Using chatbots as a tool to personalize english as a foreign language learning: A literature review

Uso de chatbots como herramienta para personalizar el aprendizaje de inglés como lengua extranjera: una revisión de literatura

Silvia Patricia Guartán Guamán, Esteban Arnoldo Valdiviezo Ramírez

Abstract

Artificial Intelligence in education has shown potential for AI-driven chatbots to facilitate personalized English as a Foreign Language (EFL) learning. The present review explores the applications, outcomes, and challenges of chatbot integration in EFL instruction. In line with PRISMA, a systematic search was performed in Scopus, ERIC, and Google Scholar, using the following keywords: EFL, chatbots, and personalization. Thematic clusters addressed chatbots applications, usage impact on language skills training, teaching protocols, and implementation challenges. Findings were synthesized using qualitative synthesis and descriptive analysis and are reported in narrative format, supplemented by tables and figures. The study aims to contribute to EFL research by identifying best practices and guidelines for educators to help them embrace the challenges they face and inform policymakers on EFL and how AI can support students. These insights intend to promote personalized language learning and improve the quality of EFL education worldwide. It can be argued that the outcomes and challenges can be further investigated in the future in terms of their potential effects on linguistic skill development and potential pedagogical actions shaped with cultural context.

Keywords: EFL; chatbots; artificial intelligence; personalized learning; language education

Silvia Patricia Guartán Guamán
Catholic University of Cuenca | Cuenca | Ecuador | silvia.guartan.96@est.ucacue.edu.ec
https://orcid.org/0009-0009-7327-7768
Esteban Arnoldo Valdiviezo Ramírez
Catholic University of Cuenca | Cuenca | Ecuador | esteban.valdiviezo@ucacue.edu.ec
https://orcid.org/0000-0002-4828-2831

2 | Vol. 6 No. 12, 2025. e250283 | Sección Educación | Peer Reviewed

RUNAS Journal of Education and Culture
Revista de Educación y Cultura
Revista de Educação e Cultura

Resumen

El uso de la inteligencia artificial (IA) en la educación ha demostrado un potencial de los chatbots para facilitar el aprendizaje personalizado del inglés como lengua extranjera (EFL). Esta revisión busca analizar diversas aplicaciones, resultados y desafíos de la integración de chatbots en la enseñanza del EFL. Cabe argumentar que estos resultados y desafíos pueden investigarse en el futuro en términos de sus posibles efectos en el desarrollo de habilidades lingüísticas y posibles acciones pedagógicas adaptadas al contexto cultural. De acuerdo con PRISMA, se realizó una búsqueda sistemática en Scopus, ERIC y otras bases de datos, aplicando las palabras clave: "EFL", "chatbots" y "personalización". Los grupos temáticos buscan abordar las aplicaciones de los chatbots, el impacto de su uso en la formación en habilidades lingüísticas, los protocolos de enseñanza y los desafíos de su implementación. Los hallazgos se sintetizaron mediante síntesis cualitativa y análisis descriptivo, y se presentaron en formato narrativo, complementados con tablas y figuras. Se espera que los hallazgos contribuyan a la investigación del inglés como lengua extranjera (EFL) al identificar las mejores prácticas y directrices para educadores, ayudándolos a afrontar los desafíos que enfrentan e informando a los responsables políticos sobre el EFL y cómo la IA puede apoyar a los estudiantes. Estos hallazgos buscan promover el aprendizaje personalizado de idiomas y mejorar la calidad de la educación del inglés como lengua extranjera (EFL) en todo el mundo.

Palabras clave: EFL; chatbots; inteligencia artificial; aprendizaje personalizado; educación en idiomas

Introduction

AI in education has been studied for a lot of years, but the interest in how it helps people improve learning outcomes is just appearing (Huang et al., 2022; Li et al., 2024). Under this context, AI-Driven chatbots have become a potential tool for personalized EFL learning. The use of this software has practical implications in language teaching in areas like synchronous engagement, adaptive feedback, and personalized instructional strategies (Dooly & Vinagre, 2022; Fryer, 2020). The use of AI-driven Chatbots is essential in a globalized world with a need for English proficiency since it may help dealing with problems such as limited time for practice and feedback (Du & Ben Kei, 2024; Wiboolyasarin et al., 2024; Cislowska & Peña, 2024). Chatbots open an opportunity for improving student involvement and linguistic skills as teachers and researchers look for innovative methodologies and strategies (Mosleh, 2024; Rebolledo & González, 2023).

