The Usage of MALL for Vocabulary Acquisition: A Systematic Review (2019–2023)

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Abstract
Vocabulary plays a crucial role in developing strong language skills for English language learners, contributing to their overall educational sustainability. However, engaging students in vocabulary activities can be a persistent challenge. Previous research has suggested that Mobile Assisted Language Learning (MALL) could be an effective approach in English classrooms. However, there is still a lack of recent research that specifically examines the use of MALL for improving vocabulary acquisition. Therefore, this article presents a systematic review of literature focused on the usage of Mobile Assisted Language Learning with a specific emphasis on vocabulary acquisition. The aim of this review is to explore the types of MALL used in teaching English and how it is implemented in English language teaching. The review follows the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines and includes 15 relevant articles obtained from the Scopus, ERIC and Web of Science (WoS) databases. Through careful screening and application of exclusion and inclusion criteria, the selected articles are analysed to shed light on the usage of MALL in ESL classroom for vocabulary acquisition. The findings highlight the types of MALL used in English classrooms and how these approaches were implemented to foster transformative learning.
Keywords: Mobile Assisted Language Learning (MALL), English Classrooms, PRISMA, Systematic Literature Review (SLR).

Introduction
When it comes to second language acquisition, vocabulary knowledge plays a crucial role. According to Gorjian et al (2011), mastering vocabulary is essential for developing proficiency in listening, speaking, reading, and writing skills in a second language (L2). However, the acquisition of vocabulary poses a considerable challenge for students, mainly due to the limited amount of time devoted to L2 instruction in the classroom and the limited opportunities for exposure to the L2 language outside of the classroom. This corresponds with the findings of Sutrisna (2021), who highlighted the inherent difficulties in engaging students in vocabulary activities.

Consequently, educators and learners have been actively seeking effective alter-native approaches to conventional classroom-based courses. Al-Malki (2020) stated that in the era of the Fourth Industrial Revolution, the rise of technology and its educational tools has offered effective and sustainable methods for language learning. The utilization of mobile devices has demonstrated significant efficacy in establishing and arranging educational objectives, as well as customizing pedagogical procedures to cater to the unique requirements of learners (Li & Hafner, 2021). Kukulska-Hulme (2009) has previously noted that the utilization of MALL provides learners with portable and authentic language learning environments that are both social and contextual, thereby facilitating effective language acquisition.

Despite the widespread use of Mobile-Assisted Language Learning (MALL) as a valuable tool in English language classrooms, there is a lack of empirical studies specifically investigating its application for vocabulary acquisition. This gap in the re-search highlights the need for further investigation. Therefore, the objective of this re-view is to analyse and synthesise research articles focusing on the usage of MALL for vocabulary acquisition in English language classrooms. The review will cover the period from 2019 to 2023. The primary aim is to address the following research questions:

RQ1: What are the types of MALL used for vocabulary acquisition?
RQ 2: How is MALL implemented for vocabulary acquisition?

Mobile Assisted Language Learning (MALL)

Mobile Assisted Language Learning (MALL) has gained significant recognition and has emerged as a prominent approach in the field of language learning. This aligns with Gromik (2019) stating Mobile Assisted Language Learning (MALL) has been emphasised to be utilized to facilitate and enhance language learning. MALL involves the use of mobile devices like smartphones, tablets, and laptops to access language learning materials and engage in language learning activities (Wu & Marek, 2018) while offering distinct advantages and opportunities for language learners. These devices enable learners to have flexible and portable access to language learning resources, interactive exercises, and authentic language materials. The convenience and ease of mobility provided by handheld mobile devices make them highly suitable for learning purposes (Govindasamy et al., 2019). Moreover, the ubiquity of mobile devices has made it feasible for learners to engage in language learning anytime and anywhere, transcending the constraints of traditional classroom environments. Akbari and Samad (2020) also added that integrating mobile devices into language learning empowers learners to progress at their own pace and in diverse settings, fostering learner autonomy and motivation.

