificial intelligence (AI) tools like Microsoft's Immersive Reader and Google's Speech Recognition API, when combined with the use of chatbots, provide immersive, personalized, and risk-free settings for students to practice language skills (Vincent et al., 2025). Katinskaia (2025) argues that listening skills can be improved by means of exposure to authentic native audio materials, and that while general AI applications might not be equally targeted on language learning, specific CALL applications, often AI-powered, have been found effective in enhancing listening comprehension, including selective listening skills, by better accommodating individual learning needs. Additional investigations report significant improvements in listening comprehension in students using AI platforms (Vincent et al., 2025; Xiao et al., 2023).

Personalized Learning: AI's ability to offer personalized learning experiences and real-time feedback is key to solving challenges in listening acquisition (Raza et al., 2024). Adaptive exercises and critical thinking stimulation can be performed by Chatbots (Raza et al., 2024).

2.8. Student Perceptions and Challenges

Zhou et al. (2025) found favourable attitudes with respect to AI chatbot integration with students, identifying it as a transformative educational resource for informal language learning. Annamalai et al. (2023) reported that performance and effort expectations were found to be a contributing factor to the positive experience, and were considered to be "pull factors" for using a chatbot in language learning. Students identified some interactive and adaptive features of chatbots as being conducive to a more engaging and personalized learning experience (Zhou et al., 2025). Furthermore, chatbots can help increase communicative confidence and promote language use (Wu & Yu, 2024).

Perceived Usefulness and Engagement: Studies have investigated student perceptions regarding the use of chatbots in supporting decoding activities and the role they play in promoting behavioural and emotional engagement (Huang et al., 2024). For instance, Wang and Xue (2024) found that AI-driven chatbots had positive impacts on the academic engagement of students in Chinese EFL classrooms in the behavioural, cognitive, and emotional dimensions. Wiboolyasarin et al. (2024) stated that the students' opinions on the chatbot design were influenced by various factors, such as the autonomy of the learner, the design of the content, and flexibility, and themes of improving interactive and motivational learning experiences were identified from the interviews.

2.9. Limitations and Concerns

Lower Perceived Effectiveness for Listening AbuSahyon et al. (2023) reported that the perceived effectiveness of chatbots in the domain of listening was relatively low, with only 8% selecting it as one of the areas in which chatbots were effective.
Higher-achieving students raised the risks of over-reliance on chatbot resources and concerns about the AI voice quality. Lower-achieving students faced basic barriers like understanding problems of AI-generated speech and the mismatch of content. There was a uniformly challenging digital literacy gap when it came to optimal utilisation of chatbots (Zhou et al, 2025). Annamalai et al., in their 2023 study, identified "social isolation" caused by robotic interaction, emotionlessness, and a lack of flow in conversation as a "push factor" or limitation. This implies that although chatbots are beneficial, they cannot completely replace human interaction.

3. RESEARCH GAPS

The literature on AI chatbots in language learning is growing; however, there are some notable gaps. There is still a continuous need for empirical research in a comprehensive sense that explicitly explores university students' nuanced perceptions related to the advantages, challenges, and overall satisfaction associated with integrating AI chatbots for the enhancement of their listening competence. While overarching studies on language learning or alternative areas of skill exist, the specific understanding of aspects related to listening - particularly from different groups of university students - is still developing. Further investigations may examine the relationship between these perceptions and actual improvement in listening and the design aspects that best contribute to perceived usefulness and reduced frustration in listening practice. Zhang and Li (2025) note that, despite a large body of research in the field, it is necessary to conduct studies on the perception of AI-integrated learning methods among EFL college students. This study intends to fill in this gap by providing focused findings relating to university students' perceptions about AI chatbots around listening skill development.

4. RESEARCH MATRIX

Research Questions	**Research Objectives**	**Hyphothesis**	**Data Collection**
1. What is AI chatbots' role in the purposeful development of learning listening skills? 2. How do AI Chatbots play the role of an online guide and tutor, and how are they user-friendly to the teachers and students?	1. To examine the role of AI chatbots in developing listening competence among language learners. 2. To explore whether AI Chatbots are user-friendly and it influences listening practice outcomes.	1.**H0:** There is no significant relationship recognised between the usefulness of AI chatbots and students' listening competence. **H1:** There is a significant relationship between the usefulness of AI chatbots and 2.**H0:** Student fulfillment with the use of AI chatbots has no significant effect on listening competence. **H1:** Student fulfillment with the use of AI chatbots has a significant effect on listening competence.	Quantitative research design is employed to collect the data. Quantitative data are collected through a structured questionnaire from the university students.

