

## A SYSTEMATIC REVIEW: THE USE OF MOBILE LANGUAGE LEARNING APPS TO IMPROVE VOCABULARY

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### *Abstract*

*Mobile apps for learning languages have become very popular tools for helping students build their vocabulary and improve language skills. However, using these apps effectively in education settings has both benefits and challenges. This systematic review looks at the challenges of using mobile language learning apps specifically to teach vocabulary, and how they affect students' vocabulary and language learning outcomes. Previous research by Polakova (2022) looks at how using apps and mobile devices in EFL (English as a Foreign Language) courses might improve vocabulary development. Following PRISMA guidelines, relevant articles were analysed in-depth. Findings revealed challenges like motivational barriers, decontextualized environments, technical limitations, pedagogical shortcomings, and lack of empirical evaluations. However, studies also highlighted positive influences, crediting engaging features, flexibility, and advanced technologies. As technology keeps improving, properly addressing the identified challenges through careful app design, implementation planning, and thorough testing will be important to fully unlocking the potential of mobile apps to revolutionize how vocabulary is taught.*

**Keywords:** *Mobile language learning apps, vocabulary, English as foreign language, English language learning.*

### **INTRODUCTION**

The digital age has brought about a major transformation in the way to learn, including learning new languages. Modern education relies heavily on technology, which is becoming an essential component that not only improves student performance, but also elevates instructional design to a more relevant and engaging level (M. Rafiq, Hashim, Yunus, & Norman, 2020). With the increasing use of mobile devices such as smart phones and tablets, mobile learning and language learning apps are gaining popularity in education world. As Lu and Xiong (2023) state, “Mobile language learning applications provide students a variety of benefits, including convenience, individualized learning materials, desire to study, and access to varied media formats (video, graphics, text, and sound)” (p.2). Furthermore, these applications often incorporate gamification elements, such as points, badges, and leader boards, which can increase student ‘motivation and engagement.

This research is important to do in order to be relevant to current technological advances. As Bojovic et al. (2020) describe, “mobile learning application as one of the most known technology groupings of the past decade” (p.1468). Currently, technologies are regarded as useful instruments for enhancing

human activities. Mobile application has unique features and functions, making it a valuable option for education. This research can provide insight into how technology can be integrated into language learning. Through the rapid advancement of technology, there is an opportunity to use tools such as learning apps to assist with teaching and vocabulary acquisition. Mobile language learning offers greater availability and accessibility for learners. They can access learning resources and information anytime and anywhere through their smart phones. (Almaiah, Alamri, & Al-rahmi, 2019). This flexibility allows learners to better integrate language study into their daily routines and take advantage of small pockets of free time throughout the day.

Based on a previous study conducted by Loewen & Crowther (2019) successfully established the effectiveness of using mobile assisted language learning in language learning for one semester. The study involved participants who showed improvement in their language skills. In addition, the study also addressed the effect of participants' motivation and level of perseverance on their language learning outcomes. Contrary to that, the goal of this study is to close the research gap by examining the effects of mobile language learning applications on vocabulary improvement in learners over the long and short terms.

The topic mobile language learning apps of has increased since learning apps has become more accessible to the general public. Previous research conducted by Polakova (2022) looks at how using apps and mobile devices in EFL (English as a Foreign Language) courses might improve vocabulary development. The study's conclusions offer guidance to educators on how to use technology into language training as well as insights into the advantages of mixing mobile learning with conventional in-person instruction. After that, another study conducted by John *et al.* (2021) discusses the development of the "Balloon Vocabulary" mobile app, which aims to assist ESL students in developing their vocabulary and reading comprehension. The results reveal that it was beneficial to the students, as seen by their increased motivation to study and its increased vocabulary. Based on previous research, the researchers felt it was important to examine this topic.

