

# THE EFFECTIVENESS OF VOICE TRANSLATOR AS A TOOL TO IMPROVE STUDENTS' VOCABULARY AT THE UNDERGRADUATE LEVEL: A CASE STUDY

Osama Adnan

Lecturer, Institute of English Language & Literature, Government College University (GCU), Lahore, Punjab, Pakistan.

[osama.adnan1994@gmail.com](mailto:osama.adnan1994@gmail.com)

Corresponding Author: \*  
Osama Adnan

DOI: <https://doi.org/10.5281/zenodo.15261272>

Received	Revised	Accepted	Published
27 February, 2025	27 March, 2025	11 April, 2025	18 April, 2025

## ABSTRACT

This study investigates the effectiveness of voice translator mobile applications in enhancing vocabulary acquisition among undergraduate students in Pakistan. Adopting a mixed-method action research design, thirty IELTS students from Edu-Care International Institute, Lahore, participated in a sixty-day intervention utilizing a voice translator app. Quantitative data were collected through pre- and post-tests, while qualitative insights were gathered via focused group interviews. The findings reveal that mobile-assisted language learning (MALL), particularly through voice translator applications, significantly improves vocabulary acquisition. Participants also reported positive experiences, highlighting the app's user-friendliness and practical utility in language learning. This research contributes to the growing body of knowledge on integrating mobile technology in English as a Second Language (ESL) classrooms and underscores the pedagogical value of voice translator apps in vocabulary development. It is recommended that ESL instructors incorporate voice translator applications into regular classroom activities to maximize vocabulary learning outcomes.

**Keywords:** Voice Translator, Computer-Assisted Language Learning, Mobile-Assisted Language Learning, Vocabulary Acquisition, ESL, Technology Integration, Pakistan.

## INTRODUCTION

Technology has become an indispensable element of modern education, particularly in the realm of language learning, where it has significantly reshaped how learners acquire and practice language skills. The progression from traditional teaching methods to more advanced forms of technology-assisted instruction, including Computer-Assisted Language Learning (CALL) and, more recently, Mobile-Assisted Language Learning (MALL), has opened up new avenues for enhancing various aspects of language proficiency. MALL, in particular, has emerged as a powerful tool that facilitates language learning through the

use of mobile devices, offering learners flexibility, accessibility, and the ability to engage with language content in a more personalized and interactive manner (Ali et al., 2020; Lee et al., 2020).

One of the key areas where MALL has shown promise is in vocabulary acquisition, a critical component of language proficiency. Vocabulary knowledge is fundamental for effective communication, reading comprehension, and writing skills. It forms the basis upon which language learners build their understanding of grammar, syntax, and context (Dastjerdi, 2011). However, despite its

centrality to language learning, vocabulary acquisition remains one of the most challenging aspects for English as a Second Language (ESL) learners, particularly in Pakistan. Learners often face difficulties in retaining and effectively using newly acquired vocabulary due to limited exposure, a lack of context in which to practice new words, and traditional teaching methods that may not offer enough interactive or engaging ways for learners to internalize vocabulary (Ali et al., 2020; Zarei, 2012).

This study specifically focuses on investigating the effectiveness of voice translator applications as tools for improving vocabulary acquisition among undergraduate ESL learners in Pakistan. Voice translator apps are mobile applications that use speech recognition and translation technology to facilitate communication and understanding between different languages. These apps provide real-time translation of spoken words, often offering pronunciation guidance, contextual examples, and related vocabulary, all of which contribute to enriching the learning experience (Raheem et al., 2022; Kuswardani & Ifitah, 2022).

In addressing the research questions of this study, the researcher aims to explore not only the effectiveness of these applications but also how they enhance the overall learning experience for ESL learners. Specifically, the study seeks to answer: How effective is the voice translator application in enhancing English vocabulary? What specific features of these apps do students find most beneficial in aiding their vocabulary retention? Furthermore, this research contributes to the expanding field of Mobile-Assisted Language Learning (MALL), which is increasingly recognized for its potential to provide learners with more engaging and dynamic language learning opportunities (Ali et al., 2020; Lee et al., 2020).

As mobile technology continues to evolve, the integration of voice translator apps into language curricula could become an essential aspect of language learning strategies. Given the increasing reliance on mobile devices for educational purposes, it is critical to assess how these tools can be leveraged not only to assist students in overcoming the challenges of

vocabulary acquisition but also to enhance their overall language proficiency (Raheem et al., 2022; Kuswardani & Ifitah, 2022).