Mobile Assisted Language Learning (MALL) for Vocabulary Acquisition

The effectiveness of Mobile Assisted Language Learning (MALL) in facilitating vocabulary acquisition has been established (Akbari & Samad, 2020). According to Wu & Marek (2018), the utilization of mobile devices for vocabulary acquisition offers learners a wide range of resources, including flashcards, quizzes, and interactive games, contributing to an immersive and comprehensive learning experience. The interactive nature of mobile devices promotes active engagement and motivation among learners, leading to more effective vocabulary acquisition. The employment of MALL has been found to provide expeditious feedback, thereby enhancing the retention and recall of newly acquired

vocabulary (Gromik, 2019). Engaging in vocabulary learning through tutorial or personalized mobile applications that incorporate word games or flashcard reinforcements has been observed to enhance word retention and stimulate learners' interest in mobile-based vocabulary learning (Agca & Ozdemir, 2013; Sandberg et al., 2014; Wu, 2014; Ono et al., 2015). When learners engage in vocabulary exercises or quizzes on mobile devices, they receive instant feedback on their responses, allowing them to promptly identify and rectify any errors. The provision of reinforcement serves to fortify learners' comprehension of accurate responses and diminishes the probability of future errors. The prompt delivery of feedback also amplifies learners' drive and involvement by imparting a sense of advancement and accomplishment. This, in turn, bolsters learners' self-assurance, thereby fostering a sustained commitment to practice and the acquisition of new vocabulary.

Methodology

A comprehensive examination was conducted on articles that have been published in the last five years, following the guidelines outlined in Preferred Items for Systematic Reviews and Meta-Analyses (PRISMA). PRISMA consists of four stages, namely identification, screening, eligibility, and included. The systematic review process involved the following steps:
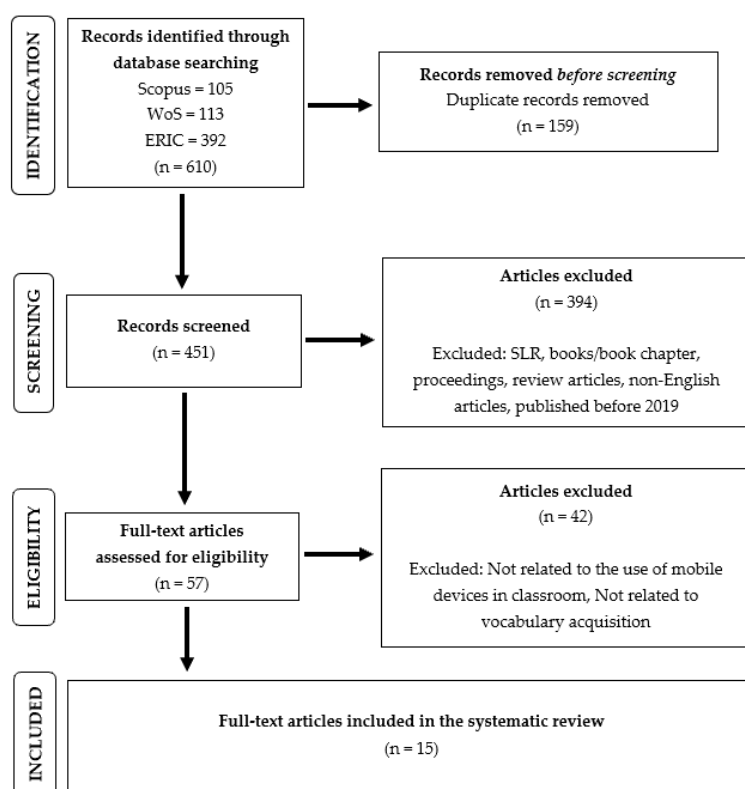

Figure 1. Flow diagram based on PRISMA.

Phase 1: Identification

In this systematic review, the initial step involved searching for articles relevant to the study. Three databases, namely Scopus, Web of Science (WoS), and Educational Resources Information Centre (ERIC), were utilized to fulfil the aim of this study. The articles selected for analysis were limited to those published between 2019 and 2023, encompassing the most recent five-year period. A total of 610 articles were retrieved from these three databases. The

key words employed were carefully chosen and con-structed, focusing on Mobile Assisted Language Learning and vocabulary acquisition. The search strings used in all three databases are presented in Table 1 below.

Table 1
Search string used to search for relevant articles.