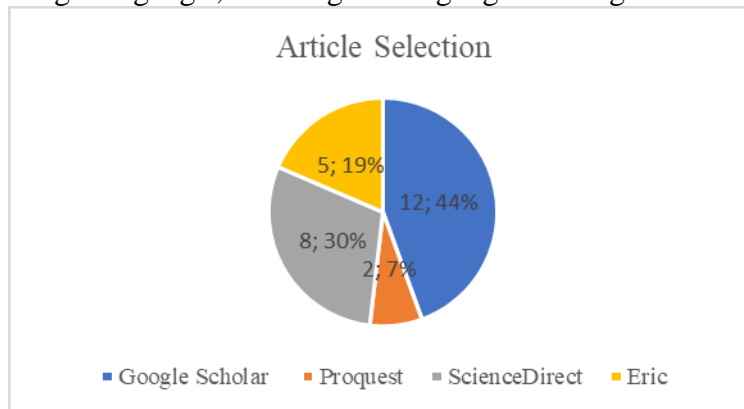
The rise of mobile language learning apps has opened the door to a whole new world of language learning. To help students expand their vocabulary in the target language, these apps offer an innovative and interactive approach. These apps allow students to practice vocabulary in interesting and relevant contexts with features such as games, quizzes and customized exercises. Recent studies have shown that the use of mobile language learning apps can significantly improve students' vocabulary acquisition. This is because apps provide easy access to learning materials and allow students to practice anytime and anywhere. Additional empirical studies are needed to determine how specific app features and designs can be optimized to improve long-term retention and vocabulary acquisition, published from 2019 to 2024. The research questions include: i) Do mobile language learning apps have any challenges in improving student's vocabulary? ii) Do mobile language learning apps influence learning outcomes for students?

## METHODOLOGY

The research design of this research is a systematic review. Paul, Lim, O'Class, and Hao (2021, p. 2) state systematic literature reviews encompass the

process of compiling, organizing, and evaluating the body of current literature in a review domain. The reason the researcher used this method is because systematic reviews provide a structured method of consolidating existing research on the subject, allowing for a thorough assessment of the effectiveness and implications of using mobile language learning apps. By going through a rigorous and organized process, researcher can identify existing research gaps and suggest areas for future research. A systematic approach reduces biases that may be encountered in more anecdotal or unsystematic research. Systematic reviews improve the quality of evidence obtained as they only involve the results of analysing empirical data that has already been conducted.

The researchers use the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach. The stages of conducting the research is based on five steps which consist of: (i) framing question, (ii) search procedure, (iii) inclusion and exclusion criteria, (iv) data extraction, and (v) data analysis. The researcher used several sources to collect articles, including using Google Scholar, ProQuest, ScienceDirect, and ERIC. The use of various sources of article searches was carried out to obtain comprehensive data and enrich the references used in the study. To be more specific, *table 1 displays* the analysis of the selected based on the inclusion and exclusion criteria. Referring to the research of Shortt *et al.* (2023), the researchers used some common keywords such as 'mobile-assisted language learning', 'language learning', 'second language acquisition', and 'foreign language education'. Meanwhile, in this study, the researchers determined the keywords to search for articles by adjusting the desired context (scope of education), namely 'mobile language learning app', 'students' vocabulary skills', 'English as a foreign language', and 'English language learning'.



Picture 1. Article Selection...

Following then, screening and inclusion procedures were used to select the papers for the main analysis. The researchers next searched for empirical studies regarding mobile language learning apps that were published in journals by looking through abstracts and article titles. The criteria for articles are stated as follows:

- 1) Empirical Research
- 2) Publication year within five years (2019-2024)
- 3) The research discusses the effectiveness mobile language learning apps for improving vocabulary

- 4) The research only taken in English as Foreign Language context
- 5) The setting is education in the area of English Language Learning

The extracted data was synthesized using a narrative approach. The studies were categorized based on their research design. Findings related to challenges and learning outcomes were analyzed and compared between studies. The strengths and limitations of the included studies were also critically evaluated.

## FINDINGS AND DISCUSSION

Based on the analysis of the selected articles, it can be concluded that mobile language learning apps have been widely used to develop language skills, especially vocabulary. While the use of such apps to improve vocabulary acquisition has received considerable attention from academics, researchers have also found challenges in integrating these apps into vocabulary learning for language learners. Existing studies reveal that such apps have been applied in language learning in a comprehensive manner, not limited to specific skills. However, researchers noted various barriers in utilizing mobile language learning apps specifically to help students enrich vocabulary.

The use of mobile language learning applications to improve vocabulary has several challenges. For instance, in the studies of Riva *et al.* (2023) and Fathi *et al.* (2019) reported that “there are difficulties in implementing such applications in the classroom”. Then Ginting *et al.* (2023) concluded that “students have differences interest and motivation levels that can complicate the learning process”. Another study conducted by Purwanto *et al.* (2023) found that “the use of mobile language learning applications can also be constrained by poor internet connection and technical errors in the application used”.