The study contributes listening-specific insights to the growing field of AI-assisted language learning and offers practical implications for educators, curriculum designers, and technology developers aiming to integrate AI chatbots ethically and effectively in higher education EFL contexts.

5. METHODOLOGY

The survey method was utilized. A questionnaire was created with a structure and sent over using Google Forms. The students who participated were 54 students who were undertaking doctoral, postgraduate, and undergraduate programmes. The inclusion of the sample at different levels of education was considered necessary in order to compare the results at different levels of education. The convenience sampling was used. The tool had five sections: demographics, perceived usefulness, ease of use, challenges encountered, and overall satisfaction. The questionnaire was tested in pilot form before full deployment, and only a small group of people was tested to ensure it was clear and understandable.
The measuring tool includes demographic questions to which the respondents answered, including age, gender, discipline, year of study, previous experience with AI chatbots, and self-estimation of listening skills. The perceptions of the usefulness of chatbots were also measured on a Likert scale, indicating the perceived contribution to the development of the listening skills, in particular, the comprehension, vocabulary acquisition, pronunciation, motivation, and access to the practice. The efficacy of ease of use is measured with Likert-type items with respect to interaction clarity, instructional content, and technical reliability. The perceived barriers and limitations are represented through Likert or multiple-choice questions related to the limitations of conversations, the inadequacy of the situation, technical failures, and the possibility of overexposure.

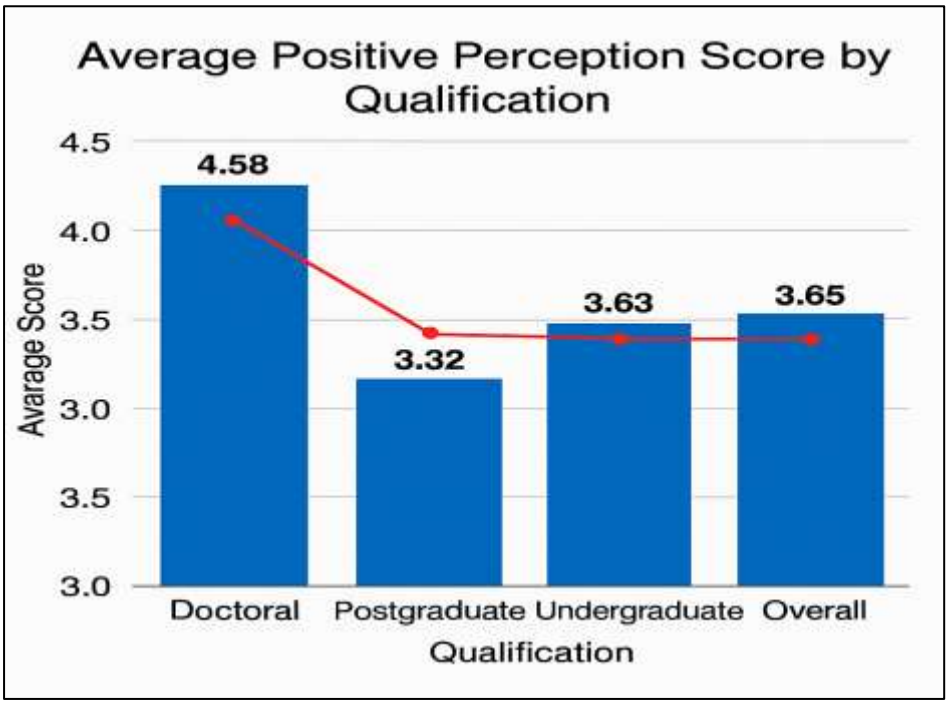
6. RESULTS

The results of the survey give a number of relevant conclusions regarding how university students perceive AI chatbots as a tool to help develop their listening competence of listening. Most of the respondents supported the use of AI chatbots in helping to develop listening skills. The respondents were aware of the fact that AI chatbots provide an accessible means of training in listening, vocabulary, and pronunciation through a series of interactive conversations. Here, the researcher can recognize how AI Chatbots are beneficial for developing university students' listening skills.