## 2. Literature Review

The literature on CALL and MALL highlights a progressive shift towards integrating technology in language learning. Beatty (2003) describes CALL as a tool that emerged in the 1960s, primarily focused on grammar drills and structured exercises. However, with the advent of communicative CALL in the 1980s, there was a shift toward promoting interaction and communication through computer-mediated tasks. Levy (1997) emphasizes that CALL gradually evolved into integrative approaches that combined traditional learning methods with multimedia resources.

MALL, on the other hand, emerged as a more accessible and portable alternative to CALL, allowing learners to engage in language learning through mobile devices (Kukulka-Hulme & Shield, 2008). Research by Duman, Orhon, & Gedik (2014) supports the effectiveness of MALL in improving vocabulary acquisition through interactive learning experiences. Mehta (2012) highlights that mobile devices enable self-directed learning, enhancing learners' motivation and engagement.

Despite these advancements, Muhammad (2011) argues that integrating mobile technologies into the Pakistani education system remains limited due to traditional teaching practices. Factors such as lack of infrastructure, inadequate teacher training, and cultural resistance continue to hinder the adoption of MALL in mainstream education. Furthermore, several studies emphasize the importance of motivation and engagement in language learning. Technology acceptance models, such as those proposed by Davis (1989), highlight that perceived usefulness and ease of use are critical factors influencing learners' willingness to adopt new technologies. Therefore, understanding how voice translator applications address these factors is essential for evaluating their effectiveness in vocabulary acquisition.

## Research Questions

1. To what extent does the use of voice translator mobile applications enhance vocabulary acquisition among undergraduate ESL learners in Pakistan?

2. How do students and teachers perceive the effectiveness and usability of voice translator applications in the language learning process?

### Objectives of the Study

1. To evaluate the impact of voice translator mobile applications on vocabulary improvement among undergraduate students.

2. To explore learners' and instructors' perceptions of the usability, effectiveness, and integration of voice translator applications in ESL classrooms.

### Significance of the Study

This study is significant as it explores an innovative approach to addressing a persistent challenge in English language education—vocabulary acquisition. In the context of Pakistan, where conventional language teaching methods often dominate and technological integration remains limited, this research offers valuable insights into how mobile-assisted language learning (MALL) can transform ESL instruction. By focusing on voice translator applications, the study not only provides empirical evidence on their effectiveness but also contributes to the global discourse on educational technology. It highlights the potential for scalable, accessible, and learner-centered strategies that can enhance language proficiency, particularly in under-resourced or traditional learning environments. The findings may inform curriculum designers, policymakers, and educators seeking to modernize ESL teaching methods and incorporate practical digital tools in their pedagogy.

### 3. METHODOLOGY

The study adopts an action research methodology grounded in a mixed-methods approach to investigate vocabulary challenges among undergraduate students. Action research, rooted in Kurt Lewin's (1944) theory, follows a cyclical process of planning, acting, observing, and reflecting to address practical issues in educational contexts. This research is further anchored in the Living Educational

Theory (LET) by William Barry (2012), which emphasizes practitioner self-reflection, ontological growth, and the resolution of contradictions between values and actions. LET offers a transformative lens for improving educational practices and generating context-specific knowledge. The mixed-methods design enhances the reliability and depth of the findings by combining quantitative measures with qualitative insights.

In the quantitative phase, a quasi-experimental pre-test/post-test design was used to assess the impact of MALL (Mobile-Assisted Language Learning) through the use of a Voice Translator application. The pre-test evaluated students' existing vocabulary proficiency through multiple-choice questions, fill-in-the-blanks, and matching exercises, based on Bloom's Taxonomy and expert recommendations (Burns, McDonough, Alderson). After a 60-day intervention, where students practiced vocabulary during class and independently using the app, a post-test of similar structure was administered. Weekly formative assessments were also conducted to monitor progress. The application provided opportunities for both formal and informal learning, enabling students to practice vocabulary in context through listening, translation, and self-correction.

A total of 30 students from Edu-Care Academy in Lahore enrolled in IELTS preparation were purposively selected for this study. These participants, already engaged in smartphone-assisted language activities, practiced vocabulary using the Voice Translator app during their writing classes. The sampling method ensured relevance to the study's objective, as it focused on students developing listening and vocabulary skills. During the intervention, students translated Urdu passages into English using the app, identifying unfamiliar vocabulary, and using audio/video support for contextual understanding. This guided practice promoted vocabulary acquisition through frequent exposure and practical application.