There are further challenges that must be taken into consideration. One of these is that learners under various intervention situations have varying prior knowledge. As noted by Lee and Aspiranti (2023), skilled readers could already be well-versed in a wide range of language, which could impact how comparable the outcomes are across various groups. The majority of studies on the use of Mondly's VR application for learning vocabulary in second languages have employed desktop-based VR; however, research is still needed on the use of VR using mobile-rendered head-mounted displays (HMDs) for vocabulary acquisition. Furthermore, Tai *et al.* (2020) noted that “participants' language learning may also be impacted by the variation in exposure times between VR players and video watchers”.

While these challenges are significant and warrant careful consideration, it's equally important to examine the potential benefits and positive outcomes associated with mobile language learning apps. Several studies have provided evidence that mobile language learning apps can positively influence learning outcomes for students. A study by Irawan *et al.* (2020) found that “the use of mobile apps enabled students to express their ideas more accurately and fluently, understand reading materials better, and respond effectively in English”. Additionally, the apps enhanced students' enthusiasm to study English, with the gamified and interactive components keeping them engaged and motivated to practice and increase their vocabulary regularly.

Similar results were made by Riva *et al.* (2023), who found that “students who used mobile language learning applications were more motivated, engaged,

and active in their English language learning”. Additionally, Fathi *et al.* (2019) found that “mobile applications affect learning outcomes by giving students greater learning autonomy by letting them personalize their education and having access to resources at any time and place”. Purwanto and Syafryadin (2023) discovered that “students found the Duolingo app entertaining, which encouraged them to be more involved and active in their vocabulary”.

Another study by Ou Yang *et al.* (2020) found that students found the "Saving Alice" app's interactive and game-like features to be interesting, which may have an impact on their motivation to study and practice language. Additionally, Ginting and Fithriani (2021) noted that the app they examined increased learning outcomes because of its interactive lessons, vocabulary exercises, speech recognition technology, and engaging learning tools. According to Dore *et al.* (2019), “children's engagement and understanding are increased when material is integrated into a game that has a meaningful context”. This optimizes learning. Furthermore, Tai *et al.* (2020) observed that participants had good evaluations of aspects including simulation, immersion, interaction, presence, experience, and motivation in their study on a VR app for vocabulary acquisition. These studies collectively suggest that mobile language learning apps, including those with gamified, interactive, and immersive elements, can have a positive impact on learning outcomes by enhancing student engagement, motivation, autonomy, and language skills, particularly in improving vocabulary and overall English proficiency.

Several studies point to the positive impacts mentioned above as well as other aspects of using mobile language learning apps. For example, research shows that these apps can support a variety of learning styles and allow for more individualized learning. In addition, there are some apps that have progress tracking features, which allow students to track their own progress and help increase their metacognitive awareness. The social aspect is also important. Some apps have community or competition features that allow students to interact and compete with users from all over the world. Not only does this increase motivation from an outside source, but it also gives students the opportunity to use the language in a more real-world environment. However, keep in mind that the effectiveness of these features may vary depending on individual characteristics and the learning context.

## CONCLUSION AND SUGGESTION

The finding of this literature reviews indicates that mobile language learning apps play an important role in improving students' vocabulary acquisition and their overall language skills. Many advantages are offered by these apps, including increasing student engagement, boosting their motivation, and giving them the freedom to learn on their own. These apps make learning more fun and effective thanks to their interactive, gamification and immersive features. According to research, students who use this app are more likely to communicate their ideas accurately and fluently, understand reading material better, and respond better in English. Students stay engaged and motivated to practice and improve their vocabulary regularly with the gamification element. In addition, the app provides greater learning autonomy by allowing students to personalize their education and access resources anytime and anywhere.

However, some problems associated with implementing these apps were mentioned in this review. These include varying levels of student interest and motivation, technical issues, and the need to stay connected to the internet. Such apps can be difficult to implement in classrooms, and poor internet connection or technical errors in the app can hinder the learning process. In addition, things like differences in students' prior knowledge and variations in exposure time between different learning approaches can affect how effective these apps are. In addition, this review notes that most research on virtual reality apps for vocabulary learning focuses on desktop-based VR. This suggests that further research should be conducted on mobile-generated head-mounted displays for vocabulary acquisition.

This systematic review provides a thorough analysis of these apps used to improve students' vocabulary. It also points out the potential advantages and problems associated with incorporating these apps into language learning.

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