Databases	Search String
Scopus	TITLE-ABS-KEY (("mobile assisted language learning" OR "mobile device*" OR "m-learning" OR "mobile app*") AND ("vocabulary acquisition" OR "vocabulary learn*"))
Web of Science (WoS)	TS=(("mobile assisted language learning" OR "mobile device*" OR "m-learning" OR "mobile app*") AND ("vocabulary acquisition" OR "vocabulary learn*"))
ERIC	Mobile Assisted Language Learning and vocabulary acquisition

Phase 2: Screening

After identifying the articles, the screening process commenced. The initial step involved removing duplicate articles from a single database, resulting in the elimination of 159 duplicates. This left 451 articles that proceeded to the next stage. The subsequent screening phase involved assessing the titles, abstracts, and keywords of the articles. As a result, 394 publications were deemed irrelevant to the study's objective and were subsequently excluded. The final step of the exclusion process involved applying inclusion and exclusion criteria to the remaining 15 articles, as depicted in Table 2.

Table 2
Inclusion and exclusion criteria.

Criterion	Inclusion	Exclusion
Type of article	Journal articles	Book, book chapter, proceedings, review articles, reports, SLR
Language	English	Non-English
Year	2019 – 2023	<2019

Phase 3: Eligibility

In this phase, the remaining 57 articles were carefully examined and assessed for eligibility, ensuring that they aligned with the researcher's specific criteria, which included relevance to the usage of mobile devices in classrooms and vocabulary acquisition. As a result, 42 articles were excluded from further analysis during this stage.

Phase 4: Inclusion

The identified articles were related to the usage of MALL for vocabulary acquisition. Among the articles, 9 were obtained from ERIC, 2 from WOS, and 4 from SCOPUS databases. The majority of the research was conducted with university and college students, followed by secondary school and primary school pupils.

Results

In this section, the results of the articles obtained from the previous process will be thoroughly analysed. A total of 15 articles have been selected for review, and the outcomes of these studies are presented in Table 3.

Table 3

Summary of the selected articles.

	Study	Database	Aim	Types of MALL	Samples	Findings
1.	Alhebshi and Gamlo, 2022	ERIC	to investigate how students perceive, experience cognitive load, and are motivated when it comes to learning and acquiring vocabulary.	Mobile games	56 female foundation year students	The results of the study indicated that the experimental group achieved better results in the post-test compared to the control group. It is important to note that even though the control group used traditional teaching methods for vocabulary practice, they expressed a strong interest in using digital gaming for vocabulary learning, similar to the experimental group. Moreover, the experimental group expressed their approval of this strategy as an effective method for making vocabulary learning easier, retaining information, and reducing cognitive load.
2.	Aprilani and Suryaman, 2021	ERIC	to examine how students perceive and experience the use of Quizlet as a tool for learning English vocabulary	Quizlet	five students from senior high school	The findings indicated that Quizlet is an effective and engaging tool for learning vocabulary in English, as it generated a high level of interest and enthusiasm among students.
3.	Arumugam & Md Noor, 2021	ERIC	to create a mobile app called JuJu English Vocabulary, based on the Keller Plan Personalized system of instruction (PSI) theory, to enhance learners'	Mobile app based on Juju English Vocabulary	60 students	The results revealed a substantial disparity between the experimental group (using the mobile app) and the control group (using traditional learning methods) in the post-test. The design of this mobile app facilitated individualized progress among the

			vocabulary acquisition.			experimental group in terms of vocabulary acquisition. The app's game-like approach successfully increased their interest and enjoyment in the learning process.
4.	Govindasamy et al., 2019	SCOPUS	to examine the effectiveness of using mobile phones for searching vocabulary meanings in comparison to the traditional method of using a printed dictionary	Mobile phone	50 form 5 arts stream pupils	The results of the experimental study clearly indicate that using mobile phones enhances students' understanding and depth of vocabulary meanings compared to using printed dictionaries. This is primarily due to the availability of visual representations, such as images, and the ability to listen to and view word pronunciations through audio or video formats. The use of mobile phones, combined with internet access, resulted in improved scores among students, and the search for vocabulary meanings was faster compared to using printed dictionaries.
5.	Huei et al., 2021	ERIC	to use Quizizz as a tool to improve vocabulary attainment among primary English as Second Language (ESL) students in rural schools	Quizizz	13 rural school pupils	The study reveals that out of the 13 participants, 10 demonstrated an improvement in their scores on the post-test, specifically in the filling in the blank section. This data is reinforced by a relatively high average score on a Likert scale questionnaire. Additionally, the participants emphasized that Quizizz's leaderboard feature aligned with their preferred learning style, thereby