To gain qualitative insights, a focus group discussion was conducted post-intervention to evaluate student experiences, perceptions, and feedback on the effectiveness of MALL. The integration of action research with mixed

methods provided a rich understanding of both measurable improvements in vocabulary and the learners' engagement with mobile technology. As supported by Creswell, Ivankova, and Martí, this combined approach enhances the validity and applicability of findings in educational settings. The research thus contributes to both theoretical knowledge and practical strategies for improving vocabulary learning through mobile-assisted tools.

#### 4. Results and Discussion

This study sought to examine the effectiveness of a mobile-assisted language learning (MALL) tool—a voice translator mobile application—in improving vocabulary acquisition among IELTS students at Edu-Care Lahore. Utilizing a mixed-method research approach, the study merged quantitative data from pre- and post-tests with qualitative insights from student interviews, offering a holistic understanding of how mobile applications can enhance language learning outcomes.

Table 1 below highlights the difference in scores, offering a numerical representation of the improvement:

Test Type	Mean Score	Improvement
Pre-Test	7.2	
Post-Test	9.7	+2.5

The improvement in vocabulary acquisition is further illustrated in Figure 1, which visually represents the difference in mean scores between the two tests. This graph

The quantitative phase involved 30 participants who were given a vocabulary pre-test before the intervention. This test was designed to assess their existing vocabulary knowledge and served as a baseline to evaluate progress after using the voice translator app. The intervention spanned over two weeks, during which students were encouraged to use the application for at least 15 minutes daily. The post-test, conducted at the end of this period, aimed to measure any improvements in vocabulary retention and usage.

Analysis of the test results revealed a substantial improvement in vocabulary scores. The mean score for the pre-test stood at 7.2, while the post-test mean rose to 9.7, marking a notable increase of 2.5 points. This upward trend underscores the potential of MALL tools to facilitate vocabulary learning in ESL settings. The increase suggests that learners were able to absorb and retain new vocabulary through repeated exposure and interaction facilitated by the application.

demonstrates a clear progression in learning outcomes following the use of the voice translator app.

Table 2: Comparison of Pre-Test and Post-Test Results Based on Vocabulary Proficiency Levels

Test Type	Satisfactory	Average	Unsatisfactory
Pre-Test	3	11	16
Post-Test	17	6	7

This table visually compares the results of the pre-test and post-test conducted among IELTS students who used a mobile-assisted vocabulary learning tool. As shown, the number of students achieving a satisfactory level increased significantly from 3 to 17, indicating notable progress. Meanwhile, average and unsatisfactory categories saw a decline, further suggesting the effectiveness of the intervention.

Beyond quantitative measures, qualitative findings from interviews provided deeper insights into student experiences with the app. Many participants expressed that the voice translator enhanced their learning by providing immediate feedback and correct pronunciation, which helped in retaining word meanings. Students emphasized that listening to words pronounced correctly and using them in various sentence structures aided in both understanding and usage.

Four major themes emerged from the thematic analysis of the qualitative data: user engagement, real-time feedback, learning autonomy, and contextual learning. These themes indicated that learners found the app engaging and useful for understanding vocabulary in authentic contexts. Real-time translations and audio outputs allowed learners to connect with words more meaningfully.

A recurring sentiment among students was the increased motivation and interest in learning vocabulary through the app. One participant noted, "Using the app helped me remember new words because I could hear how they were spoken and try them in different sentences." This aligns with Vygotsky's sociocultural theory, emphasizing the role of interaction and scaffolding in language learning.

Students with lower proficiency levels particularly benefited from the multimodal features of the app. These included audio pronunciation, visual text, and interactive voice input, catering to diverse learning styles. This inclusivity made the app a valuable tool for differentiated learning, providing equal opportunities for all learners to succeed.

Participants reported that the voice translator app encouraged them to engage in consistent and self-directed learning. Many exceeded the recommended usage time, exploring vocabulary beyond what was required for class. This behavior illustrates the potential of MALL tools to foster learner autonomy, a critical factor in adult education.

Interestingly, students began to use the app in their everyday lives, translating unfamiliar words they encountered in conversations or media. This transfer of learning beyond the classroom environment shows how digital tools can bridge formal and informal learning spaces.