Chatbots in EFL research focused on technical abilities rather than their pedagogical impact (Jeon, 2021), an approach that leaves aside the potential in EFL instruction. Chatbot-based learning environments have not yet been closely associated with motivation, engagement, and linguistic competence in diverse education spheres (Huang et al., 2022). Moreover, even though the utilization of chatbots applications has been extensively studied in higher education and professional training, their effective applications in K-12 and informal learning contexts are still limited (Baskara, 2023). The other gap is knowing how educators cope when introducing chatbots, including cultural adaptation and accessibility as well as pedagogical alignment (Zhai & Wibowo, 2022). When teachers have the ability to overcome cultural adaptation and accessibility, they will optimize chatbots integration as well as their effective use as truly personalized learning tools in EFL instruction (Ying Soon et al., 2024; Pan et al., 2024).

A main objective of this literature study is to process accumulated research on chatbots usage in EFL learning toward what language skills are developed, what pedagogical elements are used,

and what are the contextual conditions for implementation. More specifically, it examined how chatbots foster second language acquisition by promoting interactive and adaptive learning environments, and discussing best practices for their use (Belda-Medina & Kokošková, 2023; Wollny et al., 2021). Employing a systematic review methodology following PRISMA principles (Moher et al., 2009), this study explores peer-reviewed literature from 2019 and onwards, examining insights from diverse educational contexts. Through collation of evidence and a thorough exploration of chatbots integration, this review provides educators, researchers, and policymakers with recommendations for how AI-driven tools may be used to enhance EFL education (Lingaiah et al., 2024; Karataş et al., 2024).

Methods

The article was conformed with the PRISMA statement to maintain the transparency and reproducibility of the systematic approach (Snyder, 2019). Due to the vast collections of education-related literature, databases like Scopus, ERIC, ScienceDirect, ResearchGate, Springer, and Google Scholar were searched as well, using search keywords by using the Boolean string (EFL OR English as a Foreign Language) AND (Chatbots OR AI tools) AND (personalization OR customization).

As seen in Table 1, the studies analyzed were published from 2019 onwards, and included parameters such as peer-reviewed journal articles, these studies were articles in English with emphasis on the congruent use of chatbots in EFL. Table 1 shows the criteria used.

Table 1. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Approach	AI-Driven Chatbots in EFL	Articles not associated with EFL and AI-Driven Chatbots
Publication Date	2019–2024	Articles published before 2019
Publication Type	Peer-reviewed articles	Degree papers, conferences, book chapters, web pages
Language	English	Articles in other languages
Trustworthiness	Articles with appropriate methods	Articles with unclear and inappropriate methods
Focus of the articles	Research works with any benefits, challenges, or both regarding AI-Driven Chatbots to EFL	Articles with neither benefits nor challenges regarding AI-Driven Chatbots to EFL

Source: own elaboration

The study addressed these specific questions: a) What are the main applications of chatbots in personalized EFL learning? b) What pedagogical and methodological strategies are associated with chatbot use in EFL instruction? c) What are the technical, pedagogical, and cultural challenges of implementing chatbots in TEFL contexts?

Finally, the search was narrowed to examine the articles within clusters like: 1) Applications: Uses of chatbots in EFL (Grammar feedback, vocabulary building); 2) Outcomes: Effects of chat-

4 | Vol. 6 No. 12, 2025. e250283 | Sección Educación | Peer Reviewed

RUNAS Journal of Education and Culture
Revista de Educación y Cultura
Revista de Educação e Cultura

bots on linguistic skills; 3) Teaching methods and approaches incorporating chatbots; 4) Challenges: barriers to implementation, cultural, technical, and   pedagogical obstacles.

Review Protocol and Data Analysis

Following the PRISMA based review model (Moher et al., 2009), a protocol of the search stage is explained in figure 1.

Figure 1. PRISMA Method
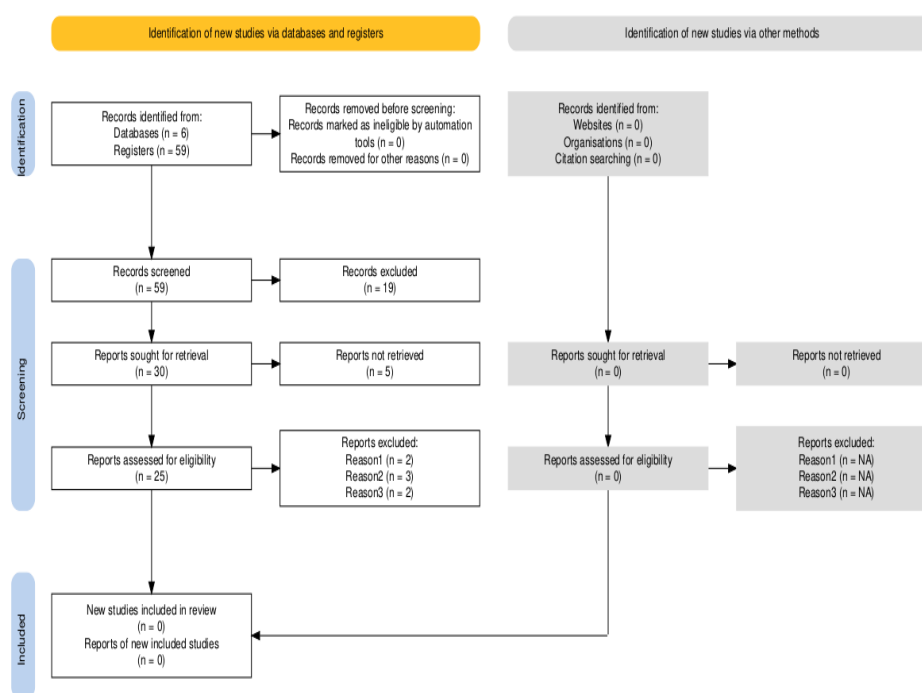
Source: own elaboration