					fostering a positive learning environment.
6.	Jalaluddin et al., 2021	ERIC	to investigate the progress of LINUS students or Low Achiever (LA) students in learning English vocabulary using Mobile Augmented Visual Reality (MAVR)	AVR-game based app	45 primary school students	The analysis revealed a significant improvement in scores, and there were notable differences between the levels of the factor being studied. This suggests that MAVR materials, when used as an interactive tool, can effectively support language learning for LA learners.
7.	Jiang and Liou, 2022	ERIC	to investigate the design of Mobile-Assisted Language Learning (MALL) to support students in acquiring academic words and collocations for their English writing, using in-class writing activities and pair-work both inside and outside the classroom	Quizlet	26 first-year English major students	The results demonstrate that the MALL project was effective in helping participants remember a greater number of words after their MALL experiences and apply them in their writing. Furthermore, this improvement was sustained over time. The participants showed a stronger preference for pair work over individual work, indicating a favourable attitude towards collaborative learning.

8.	Katemba, 2021	ERIC	t to determine the benefits of using Mobile-Assisted Language Learning (MALL) in vocabulary instruction	short messages system (SMS)	79 grade 8 students	The study's findings demonstrated that students in the experimental group outperformed those in the control group. This indicates that technology, specifically MALL, has a noteworthy impact on vocabulary learning in educational settings.
9.	Kohnke, 2020	SCOPUS	to examine how students perceived a vocabulary learning app created by the researcher, which aimed to enhance their receptive vocabulary in their second language (L2)	vocabulary learning app	14 undergraduate students studying at an English-medium university in Hong Kong	The findings indicated that students in Hong Kong exhibited a high level of motivation to acquire an L2 vocabulary. Additionally, participants expressed a preference for mobile applications that incorporated gamified features.
10	Pham, 2022	WoS	to investigate students' perspectives on the use of Quizlet for vocabulary learning.	Quizlet	148 students	The results indicated that students occasionally utilized Quizlet for their vocabulary studies, spending an average of approximately 2 hours per week on the platform. Moreover, the overall satisfaction level was relatively positive. Among the features, the Test feature was highly noticeable and well-received, as it effectively facilitated vocabulary review. Many students favored Quizlet due to its convenience and effectiveness. However, some students expressed

					dissatisfaction with features like Match, as well as occasional spelling and definition errors, and unnatural pronunciation. Overall, the findings suggest that students consider Quizlet a valuable tool for enhancing their vocabulary proficiency.
11	Polakova and Klimova, 2022	WoS	to investigate the usage and effectiveness of a vocabulary mobile learning application in blended English learning	mobile application called *Angličtina Today*	36 Slovak EFL students aged from 17 to 18 years old	The findings indicated that students who experienced blended learning, which incorporated the mobile application for language learning, achieved superior outcomes compared to students who received traditional face-to-face education. Furthermore, the results revealed that students expressed overall satisfaction with the application. The primary reasons for their satisfaction included improved vocabulary knowledge, user-friendliness, and increased motivation.
12	Tahounehchi, 2021	SCOPUS	to examine the impact of using the WhatsApp application on the vocabulary learning of Iranian English as a Foreign Language (EFL) learners	WhatsApp	26 female EFL learners at pre-intermediate level of proficiency	The findings demonstrated that the experimental group, which utilized WhatsApp for improving their vocabulary skills, performed better than the control group. Moreover, it was observed that the learners who employed WhatsApp for vocabulary enhancement displayed a more favourable attitude towards learning foreign language vocabulary compared to the other group.

| 13 | Wijaya et al., 2019 | SCOPUS | to assess the effectiveness of using an android-based mobile learning approach for vocabulary acquisition among seventh-grade students at SMP Batara Gowa | android-based mobile learning | seventh-grade students of SMP Batara Gowa | The results indicated that mobile learning was effective in teaching English vocabulary to these students during the 2018/2019 academic year, as evidenced by the pre-test and post-test scores. The post-test scores were higher than the pre-test scores, suggesting improvement in vocabulary knowledge. In the pre-test, the seventh-grade students at SMP Batara Gowa were categorized as "very poor," while in the post-test, they were categorized as "fair." This suggests that the use of mobile learning in English vocabulary instruction can support student learning and enhance learning outcomes. |
| 14 | Xodabande and Boroughani, 2023 | ERIC | to explore the use of mobile-assisted FonFs (Focused-on-Form Noticing Sequences) in the context of English for Academic Purposes (EAP) to cater to the vocabulary learning requirements of Iranian English as a Foreign Language (EFL) students | mobile-assisted FonFs | 37 adult EFL learners in a private language teaching institute in Iran | The results revealed that mobile-assisted FonFs had a positive impact on both receptive and productive vocabulary learning. Moreover, the experimental group performed better than the control group in the post-tests. |