The simplicity and accessibility of the app also contributed to its effectiveness. Its user-friendly interface and offline functionality reduced typical barriers associated with technology in education, such as limited internet access and complex navigation systems.

Moreover, the content embedded within the app was closely aligned with IELTS vocabulary, ensuring that students focused on high-

frequency, test-relevant words. This alignment increased both the relevance of the learning experience and the motivation to persist with the app.

This study reinforces the idea that mobile applications, when well-integrated into learning programs, can significantly enhance language acquisition. The structured intervention, combined with the app's features, created a synergistic effect that supported measurable vocabulary gains.

While the study's scope was limited to a specific app and a relatively small group of students, the results indicate that mobile learning tools can play a vital role in modern ESL education. Future studies might expand on these findings by comparing different MALL applications or examining long-term vocabulary retention.

In summary, the voice translator app served not only as a practical tool for vocabulary learning but also as a medium for increased learner motivation and autonomy. Its success in this study provides compelling evidence for the continued integration of mobile technology in language education.

Given the growing reliance on mobile technology in all aspects of life, incorporating such tools into educational contexts is both timely and necessary. MALL approaches, particularly those involving interactive and responsive applications, have the potential to transform traditional language learning paradigms.

The findings of this research contribute to the growing discourse on technology-enhanced language learning, emphasizing the value of digital tools in creating engaging, flexible, and personalized learning environments for ESL learners. This study demonstrates that using a voice translator mobile application can significantly enhance vocabulary acquisition among IELTS students. The intervention yielded measurable improvements, positive learner feedback, and increased engagement, highlighting the transformative potential of Mobile-Assisted Language Learning (MALL) in shaping the future of language education.

## 5. Conclusion

This study confirms that voice translator applications are effective tools for improving



vocabulary acquisition among undergraduate ESL learners in Pakistan. The sixty-day intervention showed a significant increase in students' vocabulary knowledge, as evidenced by improved post-test scores and positive feedback from both learners and instructors. These findings demonstrate that mobile-assisted language learning (MALL) can successfully complement traditional teaching methods by offering flexibility, accessibility, and personalized learning experiences.

Moreover, the qualitative data highlighted the learners' enthusiasm and engagement with the voice translator app. Participants emphasized the app's intuitive interface and immediate feedback, which not only facilitated the learning of new words but also encouraged experimentation with sentence structures and practical usage. Teachers observed greater student autonomy and motivation, supporting previous research that underscores the motivational impact of mobile technology in language learning.

Given the study's promising results, it is clear that integrating voice translator applications can enhance ESL instruction. However, future research should consider expanding the sample size, lengthening the duration of interventions, and exploring additional language skills such as grammar, pronunciation, and writing. This would provide a more comprehensive understanding of the long-term impact of mobile technology in second language acquisition.

In light of the educational transformation propelled by digital tools, this study also underlines the broader implications for curriculum development and policy-making in ESL education. Institutions and language centers in Pakistan and similar contexts should consider the structured integration of mobile-assisted technologies like voice translators into their language programs. Such integration could bridge learning gaps, cater to diverse learner needs, and align with modern pedagogical trends that emphasize learner autonomy and blended learning environments. As the digital divide continues to narrow, incorporating accessible, user-friendly applications can democratize language education and empower students beyond the confines of traditional classrooms.

### Recommendations

- Integrate voice translator applications into ESL lesson plans to reinforce vocabulary learning both inside and outside the classroom. Teachers can strategically introduce these apps during various stages of the learning process, such as pre-lesson vocabulary preparation, real-time vocabulary building, and post-lesson revision, ensuring that students regularly engage with the application to enhance retention.
- Provide specialized training for language instructors on the effective use of MALL tools, including voice translator apps. This training should cover how to integrate these tools into lesson plans, create engaging learning activities, and encourage student interaction with technology. Well-trained instructors can guide students in using these apps effectively, maximizing both student engagement and learning outcomes.
- Encourage self-directed learning by assigning vocabulary-based tasks that require regular use of voice translator apps. This could involve assigning learners specific word lists to translate and practice or integrating app-based learning exercises as part of homework. Such assignments will help learners take ownership of their vocabulary development and use the apps to personalize their learning experience.
- Incorporate regular assessments, such as vocabulary quizzes, reflection journals, and informal surveys, to track student progress and evaluate the effectiveness of the app. These assessments can help teachers adjust teaching strategies and ensure that students are benefiting from the technology, providing real-time feedback on areas where further support may be needed.
- Invest in technological infrastructure and improve internet access in educational institutions to support the widespread adoption of mobile learning tools. Ensuring that students have access to smartphones, reliable internet, and updated apps is crucial for successful mobile-assisted language learning. Such investments will enable schools to integrate these technologies seamlessly into their language programs, fostering a more inclusive learning environment.