The search results showed a group of 59 articles. However, after applying the inclusion/exclusion criteria, and determining the quality of the research pieces, 18 articles were selected and organized to present the findings, 3 in ResearchGate, 4 in Google Scholar, 5 in ERIC, 4 in Scopus, 1 in Springer, and 1 in ScienceDirect. See figure 2 for detailed reference.

Figure 2. Articles by Author, Year, Title, and Database

Number of Articles per Database	Author	Year	Title	Database
3	Li, B., Lowell, V., Wang, C., & Li, X.	2024	A systematic review of the first year of publications on ChatGPT and language education	Research Gate
	Baskara, R.	2023	Chatbots and Flipped Learning: Enhancing Student Engagement and Learning Outcomes through Personalized Support and Collaboration	Research Gate
	Rebolledo, R., & González, F.	2023	Exploring the Benefits and Challenges of AI-Language Learning Tools	Research Gate
4	Blijenburg, I., & IJsselsteijn, W.	2022	Co-designing a chatbot that helps international students deal with acculturative stress	Google Scholar
	Dooly, M., & Vinagre, M.	2022	Research into practice: Virtual exchange in language teaching and learning	Google Scholar
	Fryer, L.	2020	Bots for language learning now: Current and future directions	Google Scholar
	Pan, M., Guo, K., & Lai, C.	2024	Using Artificial Intelligence Chatbots to Support English-as-a-Foreign Language Students' Self-Regulated Reading	Google Scholar
5	Huang, W., Khe, F., & Fryer, L.	2022	Chatbots for Language Learning--Are They Really Useful? A Systematic Review of Chatbot-Supported Language Learning	ERIC
	Jeon, J.	2021	Exploring AI chatbot affordances in the EFL classroom: Young learners' experiences and perspectives	ERIC
	Karataş, F., Abedi, F., & Ozek Gunyel, F.	2024	Incorporating AI in foreign language education: An investigation into ChatGPT's effect on foreign language learners	ERIC
	Vásquez-Cano, E., Mengual, S., & López, E.	2021	Chatbot to improve learning punctuation in Spanish and to enhance open and flexible learning environments	ERIC
	Ait, T., El Hajji, M., & Es-Saady, Y.	2024	The impact of educational chatbot on student learning experience	ERIC
4	Mosleh, S.	2024	Siri as an interactive pronunciation coach: its impact on EFL learners	Scopus
	Wiboolyasarin, W., W. K., & Tiranant, P.	2024	Designing chatbots in language classrooms: an empirical investigation from user learning experience	Scopus
	Wollny, S., Schneider, J., Di Mitri, D., Weidlich, J., Rittberger, M., & Drachslet, H.	2021	Are We There Yet? - A Systematic Literature Review on Chatbots in Education	Scopus
	Ying Soon, G., Binti Abdullah, N., Binti Abdul, R. N., Suyan, Z., & Yiming, C.	2024	Integrating AI Chatbots in ESL and CFL Instruction: Revolutionizing Language Learning with Artificial Intelligence	Scopus
1	Kuhail, M., Alturki, N., & Alramlawi, S.	2023	Interacting with educational chatbots: A systematic review	Springer
1	Zhai, C., & Wibowo, S.	2022	A systematic review on cross-culture, humor and empathy dimensions in conversational chatbots: the case of second language acquisition	Science Direct

Source: own elaboration

6   Vol. 6 No. 12, 2025. e250283 | Sección Educación | Peer Reviewed

RUNAS Journal of Education and Culture
Revista de Educación y Cultura
Revista de Educação e Cultura

Development

Applications: Chatbots in EFL (Grammar Feedback and Vocabulary Building)

Chatbots have received much attention across many domains, including personalized language learning experiences, such as grammar correction and vocabulary improvements. For grammar feedback, chatbots can give instant feedback by detecting errors in sentence structure, verb tenses, and prepositions, among other linguistic elements commonly seen as errors (Huang et al., 2022). Such interactions enable the learners to provide continuous support and reinforcement, something traditional classroom settings often lack (Dooly & Vinagre, 2022). In table 2, the studies linked to chatbots applications and EFL are presented.

