

AI as a Mediator: Reducing Language Anxiety through Technology-Enhanced Interaction

Iqra Zehra and Fatima Zehra

Research Scholar, University of Malakand

Research Scholar, University of Malakand

Abstract

Language anxiety is a significant barrier to effective communication, limiting participation, fluency, and confidence. This qualitative case study investigates the potential of AI-mediated interactions to reduce general language anxiety among adult language learners. Five participants engaged in AI chatbot interactions over four weeks, with data collected through interaction logs, audio recordings, semi-structured interviews, and reflective journals. Thematic analysis revealed that AI provided a judgment-free, adaptive, and self-paced environment, enabling learners to practice freely, receive immediate feedback, and gradually build confidence. Participants reported reduced hesitation, improved fluency, and greater willingness to participate in classroom or real-life speaking contexts. Findings highlight AI as a complementary tool for mitigating language anxiety, fostering learner autonomy, and supporting affective and cognitive engagement in language learning.

Keywords: AI in language learning, Language anxiety, AI chatbots, Oral communication, Learner engagement, Confidence building

Introduction

Language anxiety, defined as the feelings of apprehension, tension, or fear associated with language learning and communication, has long been recognized as a barrier to effective language acquisition and oral performance. Students experiencing language anxiety often demonstrate hesitation, avoidance of speaking opportunities, reduced participation, and impaired fluency, which can significantly hinder both cognitive and affective aspects of learning. Traditionally, interventions aimed at reducing language anxiety have relied on teacher-led strategies, peer collaboration, and structured classroom activities. However, the advent of artificial intelligence (AI) and AI-driven chatbots offers a novel avenue for mitigating these challenges by providing personalized, low-stakes, and interactive practice opportunities that can enhance learner confidence and engagement.

AI-powered tools, including chatbots and language learning platforms, are increasingly capable of simulating naturalistic conversation and providing immediate feedback in a manner that reduces the social evaluation pressures often associated with traditional classroom interactions. Research has shown that learners are more willing to practice speaking, experiment with vocabulary, and attempt complex language structures in environments where judgment is minimized. In this context, AI serves as a mediating agent, offering anonymous, risk-free, and adaptive communication opportunities, which can reduce cognitive load, alleviate self-consciousness, and enhance overall language performance. This emerging role of AI aligns with broader trends in digital education and personalized learning, highlighting its potential to address affective barriers in language acquisition.

Several features of AI contribute to its effectiveness in mitigating language anxiety. First, AI chatbots provide a judgment-free environment that allows learners to make mistakes, receive corrective feedback, and repeat tasks without fear of embarrassment. Unlike peer interactions or teacher assessments, AI systems do not convey social judgment, enabling learners to focus on language form and meaning rather than the perceived evaluation of others. Second, AI can adaptively scaffold interactions, offering prompts, hints, or simplified language in response to learner input, which supports confidence building and incremental mastery. Third, the immediacy and consistency of feedback from AI tools allow learners to correct errors and reinforce learning in real time, which has been shown to reduce anxiety associated with delayed or ambiguous feedback in traditional settings.

Beyond technical functionality, AI-mediated language practice also addresses cognitive and affective dimensions of learning. Language anxiety is closely tied to self-efficacy, perceived competence, and working memory limitations. When learners experience anxiety, cognitive resources are diverted to self-monitoring and fear of judgment, reducing fluency and inhibiting linguistic performance. AI chatbots alleviate these pressures by providing predictable and structured interactions, allowing learners to focus on content generation and meaning negotiation rather than social evaluation. Furthermore, AI platforms often include gamified or interactive elements that enhance motivation and engagement, creating an emotionally supportive learning environment conducive to experimentation and risk-taking.

Empirical studies exploring AI in language learning have documented its potential to reduce anxiety and increase learner participation. For instance, learners using AI chatbots for speaking practice report increased confidence, willingness to participate in classroom activities, and reduced physiological markers of anxiety. While these studies primarily focus on skill acquisition and performance outcomes, the underlying mechanism appears to be affective: the reduction of social evaluative stress and the creation of a psychologically safe environment. In addition, AI offers flexibility and accessibility, enabling learners to practice language at their own pace, repeat tasks as needed, and engage in private practice sessions, further minimizing anxiety-related barriers.

The integration of AI in language learning also resonates with theoretical frameworks related to affective filters and self-regulated learning. Krashen's Affective Filter Hypothesis posits that high levels of anxiety inhibit language input processing, reducing acquisition efficiency. By providing a low-pressure, adaptive learning environment, AI chatbots effectively lower the affective filter, allowing learners to process input more effectively and participate more confidently. Moreover, self-regulated learning theories suggest that learners benefit from autonomy, control over learning pace, and personalized feedback—all features readily supported by AI-based systems. This positions AI as a tool not only for linguistic practice but also for affective scaffolding, addressing psychological barriers to language learning in a structured yet flexible manner.