| 15 | Xodabande and Hashemi, 2022 | ERIC | to investigate the effectiveness of using mobile applications designed as electronic textbooks for vocabulary learning in English among Iranian university students | electronic textbooks designed as mobile applications | 95 (36 males and 59 females) first-year Iranian university students | The results indicated a significant improvement in vocabulary knowledge for both groups from the pre-test to the post-test. Additionally, using electronic textbooks on mobile devices had a significant positive impact, as the experimental group outperformed the control group in the post-test and delayed post-test. The qualitative findings revealed three perceived benefits of using electronic textbooks: episodic learning, easy access to materials, and increased enjoyment, all of which contributed to enhanced vocabulary learning through mobile-assisted methods. |

This systematic review was conducted by analysing the articles in a thematic manner, aiming to address the following research questions

RQ1: What are the types of MALL used for vocabulary acquisition?

RQ 2: How is MALL implemented for vocabulary acquisition?

To answer the first research question, the articles were classified based on the types of MALL used for vocabulary acquisition. Regarding the second research question, the articles were categorized according to the implementation of MALL for vocabulary acquisition. The findings from these research articles are comprehensively discussed in the next section.

RQ 1: What are the types of MALL used for vocabulary acquisition?

In this review, the types of MALL used for vocabulary acquisition were grouped into (1) Mobile games, (2) Quizlet, (3) Mobile apps, (4) Mobile devices, (5) Quizizz and (6) Whatsapp. The findings are presented as below.

Table 4

Types of MALL used for vocabulary acquisition.

Types of MALL	Articles
Mobile games	(Alhebshi & Gamlo, 2022)
Quizlet	(Aprilani & Suryaman, 2021; Jiang & Liou, 2022; Pham, 2022)
Mobile apps	(Arumugam & Md Noor, 2021; Jalaluddin et al., 2021; Kohnke, 2020; Polakova & Klimova, 2022; Xodabande and Hashemi, 2022)
Mobile devices	(Govindasamy et al., 2019; Katemba, 2021; Wijaya et al., 2019; Xodabande & Boroughani, 2023)
Quizizz	(Huei et al., 2021)
Whatsapp	(Tahounehchi, 2021)

According to the findings presented in Table 4, a total of 5 research articles indicate that mobile applications are the most preferred form of MALL used for vocabulary acquisition (Arumugam & Noor, 2021; Jalaluddin, 2021; Kohnke 2020; Polakova & Klimova, 2022; Xodabande & Hashemi, 2022). The second most favoured type of MALL is the use of mobile devices themselves. This is supported by the findings of Xodabande and Hashemi (2022) which demonstrated that employing mobile devices as a means of delivering target vocabulary items was effective in both short-term and long-term contexts. Research conducted by Aprilani and Suryaman (2021) indicated that Quizlet is an effective and engaging tool for vocabulary learning, as it increased students' enthusiasm for learning English vocabulary. However, another study conducted by Pham (2022) revealed that some participants expressed dissatisfaction with certain features of Quizlet. Nevertheless, Quizlet remained a preferred choice for their learning process, as they consistently dedicated a significant amount of time to using it. t's important to mention that even though some users might have concerns about specific parts of Quizlet, there is no doubt about the platform's general success in aiding learning. These results highlight the significance of ongoing endeavors to enhance and polish Quizlet's features, making certain it stays a valuable resource for those who are learning.

In contrast, the study conducted by Alhebshi and Gamlo (2022) demonstrated the efficacy of mobile game-based learning as a means of enhancing vocabulary acquisition. The findings of this study suggest that incorporating mobile game-based learning into vocabulary lessons can be a valuable strategy for promoting student engagement and motivation. It was recommended that educators adopt this approach in their pedagogical practices, as students perceive it as an engaging and interactive tool that fosters enthusiasm, particularly through peer interaction.