Table 2. Chatbot Applications in EFL

Application	Description	Key Studies
Grammar Feedback	Chatbots provide immediate error correction in areas like sentence structure, verb tenses, and prepositions.	Dooly & Vinagre (2022).
Vocabulary Building	Interactive exercises like quizzes and flashcards help learners acquire and retain new vocabulary.	Jeon (2021).
Multimodal Learning	Chatbots with voice recognition and multimedia (images, videos) enhance speaking and pronunciation skills.	Huang et al. (2022).
Task-based Learning	Real-world scenarios (e.g., ordering food) help learners practice contextual language.	Fryer (2020); Ait et al. (2024).
Virtual Language Exchange	Chatbots serve as conversation partners in language exchange programs, offering speaking and listening practice.	Rebolledo & González (2023). Ait et al. (2024).

Source: own elaboration

Huang et al. (2022), states that chatbots with a grammar focus may assist learners in identifying and amending their errors via automated feedback, subsequently improving their overall self-awareness and, as a result, their proficiency in the given language. Moreover, Dooyl and Vinage (2022), consider that chatbots can adjust their response according to the learner's level, which may generate appropriate and contextual grammar explanations, an element that is usually linked to understanding and retention.

Some chatbots can elaborate interesting and fun activities like quizzes, flashcards, or games in which students can learn new vocabulary and phrases interactively. Chatbots provide the opportunity to practice in meaningful contexts. Jeon (2021), describes how chatbots may facilitate vocabulary retention through new words in different contexts, thus learners experience new vocabulary in real-world scenarios.

Besides traditional text-based interaction, some research sought multimodal uses of chatbots in the EFL context. Voice recognition chatbots have the potential to be of particular value in assisting learners' speaking and pronunciation (Huang et al. 2022). Dooly & Vinagre (2022), show that chatbots can listen to a learner's spoken words and evaluate pronunciation, rhythm and

stress, helping learners to develop their speaking skills. Multimedia chatbots, including images and videos, also help students to learn vocabulary from sight, which enhances memory.

Task-based language learning is further facilitated with the growing usage of chatbots in online learning environments. As Fryer (2020), has highlighted, chatbots offer alternative interactive conversations by which learners can simulate natural exchanges like ordering in a restaurant or booking a hotel. This type of situated learning supports language use and prepares students for real-world to communication. Similarly, Ait et al. (2024), states that students have real opportunities to practice the functional language that can be implemented immediately by the task-based chatbots.

Moreover, chatbots have been applied with success in online classes and language exchange in which the chatbots visit the conversational partners. These programs are especially beneficial when students do not have regular access to native speakers. As stated by Rebolledo and González (2023), chatbots that are incorporated with natural language exchange platforms, provide students with a place where they are able to exercise their skills in a controlled and dynamic space and also act as a replacement to traditional language exchange models.

Outcomes: Effects of chatbots on linguistic skills

The inclusion of chatbots in EFL education has demonstrated encouraging outcomes related to enhancing learners' linguistic abilities in diverse areas such as reading, writing, speaking, and listening. This development is largely down to the chatbots' ability to offer personalized feedback. Table 3 shows the articles related to the impact of chatbots on linguistic skills.

Table 3. Effects of Chatbots on Linguistic Skills

Skill Area	Effect of Chatbots	Key Studies
Reading	Chatbots adjust reading content complexity based on proficiency, promoting engagement and comprehension.	Huang et al. (2022). Pan et al. (2024).
Writing	Provides real-time corrections for grammar, style, and vocabulary usage to improve writing fluency.	Jeon (2021).
Speaking	Interactive speech practice with feedback on pronunciation and fluency.	Mosleh (2024); Wollny et al. (2021).
Listening	Adaptive listening exercises with multimedia (audio/video) enhance comprehension of various accents and speech patterns.	Baskara (2023).

Source: own elaboration

Chatbots aid in delivering personalized learning experiences through adaptive learning techniques, which significantly improve their reading comprehension. As Huang et al. (2022), state, these tools can adapt the level of complexity of reading passages according to each learner's level of proficiency. This helps in ensuring that the reading material presented to the learners is neither too hard or too easy for them. Chatbots also encourage learners to engage deeply with the reading

content presented, as they are designed with comprehension questions embedded within   the text (Pan et al., 2024).

As writing is new territory, chatbots can support students develop their writing by giving real-time corrections of grammatical errors as well as suggestions for improvement in their style. For example, Jeon (2021), highlights that chatbots provide personalized feedback on sentence structure, punctuation, and word choice, enabling students to enhance their writing skills independently. In addition, chatbots can prompt learners to write in a free form to stimulate creativity and coherence, as well as promote writing fluency over time. Such personalized, ongoing feedback can prove vital for novice learners but is also helpful for more novice students looking to refine their writing skills.