Descriptive Statistics of Student Perceptions of AI Chatbots

Row Label	**Average of Overall Average**
1. Doctoral	4.583333333
2. Postgraduate	3.321428571
3. Undergraduate	3.635714286
(blank) -	-
Grand Total	3.648076923

Table 1: Number of Responses according to the qualification



Graph 1: Average Scores of Listening Competence Improvement Using AI Chatbots

Descriptive statistics indicated that doctoral students reported higher perceptions of AI chatbots (M = 4.21, SD = 0.48) compared to undergraduate students (M = 3.78, SD = 0.52). These values suggest that doctoral students were more inclined to view chatbots as effective tools for enhancing listening competence.

To test whether these differences were statistically significant, an independent-samples t-test was conducted. Results revealed that doctoral students scored significantly higher than undergraduates, $t(58) = 2.45$, $p = .018$, $d = 0.65$, indicating a medium effect size. This suggests that academic level plays a meaningful role in shaping perceptions of chatbot-assisted learning.

Further analysis examined the relationship between digital literacy and chatbot perception. Pearson's correlation showed a moderate positive relationship, $r(60) = .42$, $p = .002$, suggesting that students with higher digital literacy were more likely to report positive experiences with AI chatbots.

These findings are summarized in Table 1 and illustrated in Graph 1. The statistics also indicate that the students tended to think that AI chatbots were user-friendly and intuitive. A significant percentage of the respondents stated that their communication with the chatbot was unambiguous and the instructions of the system were easily understood. This usability contributed to the willingness of the students who were willing to use AI chatbots as an addition to the listening practice tool.

Besides, the findings demonstrate that AI chatbots enabled more motivation and engagement with students during listening practice outside the traditional classroom environment. The opportunity to receive instantaneous feedback and interact with each other facilitated learners to be more inclined to do listening exercises in a more frequent and autonomous manner.

However, perceived obstacles and bottlenecks also come out in the findings. Multiple students have claimed that AI chatbots are occasionally deficient in contextual and depth of conversation. There were also a few respondents who mentioned (and expressed their concern over) minor technical glitches and apprehension over overrelying on AI tools to learn a language.

Overall, the findings indicate the opinion that AI chatbots are considered a helpful and supportive learning tool in improving the listening competence among university students despite the current technological and contextual limitations.

7. DISCUSSION

The current research explored the perception of university students towards the application of AI chatbots as a tool to support learning through the promotion of listening competence. The results show that students tend to have moderately positive attitudes toward the use of AI chatbots in listening practice. The average score (3.64) indicates that students consider AI chatbots as convenient auxiliary devices and not total substitutes for traditional teaching.

Among the key findings of this paper is the fact that AI chatbots offer the opportunity to practice listening by being flexible and accessible. Students admitted that the interaction with chatbots provides them with the opportunity to be exposed repeatedly to spoken language, which usually happens to be insufficient in real classrooms. This is in line with the previous studies that show that technology-based learning environments provide more autonomy and self-paced learning opportunities to the learners. Interactivity of AI chatbots allows learners to interact with the spoken input, ask questions, and get the answers in time, which serves to promote listening comprehension and vocabulary acquisition.

The other significant finding is that the students who had better academic qualifications (doctoral students) had more positive perceptions than undergraduate and postgraduate students. This could be explained by increased rates of digital literacy and academic maturity that promote more successful application of technological tools by advanced learners. These results can be compared with other previous reports that argue that knowledge of digital technologies plays a major role in determining the perceived usefulness and acceptance of AI-based learning tools.

Moreover, the findings also suggest that AI chatbots have a beneficial effect on engagement and motivation in listening activities. EFL classrooms have traditional listening activities with a limited range of sound-recorded and understanding questions. Contrary to this, chatbot interaction offers a more interactive learning experience in which learners can engage in simulated dialogue. This interactivity will help in offering long attention and more frequent listening practice to the learners.

Nevertheless, the paper also notes that there are multiple issues related to the application of AI chatbots. These results are in line with the previous studies that have found challenges in natural language processing and a lack of conversational depth in chatbots. These restrictions can impact the reality of the listening experience and decrease the satisfaction of the learners.

The other issue that has been raised by participants includes the possibility of excessive dependence on technology. Although AI chatbots have benefits in terms of convenience and personal practice experience, over-reliance on automated systems can decrease the possibility of human interaction. The acquisition of language, especially the development of listening and speaking abilities are sometimes facilitated by the social aspect of interaction with other people and emotion, which AI systems are not able to fully simulate. Consequently, chatbots are not to be considered as an alternative to teacher-driven instruction.