In a study carried out by Huei et al (2021) at rural schools revealed that the implementation of Quizizz was well-received by the participants. It was observed that the Quizizz leaderboard was particularly effective in catering to the preferred learning style of the students. This finding highlights the potential of Quizizz as a valuable tool for enhancing the learning experience of students in rural schools. The study's results suggest that Quizizz can be utilized as an effective means of promoting engagement and motivation among students, thereby contributing to the overall improvement of academic performance.

WhatsApp is observed to be one of the less commonly used in MALL tool for vocabulary acquisition, potentially due to its informal language usage. The platform is primarily used for

casual and conversational engagements, resulting in the prevalence of slang, abbreviations, and emojis. Consequently, learners are often exposed to colloquial terms rather than encountering a diverse range of vocabulary. However, the findings of the study conducted by Tahounehchi (2021) demonstrated that WhatsApp did not only effectively influences the vocabulary acquisition process but also gradually fosters positive changes in learners' attitudes. This can be attributed to the learners' familiarity with and regular use of these devices in their social lives.

RQ 2: How is MALL implemented for vocabulary acquisition?
In addressing the second research question, the researchers examined the implementation of MALL in English language teaching. The articles were categorized based on their respective approaches to implementing MALL, and these categories are presented in Table 5.

Table 5
Implementation of MALL for vocabulary acquisition

Implementation	Articles
Intervention	(Polakova & Klimova, 2022)
Comparison	(Alhebshi & Gamlo, 2022; Arumugam & Md Noor, 2021; Govindasamy et al., 2019; Huei et al., 2021; Katemba, 2021; Tahounehchi, 2021; Wijaya et al., 2019; Xodabande & Boroughani, 2023; Xodabande & Hashemi, 2022)
Combination	(Jiang & Liou, 2022)
Experimentation	(Jalaluddin et al., 2021)
Not specified (perceptions, motivations)	(Aprilani & Suryaman, 2021; Kohnke, 2020; Pham, 2022)

Based on the information presented in Table 5, it is clear that most of the MALL implementations for vocabulary acquisition in the identified articles involve a comparison. A total of 9 articles examines the implementation of MALL tools for vocabulary acquisition and compare them with the traditional approach (Alhebshi & Gamlo, 2022; Arumugam & Md Noor, 2021; Govindasamy et al., 2019; Huei et al., 2021; Katemba, 2021; Tahounehchi, 2021; Wijaya, 2019; Xodabande & Boroughani, 2023; Xodabande & Hashemi, 2022). The use of comparison as the main purpose for MALL implementation is highly favoured due to its ease in evaluating the efficacy of the implemented MALL tool.

In a study which was done by Xodabande and Hashemi (2022), participants in the control group were provided with printed textbooks, while the experimental group utilized the corresponding mobile application version of the book, which could be accessed through Google Play or iPhone App stores. This demonstrates the adoption of a mobile approach as a substitute for the traditional approach. A similar study was conducted by Xodabande and Boroughani (2023), where participants in the experimental group were provided with pre-made digital flashcards organized into 16 sets within a flashcard app. The app included a spaced repetition system designed to enhance vocabulary learning in a more effective and long-term manner. In contrast, participants in the control group received 16 paper-based word lists containing the same information as the digital flashcards. Thus, both groups were exposed to the same content, but the learning environment differed for the experimental and control groups. All these implementations demonstrate the comparison a mobile approach

to a traditional approach (Alhebshi & Gamlo, 2022; Arumugam & Md Noor, 2021; Govindasamy et al., 2019; Huei et al., 2021; Katemba, 2021; Tahounehchi, 2021; Wijaya, 2019; Xodabande & Boroughani, 2023; Xodabande & Hashemi, 2022).

In another study conducted by Polakova & Klimova (2022), a mobile application intervention was implemented to reinforce the acquisition of new vocabulary introduced in a traditional classroom setting. The newly acquired vocabulary was then applied in various activities, such as role-plays, discussions, or debates on relevant topics, within the traditional school environment. As a result of the mobile application treatment, participants' vocabulary knowledge improved, and their retention of vocabulary was enhanced. This highlights the practicality of learning vocabulary through mobile applications, which was found to be more effective compared to using textbooks for the same purpose.

The utilisation of MALL for experimental purposes was also observed in a study conducted by Jalaluddin et al. (2021). The study implemented technology, specifically augmented reality and virtual reality, as a tool for a period of six months to evaluate the impact of Mobile Augmented Visual Reality (MAVR) on the development of English vocabulary among 45 participants from the LINUS program.