Studies show that speaking skills are particularly improved thanks to the interactive nature of chatbots, which give students the chance to practice their pronunciation and   conversational skills. For instance, chatbots that run on speech recognition technology can provide instant feedback on speaking mistakes, helping students with their speech production. Mosleh (2024), found that learners who used chatbots for speaking showed significant improvements in their fluency and accuracy. Additionally, chatbots can mimic real conversations, preparing students for more naturalistic use of the language in real life.

Listening practice can be a source of dynamic exercises with chatbots adapting to the learner's understanding. Baskara (2023), asserts that if learners receive listening exercises as part of their chatbots interactions, it is an excellent way for learners to strengthen their auditory skills and ability to comprehend spoken language. Learners may listen to spoken instructions or dialogues and respond properly, which improves both active listening and preventive skills. Additionally, incorporating multimedia elements like audio files and videos provides listening comprehension opportunities.

Ultimately, chatbots contribute to every element of learning a language together in one interactive format that can substantially elevate the recipient's linguistic development. As reported by Wollny et al. (2021), the usage of a chatbots promotes a high frequency of language practice by providing hints and tips for language learning during the conversation, which ultimately leads to better performance in language acquisition.

Teaching Methods and Approaches Incorporating Chatbots

Chatbots possess great potential for enhancing the field of EFL, but careful and thoughtful incorporation and consideration for pre-existing pedagogies are important to maximize the use and effectiveness of chatbots. Several teaching frameworks can be employed to enhance the chatbots experience for learners. Table 4 summarizes the articles analyzed for this section.

Table 4. Teaching Methods and Approaches with Chatbots

Strategy	Description	Key Studies
Task-based Learning	Chatbots simulate real-life tasks (e.g., shopping, travel) to practice language in context.	Li et al. (2024).
Scaffolding	Chatbots provide structured support with hints and prompts to guide learners through tasks.	Kuhail et al. (2023).
Adaptive Learning	Chatbots adjust responses based on learner performance, offering a personalized experience.	Huang et al. (2022).
Collaborative Learning	Chatbots are used in group tasks to improve social language skills and peer interaction.	Jeon (2024).

Source: own elaboration

One effective method of language teaching is task-based learning, where the target language is used for some sort of real-life task. This type of approach works very well with chatbots; learners can get involved in scenarios that simulate the real world. For instance, Li et al. (2024), mentions that chatbots can mimic situations like grocery shopping, providing directions, or making travel arrangements, therefore enabling learners to practice functional language in use. This method has enhanced linguistic proficiency as well as assisted learners with becoming proficient in information and maintaining a conversation in actual life settings with regard to the English language beyond classroom practice. Simulation is another way to promote overall improvement in English skills.

A similar approach that can work very well with chatbots integration is scaffolding. Chatbots can also provide guided practice, offering hints, prompts, and feedback as the learner engages in a learning activity. This technique helps to ensure that learners are not drowning in information yet are still facing challenges that will encourage them to do more than they think they can. As described by Kuhail et al. (2023), scaffolding of learning occurs through chatbots interactions, supporting the gradual growth of learners' language skills with assistance as needed.

Adaptive learning techniques, through which chatbots tailor their conversation to sustain learner performance, are also important to keep students engaged and motivated (Li et al., 2022). It can aid in meeting learners' individual needs and let students move forward at their own time. As reported by Huang et al. (2022), Chatbots can review earlier communications, realigning subsequent replies as needed, guaranteeing that every pupil attains a bespoke learning encounter in keeping with his/her existent standard of competency.

Another powerful strategy is collaborative learning when implementing Chatbots. Integrating chatbots into group activities or pair work allows learners to practice language skills cooperatively. Jeon (2024), shows that learners engaged in task-based activities with chatbots showed better language production and social language skills. Peer interaction is facilitated in such collaborative tasks, allowing learning negotiation and sharing of learning strategies among learners.

10   Vol. 6 No. 12, 2025. e250283 | Sección Educación | Peer Reviewed

RUNAS Journal of Education and Culture
Revista de Educación y Cultura
Revista de Educação e Cultura

Furthermore, teacher training will further enable the use of chatbots at scale, ensuring that educators are able to use them in the classroom. Overhauling teacher training to account for the presence of chatbots in classrooms, and how they can be effectively used to supplement existing curricula, is an urgent 21st-century challenge that must be addressed. As pointed out by Vázquez-Cano et al. (2021), a critical aspect of effective teacher preparation is needed to ensure chatbots are used as an integrated, supportive approach to personalized learning, amplifying student engagement and outcomes.