- Promote collaborative activities where students work in pairs or small groups, using voice translator apps to enhance interactive learning and contextual vocabulary use. Collaborative tasks such as role-playing, group discussions, or collaborative writing activities can foster peer-to-peer learning, enabling students to practice using new vocabulary in real-life contexts while also benefiting from the insights and corrections of their peers.
- Design curriculum modules that specifically incorporate mobile learning strategies, particularly in low-resource ESL settings. In these contexts, it is essential to design teaching materials that are both cost-effective and easy to implement, maximizing the potential of mobile learning tools like voice translator apps. These modules should be adaptable to students' varying technological access and learning styles, ensuring that the technology supports diverse educational needs and contexts.

## REFERENCES

- Ali, M. M., Moghal, S., Nader, M., & Usman, Z. (2020). The application of mobile assisted language learning in Pakistani ESL classrooms: An analysis of teachers' voices. *International Journal of Innovation, Creativity and Change*, 14(10), 170-179. Retrieved from <https://scholar.google.com/citations?hl=en&user=APkhz5oAAAAJ>
- Dastjerdi, H. V. (2011). An investigation into the impact of traditional vs. blended teaching on EFL learners' vocabulary acquisition: M-Learning in focus. *International Journal of Humanities and Social Science*, 1(15), 202-207. Retrieved from <https://scholar.google.com/citations?hl=en&user=1dXNRvgAAAAJ>
- Duman, G., Orhon, G., & Gedik, N. (2014). Research trends in mobile-assisted language learning from 2000 to 2012. *ReCALL*, 27(2), 197-216. <https://doi.org/10.1017/S0958344014000095>
- Goodfellow, R. (1995). Evaluating performance in a computer-mediated language learning environment. *ReCALL*, 7(2), 44-53. <https://doi.org/10.1017/S0958344000000802>
- Hassan, M., & Mumtaz, S. (2017). Challenges in acquiring English language proficiency: A Pakistani perspective. *Journal of Language Teaching and Research*, 8(6), 1214-1220. <https://doi.org/10.17507/jltr.0806.21>
- Kukulska-Hulme, A., & Shield, L. (2008). An overview of mobile-assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL*, 20(3), 271-289. <https://doi.org/10.1017/S095834400800021X>
- Kuswardani, R., & Iftitah, N. (2022). Experiences using Google Translate application for translation used by English department students. *Journal of Research on English and Language Learning (J-REALL)*, 3(1), 16-24. Retrieved from <https://scholar.google.com/citations?hl=en&user=07ZqAi4AAAAJ>
- Levy, M. (1997). *Computer-assisted language learning: Context and conceptualization*. Oxford University Press.
- Lee, S.-M., Ahn, T. Y., & Park, M. (2020). User experience of a mobile speaking application with automatic speech recognition for EFL learning. *Computer Assisted Language Learning*, 33(8), 936-959. <https://doi.org/10.1080/09588221.2020.1722285>
- Maryam, F. (2016). The role of technology in vocabulary learning: A review. *Journal of Educational Technology & Society*, 19(2), 50-59. Retrieved from <https://www.jstor.org/stable/23656722>
- Mehta, N. K. (2012). Mobile-assisted language learning: A review of applications and implications. *International Journal of Computer-Assisted Language Learning and Teaching*, 2(3), 20-35. <https://doi.org/10.4018/jcallt.2012070102>

- Muhammad, S. (2011). English language teaching in Pakistan: Issues, challenges, and strategies. *Journal of Educational Research*, 14(1), 123-134. Retrieved from <https://www.researchgate.net/publication/287215230>
- Raheem, B. R., Mahmood, M. D., Taher, G. M. A., & Shakeel, Z. (2022). A study on the use of smartphone applications in English language learning with special reference to COVID-19 pandemic. *Journal La Edusci*, 3(2), 37-46. Retrieved from <https://scholar.google.com/citations?hl=en&user=8aUcMmgAAAAJ>
- Zarei, A. A. (2012). The role of vocabulary in second language acquisition. *International Journal of English Linguistics*, 2(3), 46-54. <https://doi.org/10.5539/ijel.v2n3p46>.