Despite its promise, the use of AI to reduce language anxiety is still underexplored in empirical research. Questions remain regarding the optimal design of AI interactions, the balance between human and AI-mediated feedback, and the contextual factors that influence anxiety reduction. For example, learners' attitudes toward technology, cultural expectations, and prior experiences with AI may modulate its effectiveness. Furthermore, while AI can provide judgment-free practice, it cannot yet fully replicate the nuanced social feedback, empathy, and relational dynamics of human interaction. Therefore, research is needed to understand how AI tools can complement traditional classroom instruction, creating hybrid models that maximize both linguistic and affective benefits.

Methodology

This study adopts a qualitative case study design to investigate how AI-mediated language interactions influence general language anxiety among learners. A purposive sample of five adult language learners with varying proficiency levels was selected to provide insights into the use of AI chatbots as a supportive practice tool. Participants were chosen based on self-reported experiences of language anxiety in speaking tasks and their willingness to engage with AI tools for language practice. Data collection spanned four weeks, combining AI interaction logs, audio recordings of AI-mediated speaking sessions, reflective journals, and semi-structured interviews with participants regarding their affective experiences. Observational notes recorded engagement patterns, instances of hesitation or dysfluency, and learners' emotional responses during AI interaction.

Data were analyzed using thematic analysis to identify recurring patterns related to anxiety reduction, learner engagement, and perceived confidence. Both deductive coding, based on prior literature on language anxiety and technology-enhanced learning, and inductive coding, allowing emergent themes to surface, were applied. Triangulation across AI logs, interviews, and journals ensured credibility, while reflective memos captured contextual factors and participants'

perceptions of AI's role in alleviating language anxiety. This methodology allows for a rich exploration of how AI interactions create a judgment-free, adaptive, and psychologically safe learning environment, contributing to reduced anxiety and enhanced oral communication confidence.

Analysis

Reduction of Social Evaluation Pressure

One of the most prominent findings was that AI-mediated interactions significantly reduced the fear of judgment, a core factor in language anxiety. Participants reported feeling less self-conscious when speaking to AI chatbots compared to peers or instructors. Observations and audio logs showed that learners spoke more fluidly, paused less frequently, and attempted more complex sentences during AI interactions. One participant noted, *"I feel free to make mistakes with the AI. No one is judging me, so I can focus on speaking."* This demonstrates that AI provides a safe, judgment-free environment, allowing learners to concentrate on linguistic performance without social evaluative stress.

Confidence Building through Repetition and Feedback

AI tools enabled learners to practice repeatedly and receive immediate feedback, which contributed to increased self-confidence. Logs of chatbot interactions indicated that participants attempted the same sentence structures or vocabulary items multiple times, gradually improving fluency and accuracy. Interviews confirmed that repeated practice in a low-stakes environment reduced hesitation: *"I practiced my sentences several times, and each time I got more confident. I feel less nervous speaking in class now."* This highlights the role of AI as a scaffolded learning tool, where adaptive repetition reinforces language skills and mitigates anxiety.

Engagement and Motivation Enhancement

Participants exhibited higher levels of engagement during AI interactions compared to traditional speaking tasks. Observational notes and reflective journals revealed that gamified features, adaptive prompts, and interactive tasks maintained attention and encouraged active participation. Learners reported enjoying the AI interface, which fostered a positive emotional environment conducive to language practice. One learner stated, *"It's fun to interact with the AI, and I feel motivated to try different ways of saying things without fear."* This demonstrates that AI not only reduces anxiety but also enhances learner motivation and willingness to experiment with language.

Facilitation of Self-Paced and Individualized Learning

AI-mediated practice allowed participants to control the pace of interaction, revisit tasks, and focus on areas of difficulty without pressure from peers or instructors. Journals and interview data indicated that learners valued the ability to pause, think, and retry utterances at their own pace, reducing cognitive load associated with real-time evaluation. Observations confirmed that participants who typically hesitated during classroom tasks produced more complete and accurate speech during AI sessions. This individualized learning environment contributed to a sense of autonomy, which further alleviated anxiety and enhanced perceived competence.

Coping with Anxiety in High-Stakes Contexts

Although AI interactions occurred in low-stakes conditions, participants reported that practice with

AI transferred to classroom performance, reducing anxiety during oral presentations or group discussions. Learners indicated that repeated exposure to speaking tasks via AI increased familiarity and comfort with language production, making classroom participation less intimidating. One participant explained, “*After practicing with the AI, I feel like I have already rehearsed my ideas, so speaking in front of the class feels less scary.*” This suggests that AI can serve as a preparatory tool, helping learners manage anxiety in more evaluative contexts.