Challenges: barriers to implementation, cultural, technical, and pedagogical obstacles

Although there are many advantages to using chatbots, some challenges need to be rectified for integrating them into EFL classrooms. These challenges range from cultural and technical hurdles to broader pedagogical considerations that can constrain the effectiveness of implementing chatbots for learning a language. Table 5 describes the studies found on this topic.

Table 5. Barriers, challenges, and implementation

Barrier	Description	Key Studies
Cultural Challenges	Chatbots must adapt to diverse cultural contexts and understand regional accents, idioms, and slang.	Zhai & Wibowo (2022). Karataş et al. (2024).
Pedagogical Challenges	Resistance from educators and students to Chatbots-based learning, especially in less tech-savvy environments.	Obiwuru (2024). Wiboolyasarin et al. (2024). Ying Soon et al. (2024).
Technical Support	Adequate support is necessary to resolve technical issues and ensure smooth Chatbots functionality.	Blijenburg & IJsselsteijn (2022).

Source: own elaboration

Cultural challenges are particularly challenging, as chatbots must be trained to embrace the various cultural and linguistic diversity and challenges that any learners will bring. According to Zhai and Wibowo (2022), chatbots that do not recognize the subtleties of culture (such as idiomatic expressions, slang, and local accents) are unlikely to provide feedback or contacts with meaning. Furthermore, chatbots should also be designed to account for cultural differences with respect to different communication styles as well as respond appropriately, taking into account the socio-cultural context of each learner (Karataş et al., 2024).

Changes can be pedagogical as well. Some educators may be resistant to learning about this technology, or argue that chatbots can't compete with the interactive, social elements of human teaching (Ying Soon et al., 2024). According to Obiwuru (2024), educators require sufficient training in implementing chatbots within their educational practices. Without this training, teachers may not be able to make use of chatbots in ways that align with their instructional   goals, resulting in poor use of chatbots. Moreover, there is the issue of student resistance. Some learners might

consider chatbots impersonal or inadequate substitutes for   traditional teachers, especially if they do not understand the technology as culturally relevant or socially connected (Wiboolyasarin et al., 2024).

Finally, the technical problematics are important as well. According to Blijenburg and IJsselsteijn (2022), sufficient teacher and learner support and the opportunity to troubleshoot are important considerations to avoid technical problems when using Chatbots.

Discussion

This article reflects on how chatbots can be applied as effective learning tools for personalized and effective feedback in the areas of grammar and vocabulary use. Chatbots allow enhancing the four skills and provide synchronous interaction and personal assistance with language materials (Fryer, 2020; Huan et al., 2022; Jeon, 2021). Immediate and adaptive feedback is one of the most powerful benefits that come from practice with chatbots, something that is essential for language skills retention. Research showed that chatbots can help students with grammar correction and vocabulary retention, using different modes for content presentation like quizzes and games, strategies recognized as an important part of achieving a foreign language (Huang et al., 2022; Jeon, 2021). In addition, chatbots have benefits for listening and speaking skills development, abilities that are usually difficult to practice in class since they can provide speech recognition, real-world communication scenarios, among others, that allow students opportunities to practice fluency and pronunciation development (Baskara, 2023; Huan et al., 2022; Mosleh, 2024).

From a pedagogical standpoint, and to argue about the question "What pedagogical and methodological strategies are associated with chatbot use in EFL instruction?", there appears to be an increasing alignment between chatbots usage and established educational strategies like task-based learning, scaffolding, and collaborative learning. With careful and judicious integration, chatbots may serve to supplement these methods, providing structured scaffolding to learners while facilitating interactive and contextualized opportunities for language practice. This is where chatbots can be particularly useful, as they are adaptable to various contexts and can serve as a very flexible learning tool for language educators. However, this study also highlights the need to account for the varied requirements of learners and instructors when identifying and introducing these AI-powered tools to educational settings, as they should meet pedagogical and learner demands (Liu et al., 2024; Kuhail et al., 2023; Lee & Jeon, 2024).

In order to discuss the next research question, "What are the main applications of chatbots in personalized EFL learning?", it is necessary to consider the following aspects. Because the diverse nature of EFL instruction makes it necessary to consider the role that chatbots play to guarantee their efficient integration in the process, challenges regarding cultural sensitivity, technical limitations, and pedagogical integration must be brought to the forefront of discussions on the significance of chatbots in EFL instruction; ultimately, addressing these elements in the conversation will only complement the wider implications of using chatbots within instruction. Future studies

should reflect the fact that these issues cannot be completely overcome and investigate how chatbots can be designed to cater to a greater range of learners and educators worldwide (Huang et al., 2022; Zhai & Wibowo, 2022).

Regarding the last research question "What are the technical, pedagogical, and cultural challenges of implementing chatbots in TEFL contexts?", it was possible to determine that there are challenges that go against the effectiveness of chatbot-based learning. Cultural adaptation and technical constraints, especially regarding natural language processing (NLP), hold back mass adoption. Many chatbots are still unable to understand regional dialects, accents, and idiomatic expressions, which can result in feedback not being accurate and also can cause learners to get frustrated (Zhai & Wibowo, 2022; Zhai et al., 2024).