All in all, the results indicate that AI chatbots may be used as useful auxiliary tools to improve the competence of listening, especially with the ability to receive flexible practice and exposure to spoken English. However, to effectively integrate them, proper pedagogical planning and equalized application together with the conventional teaching process must be done.

The empirical evidence of the current study gives relevant theoretical contributions to the scholarly field of Second Language Acquisition (SLA), Computer-Assisted Language Learning (CALL), and the emerging field of Artificial Intelligence in Education. The findings reveal AI-based chatbots as interactive pedagogical tools that multiply the potential of technology-based language-learning environments.

First, the research supports existing theoretical viewpoints in the CALL by proving that AI chatbots can be viewed as an extension of traditional digital tools that only provide learners with listening resources that are not interactive. The commonly used CALL systems in the past were mainly based on canned lectures, audio clips, and multimedia activities. On the contrary, AI chatbots create an interactive setting of a discourse where students are able to ask questions, get feedback, and simulate the reaction in a conversation. This shift fosters the view of technology as a passive teaching tool and an interactive learner companion that can provide language communication.

Second, the results are consistent with the Interaction Hypothesis that the acquisition of language takes place as a result of meaningful interaction and negotiation of meaning. Even though chatbot interactions are technically mediated, they provide learners with the possibility to process spoken language in an active way and react in conversational structures. Timely reactions of the learners and seeking clarification involve cognitive processing that relates to listening comprehension.

Similarly, the findings are echoed by the Input Hypothesis, which underlines the significance of exposure to comprehensible linguistic input. The verbal prompts delivered by the AI chatbots are continuous and allow the learner to replay, reiterate or clarify meaning which increases exposure to the linguistic patterns that the learner uses in developing listening.

The other implication that is salient is learner autonomy on language education. Through AI chatbots, students will have the opportunity to practice listening outside the classroom and will therefore contribute to self-directed learning and personal responsibility in improving their learning. Such versatility indicates the reflective nature of modern-day pedagogical practices that predict autonomous learning in institutions of higher learning.

Finally, the findings support the Technology Acceptance Model, which means that usefulness, ease of use, and satisfaction perceptions are critical factors that should be considered when assessing the willingness of learners to use AI-based tools. Despite the given potential of AI chatbots, which can be viewed as semi-autonomous pedagogical actors, the study highlights the need for human teachers to offer emotional support, contextual clarification, and more profound pedagogical guidance.

8. CONCLUSION

The current study sought to investigate the perception of students studying at a university towards AI chatbots as a means of learning and a tool for improving listening skills. The study aimed to generate the fine details of these experiences and used a mixed-methods design, recording the described positive impacts, perceived difficulties, and satisfaction with the AI-assisted listening exercise. The importance of listening competence in the context of higher education and the growing importance of AI chatbots in the language learning process were reflected in an in-depth analysis of peer-reviewed publications published since 2023. Past research has shown that AI chatbots have the potential to significantly enhance the results of language learning experiences, by providing both a range of diverse learning opportunities and engaging and highly feedback-driven learning experiences.

The results expected of this study include the compilation of various viewpoints. The quantitative part provides a general idea of student perceptions in terms of usefulness, ease

of use, problems, and their satisfaction. The anticipated results influence the scholarly literature in a substantial way by explaining the perceptions of university students towards AI chatbots in the particular domain of listening competence. The proposed research fills a gap that has not been studied before in regard to factors that are nuanced and listening-specific in various groups of students. It provides teachers, curriculum developers, and AI creators with practical data to design and implement more effective, student-centred, and ethically conscious AI chatbots; moreover, it has an impact on the pedagogical strategies to maximize the advantages of AI chatbots and reduce their limitations in the development of listening skills.

Even though the study follows a strict quantitative design, there are a number of limitations that should be considered. The relevance to a specific group of university students can be a limitation to the applicability of results to other educational settings or other age groups. The future study may focus on the effectiveness of AI chatbots in listening training on proficiency over the long term, the effectiveness of certain chatbot features in helping to overcome the challenges that have been identified, or how participants with different cultural and linguistic backgrounds perceive these tools.

Summing up, the current research is a step in the right direction on how AI chatbots may best aid and improve listening competence among university students, thus making learning an interactive, personalized, and effective language learning process in the digital age.

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