The prevalence of MALL implementations for comparison is certainly can be seen being justified by its straightforwardness in evaluating the effectiveness of the MALL tool used. However, other implementation purposes also offer valuable insights into the effectiveness of the usage of MALL for vocabulary acquisition and highlight the positive outcomes observed among the participants.

Discussion

The findings from the 15 articles that has been analysed indicate that among various Mobile-Assisted Language Learning (MALL) tools, mobile applications have been the most preferred for vocabulary acquisition and the majority of MALL implementations for vocabulary acquisition discussed in the identified articles involve conducting comparisons. Furthermore, the studies revealed that learners who utilized MALL tools in their learning demonstrated significant improvements in vocabulary acquisition.

All participants in the experimental group (Alhebshi & Gamlo, 2022; Arumugam & Md Noor, 2021; Govindasamy et al., 2019; Huei et al., 2021; Katemba, 2021; Tahounehchi, 2021; Wijaya, 2019; Xodabande & Boroughani, 2023; Xodabande & Hashemi, 2022) demonstrated positive outcomes in post-tests following the implementation of MALL tools in their learning. This underscores the significant impact of MALL on vocabulary learning in educational settings, as mentioned by (Katemba, 2021). Additionally, the study conducted by Alhebshi and Gamlo (2022) found that students in the control group also expressed a strong interest in using mobile games for vocabulary learning, while the experimental group approved of this strategy as an effective method for facilitating the vocabulary learning process. This sentiment was also shared by participants in the study done by Arumugam and Noor (2021), where the game-like approach using a mobile app successfully increased their interest and enjoyment in the learning process.

The findings from the articles indicate that MALL tools can serve as both interventions or replacements, as well as complementary tools, working in tandem with traditional instruction to create a more comprehensive and engaging learning experience, with teachers acting as role models for their students in the language learning process (Polakova & Klimova, 2022).

Previous studies (Alhebshi & Gamlo, 2022; Arumugam & Noor, 2021) have provided evidence that using mobile games for vocabulary learning can be an effective approach, leading to increased enjoyment and enthusiasm among learners. These findings suggest that incorporating game-like elements into the learning process can enhance student engagement and create a more interactive and enjoyable learning experience. However, it is important to note that not all studies have found the same level of motivation from the gaming aspect. A separate study by Sandberg et al (2014) has suggested that the gaming aspect alone may not necessarily lead to increased motivation for learners to dedicate more time to the learning material. This discrepancy highlights the need for further research to explore the complex relationship between gaming elements, motivation, and time spent on learning activities to gain a deeper understanding of their impact on vocabulary acquisition.

Despite the effectiveness of MALL for vocabulary acquisition, it is crucial to recognize and address its limitations. One notable concern is the dependence of certain MALL tools on internet connectivity, which can present difficulties for learners who do not have access to the internet outside of the classroom or in regions with limited connectivity (Agca & Ozdemir, 2013). This limitation regarding material accessibility can impede the optimal use of certain MALL tools. In the future, it is desirable for educators and researchers to explore alternative solutions or develop MALL tools that can accommodate learners who face challenges with internet connectivity, ensuring that all learners have equal opportunities to benefit from MALL for their vocabulary improvement. The systematic review offers valuable insights into the types and implementation of MALL tools for vocabulary acquisition in English language classrooms, but further research with a longer duration is needed to comprehensively examine its usage and effectiveness across various English language skills.

Conclusions

This systematic review highlights the widespread utilization of Mobile-Assisted Language Learning (MALL) in English language classrooms. After applying inclusion and exclusion criteria, a total of 15 articles from SCOPUS, Web of Science (WoS), and ERIC were included in this review. The main findings indicate the effective use of MALL for vocabulary acquisition in English language classrooms. The utilization of MALL has demonstrated its efficacy in enhancing learners' vocabulary. In essence, the incorporation of mobile devices in language learning has been found to facilitate the acquisition of new words by students. However, further research is required to acquire more profound comprehension of the utilization of MALL and its optimal implementation in English language classrooms.

Challenges and Limitations

The limitation of this study is the examination and analysis of articles were limited to SCOPUS, WoS, and ERIC databases. This is based on the predetermined criteria aligned with the study's objectives. Conducting more comprehensive research that includes diverse sources and perspectives would better strengthen the findings and provide a more robust support for the study.

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