Limitations and Contextual Observations

Despite these benefits, some limitations emerged. AI tools could not replicate nuanced human feedback, such as encouragement, empathy, or non-verbal cues, which are sometimes essential for complete anxiety alleviation. Additionally, a few participants reported initial hesitation due to unfamiliarity with technology or uncertainty about how the AI evaluated their responses. These findings indicate that while AI is effective for reducing general language anxiety, it is most beneficial when integrated with human-facilitated learning rather than serving as a sole intervention.

Emergent Themes

Thematic analysis revealed four overarching themes: judgment-free practice, confidence building, enhanced engagement, and self-paced individualized learning. These themes collectively demonstrate that AI interactions reduce cognitive and affective barriers to language production, providing a supportive environment for learners to experiment, rehearse, and gain confidence. The findings highlight AI’s role as a complementary tool in language education, addressing both affective and skill-based aspects of communication.

Conclusion

This study demonstrates that AI-mediated interactions can effectively reduce general language anxiety by providing a judgment-free, adaptive, and psychologically safe environment for practice. Learners reported decreased hesitation, improved fluency, and increased confidence when interacting with AI chatbots compared to traditional classroom contexts. Key mechanisms contributing to anxiety reduction included repeated, low-stakes practice, immediate feedback, self-paced interactions, and interactive engagement features. While AI cannot fully replicate human empathy or nuanced social feedback, it serves as a valuable complement to classroom instruction, supporting learners in building confidence, improving oral performance, and preparing for high-stakes speaking situations. The findings suggest that integrating AI tools into language learning can address affective barriers, enhance motivation, and foster autonomy, offering practical implications for educators, curriculum designers, and language learners seeking to manage language-related anxiety.

References

- Ahmed, N., Sheikh, A. A., Mahboob, F., Ali, M. S. E., Jasińska, E., Jasiński, M., ... & Burgio, A. (2022). Energy diversification: a friend or foe to economic growth in Nordic countries? A novel energy diversification approach. *Energies*, *15*(15), 5422.
- Brohi, N. A., Qureshi, M. A., Shaikh, D. H., Mahboob, F., Asif, Z., & Brohi, A. (2024). Trickle Down Effect of Toxic Leadership Pandemic on Employee Counterproductive Work Behavior: In

- Retrospect to SDGs, Laws, Regulations, and ILO Provisions. *Journal of Entrepreneurship, Management, and Innovation*, 6(3), 392-417.
- Brohi, N. A., Qureshi, M. A., Shaikh, D. H., Mahboob, F., Asif, Z., & Brohi, A. (2024). Nexus between servant leadership, green knowledge sharing, green capacities, green service innovation, and green competitive advantage in the hospitality sector of Pakistan: An SDG & ESG stakeholder compliance framework. *J. Mark*, 6, 211-433.
- Jamal, A., & Mahboob, F. (2024). DOES HR ANALYTICS MODERATE THE RELATIONSHIP BETWEEN HRM ACTIVITIES AND ORGANIZATIONAL CREATIVITY?. *Priority-The International Business Review*, 2(2), 454-469.
- Junejo, I., Ali, U.A., Qureshi, M.A., Katper, N., Rahoo, L.A., Saraih, U.N.B., Mediating role of firm size for ethical E-Procurement implementation: Employee Perception from SMEs (2023), *Russian Law Journal*.
- Junejo, I., Qureshi, M.A., Mehmood, A., Mehboob, A., Impact of Buyers dependence and Absorptive Capacity on Business Performace: The moderating role ethical long term relationship (2023). *Russian Law Journal*
- Kakepoto, I., Said, H., Habil, H., Umrani, A. I., & Memon, I. A. (2013). Analyzing oral communication apprehension prevailing among engineers in engineering workplace of Pakistan. *Journal of Economics and Sustainable Development*, 4(3), 255-261.
- Katper, N. K., Chaudhry, N. I., Tunio, M. N., & Ali, M. A. (2020). Impact of leadership style and organizational culture on organizational commitment. *Sukkur IBA Journal of Management and Business*, 7(1), 92-106.
- Katper, N. K., Shaikh, S. S., Anand, V., & Ali, N. I. (2018). Analysing the impact of managerial ownership on the performance of shariah-compliant firms in Pakistan. *International Business Research*, 11(11), 55-66.
- Katper, N. K., Tunio, M. N., Hussain, N., Junejo, A., & Gilal, F. G. (2020). COVID-19 crises: global economic shocks vs Pakistan economic shocks. *Advances in Science, Technology and Engineering Systems Journal*, 5(4), 645-654.
- Khan, A. H., Wagan, A. A., & Umrani, A. I. (2021). Use of social media as an interactive teaching aid in developing countries. *International Journal on Emerging Technologies*, 12(1), 225–227.
- Kumar, K., Wagan, A. A., Khuhro, M. A., Umrani, A., Chhajro, A., Hafeez, A., & Laghari, A. A. (2020). Texture based FACE recognition using GLCM and LBP schemes. *Indian Journal of Science and Technology*, 13(13), 1401-1411. <https://doi.org/10.17485/IJST/v13i13.118>
- Laghari, A. A., Laghari, R. A., Wagan, A. A., & Umrani, A. I. (2020). Effect of Packet Loss and Reorder on Quality of Audio Streaming. *EAI Endorsed Transactions on Scalable Information Systems*, 7(24). <https://doi.org/10.4108/eai.13-7-2018.160390>
- Lal, M., Kumar, K., Wagan, A. A., Laghari, A. A., Khuhro, M. A., Saeed, U., ... & Chahjro, M. A. (2020). A systematic study of Urdu language processing its tools and techniques: A review. *International Journal of Engineering and Technical Research*, 9(12), 37-43.