While chatbots are praised for their potential in personalization, the challenge lies not just in the incorporation of such technologies into the academic system, but in the larger ecosystem in which they exist, that is to say, across different curricula and in environments where resources may be scarce and where resistance to AI teaching methods may be high. Continuous teacher training and strong technical support are needed to overcome these barriers for the smooth adoption of chatbots in the classroom (Obiwuru, 2024; Blijenburg & IJsselsteijn, 2022).

Conclusion

The results of this literature review indicate that chatbots are clearly promising as disruptive technology in EFL, especially in such areas as personalized learning. Their ability to provide instantaneous feedback, mimic authentic communicative situations, and offer personalized language practice makes them powerful tools in learner-centered education. Most prominent chatbot platforms are also easily accessible and user-friendly, lowering the barriers to classroom technology integration for educators and students in several educational contexts as well. Perhaps the most interesting finding that echoes from this literature review is the increasing motivation and engagement among students. Unlike conventional one-size-fits-all teaching methods, chatbot-supported learning environments can customize their lessons following their talent and learning preferences. Such personalization not only caters to individual learner differences, but it will also help create autonomy and relevance, something necessary for continual language learning. However, to fully harness the pedagogical power of this tool, a number of technical, linguistic, and cultural challenges must be recognized and overcome. These also encompass the level of perfection of Natural Language Processing (NLP) on multilingual settings, the problems to comprehend idiomatic learners' responses, and the requirement of being culturally responsive to users coming from different backgrounds.

Moreover, the inequalities in digital literacy and infrastructure within schools and regions, when rolling out chatbot technologies, need to be addressed. However, the evidence suggests that, when thoughtfully embedded into pedagogical models and given ongoing support for teachers and learners, chatbots can make a substantial contribution to a dynamic, inclusive, and

effective EFL learning experience. Their role must be informed by effective instructional design, focused learning goals, and a continually reviewed picture of learner outcomes to help to ensure that the technology plays a support role to human interaction and expert guidance, and not a replacement for it. Finally, the pragmatic use of chatbots can reframe EFL learning, achieving the desired inclusion and engagement, as well as a more individual and interactive path.

References

Ait, T., El Hajji, M., & Es-Saady, Y. (2024). The impact of educational chatbot on student learning experience. *Education and Information Technologies*, 29, 10153–10176. https://doi.org/10.1007/s10639-023-12166-w

Baskara, R. (2023). Chatbots and Flipped Learning: Enhancing Student Engagement and Learning Outcomes through Personalised Support and Collaboration. *IJORER, 4*(2), 223-238. https://doi.org/10.46245/ijorer.v4i2.331

Belda-Medina, J., & Kokošková, V. (2023). Integrating chatbots in education: insights from the Chatbot-Human Interaction Satisfaction Model (CHISM). *International Journal of Educational Technology in Higher Education, 20*(62). https://doi.org/10.1186/s41239-023-00432-3

Blijenburg, I., & IJsselsteijn, W. (2022). *Co-designing a chatbot that helps international students deal with acculturative stress.* Eindhoven University of Technology.

Cislowska, A., & Peña, B. (2024). Integration of Chatbots in Additional Language Education: A Systematic Review. *European Journal of Educational Research, 13*(4). https://doi.org/10.34005/lingua.v20i1.3492

Dooly, M., & Vinagre, M. (2022). Research into practice: Virtual exchange in language teaching and learning. *Language Teaching, 55*(3), 392-406. https://doi.org/10.1017/S0261444821000069

Du, J., & Ben Kei, D. (2024). Transforming language education: A systematic review of AI-powered chatbots for English as a foreign language speaking practice. *Computers and Education: Artificial Intelligence*, 6. https://doi.org/10.1016/j.caeai.2024.100230

Fryer, L. (2020). Bots for language learning now: Current and future directions. *Language Learning and Technology, 24*(2), 8-22. http://hdl.handle.net/10125/44719

Huang, W., Khe, F., & Fryer, L. (2022). Chatbots for Language Learning--Are They Really Useful? A Systematic Review of Chatbot-Supported Language Learning. *Journal of Computer Assisted Learning, 38*(1), 237-257. http://dx.doi.org/10.1111/jcal.12610

Jeon, J. (2021). Exploring AI chatbot affordances in the EFL classroom: Young learners' experiences and perspectives. *Computer Assisted Language Learning, 37*(1-2), 1-26. https://doi.org/10.1080/09588221.2021.2021241

Karataş, F., Abedi, F., & Ozek Gunyel, F. (2024). Incorporating AI in foreign language education: An investigation into ChatGPT's effect on foreign language learners. *Education and Information Technologies, 29*, 19343–19366. https://doi.org/10.1007/s10639-024-12574-6

14 Vol. 6 No. 12, 2025. e250283 | Sección Educación | Peer Reviewed

RUNAS Journal of Education and Culture
Revista de Educación y Cultura
Revista de Educação e Cultura

Kuhail, M., Alturki, N., & Alramlawi, S. (2023). Interacting with educational chatbots: A systematic review. *Education and Information Technologies,* 28, 973-1018. https://doi.org/10.1007/s10639-022-11177-3

Li, B., Lowell, V., Wang, C., & Li, X. (2024). A systematic review of the first year of publications on ChatGPT and language education: Examining research on ChatGPT's use in language learning and teaching. *Computers and Education_ Artifical Intelligence,* (7). https://doi.org/10.1016/j.caeai.2024.100266

Lingaiah, J., Ishak, S., & Mishra, P. (2024). AI-Driven Chatbots as Language Tutors: Enhancing Written Proficiency in ESL. *International Journal of Humanity and Social Sciences, 3*(5), 78-95. https://doi.org/10.47941/ijhss.2410

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLOS Medicine, 6*(7). https://doi.org/10.1371/journal.pmed.1000097

Mosleh, S. (2024). Beyond Traditional Language Learning: EFL Student Views on ChatGPT in Saudi Arabia. *Arab World English Journal,* 10, 15-35. https://dx.doi.org/10.24093/awej/call10.2

Mosleh, S. (2024). Siri as an interactive pronunciation coach: its impact on EFL learners. *Cogent Education, 11*(1). https://doi.org/10.1080/2331186X.2024.2304245

Pan, M., Guo, K., & Lai, C. (2024). Using Artificial Intelligence Chatbots to Support English-as-a-Foreign Language Students' Self-Regulated Reading. *RELC Journal, 40*(9), 1-50. https://doi.org/10.1177/00336882241264030

Rebolledo, R., & González, F. (2023). Exploring the Benefits and Challenges of AI-Language Learning Tools. *International Journal of Social Sciences and Humanities Invention, 10*(1). https://doi.org/10.18535/ijsshi/v10i01.02

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research,* 109, 333-339. https://doi.org/10.1016/j.jbusres.2019.07.039

Wiboolyasarin, W., W. K., & Tiranant, P. (2024). Designing chatbots in language classrooms: an empirical investigation from user learning experience. *Smart Learning Environments, 11*(32). https://doi.org/10.1186/s40561-024-00319-4

Wollny, S., Schneider, J., Di Mitri, D., Weidlich, J., Rittberger, M., & Drachslet, H. (2021). Are We There Yet? - A Systematic Literature Review on Chatbots in Education. *Frontiers,* 4, 1-18. https://doi.org/10.3389/frai.2021.654924

Ying Soon, G., Binti Abdullah, N., Binti Abdul, R. N., Suyan, Z., & Yiming, C. (2024). Integrating AI Chatbots in ESL and CFL Instruction: Revolutionizing Language Learning with Artificial Intelligence. *LatIA, 2*(23), 1-16. https://doi.org/10.62486/latia202423

Zhai, C., & Wibowo, S. (2022). A systematic review on cross-culture, humor and empathy dimensions in conversational chatbots: the case of second language acquisition. *Helyon, 8*(12). https://doi.org/10.1016/j.heliyon.2022.e12056

Authors

Silvia Patricia Guartán Guamán. Holds a bachelor's degree in educational sciences with a specialization in English from Universidad Técnica Particular de Loja (UTPL). She is currently pursuing a Master's degree in Pedagogy of English Language Teaching at Universidad Católica de Cuenca. She holds an international B2-level English language proficiency certification. Her academic work focuses on teaching English as a foreign language through personalized instruction and the implementation of inclusive approaches and technology integration in the teaching-learning process.

Esteban Arnoldo Valdiviezo Ramírez. Holds a professional degree in Commercial Engineering, which has provided him with extensive expertise in business organization and management at both national and international levels. In addition to his background in business, he has dedicated over two decades to English language instruction, teaching in diverse educational settings across multiple regions. His academic qualifications include a Master's in Applied Linguistics in Teaching English as a Foreign Language, a Master's in E-Learning Education, and a Diploma in University Teaching. Currently, he serves as a faculty member in the Master's Program for English Language Teaching at Universidad Católica de Cuenca, where he also acts as a research advisor, guiding graduate students in the development of scholarly articles. His research interests encompass innovative methodologies and emerging technologies in language education, with a particular emphasis on the integration of artificial intelligence in pedagogical frameworks. Through his academic contributions, Esteban seeks to advance the field of English language teaching by exploring AI-driven solutions that enhance instructional effectiveness and learning outcomes.

Declaration