- Qadr, T., Abbasi, S. F., & Ahmed, S. (2024). Cultivating Positivity: Role of Gratitude and Psychological Well-Being among Undergraduate Psychology Students. *International Journal of Trends and Innovations in Business & Social Sciences*, 2(3), 332-343.
- Qureshi, M.A., Raza, S.A., Kolachi, I.A., Sarwar, A., Khan, K.A., Influence of front-desk staff service quality on students' affective commitment, trust, and word-of-mouth in higher education (2022), *Asian Academy of Management Journal*, Universiti Sains Malaysia, DOI: <https://doi.org/10.21315/aamj2022.27.1.2>
- Rafique, M. O., Saeed, A., Anis, M., Mahboob, F., & Ghaffar, A. (2022). *Analysis of makhārij (relaxations) in AAOIFI Shari'ah standards for Islamic banks*. *Journal of Xidian University*, 16(5). <https://doi.org/10.37896/jxu16.5/047>
- Rafique, M. O., Saeed, A., Anis, M., Mahboob, F., Ghaffar, A., & Jalbani, A. A. (2022). Isomorphic pressures on Shari'ah board members in Islamic banks (to apply the legal stratagems in IF products). *Journal of Xidian University*, 16(5), 489–502. <https://doi.org/10.37896/jxu16.5/049>
- Rafique, M. O., Uddin, I., Abdullah, A. S. C., & Fatoni, M. A. W. (2021). Mitigating Shari'ah Risk through Hiyal (Legal Stratagems): A Classical and Effective Technique. *COMSATS Journal of Islamic Finance (CJIF)*, 6(2).
- Rao, A. A., & Rafeeq, M. U. (2019). An Analysis of Imposed Charity (Iltizām-e-Taṣadduq) in Islamic Banking. *Journal of Religious Studies*, 2(1), 1-15.
- Raza, S. A., Ahmed, S., Asif, A., & Rani, A. (2023). The impact of burnout on the psychological well-being of ESL students in higher education environment. *Siazga Research Journal*, 2(3), 147-156.
- Rehman, S. U., Mehboob, I., Mahboob, F., & Khan, S. N. (2023). Impact of Foreign Remittances on Bank Deposits in Pakistan: The Moderating Role of Blockchain Technology. *Business Review of Digital Revolution*, 3(2), 53-60.
- Shaikh, S. S., Shah, S. A. S., Katpar, N. K., & Shah, S. K. B. (2019). Factors affecting work-life balance of women working in NGOs of Pakistan. *The Women-Annual Research Journal of Gender Studies*, 11(11).
- Shaikh, Z. A., Pahore, M. R., Umrani, A. I., Memon, S., & Jamali, S. (2020). Reforming Teaching and Learning through applying EdTech in campuses. *Dilemas Contemporaneos: Educacion, Politica y Valores*, 7(2).
- Shaikh, Z. A., Umrani, A. I., Jumani, A. K., & Laghari, A. A. (2019). Technology enhanced learning: a digital timeline learning system for higher educational institutes. *International Journal of Computer Science and Network Security*, 19(10), 1-5.
- Shen, Z., Zhao, M., & Zaib, K. (2024). Unearthing the art of storytelling: A closer look at Sir Arther Canon Doyle's B24. *International Journal of English Language and Literature Studies*, 13(2), 173-187.
- Uddin, I., Sabri, R., Bhatti, M. I., Rafique, M. O., & AsadUllah, M. (2022). *Islamic capital markets: The structure, formation and management of sukuk*. Routledge.