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# Determining the Effectiveness of Selected Mobile-Assisted Learning Apps in Strengthening Vocabulary Learning Strategies among ESL Students in Malaysia

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## Abstract

*One of the challenges of learning a new language is becoming fluent in it. Therefore, individuals who are just starting to learn a new language are encouraged to concentrate on learning vocabulary since it is seen as an integral aspect of language acquisition and a means of facilitating learning. With the recent introduction of crucial components such as mobile devices and applications, this revolution has revolutionised the development of teaching and learning, from basic textbooks to complex multimedia platforms and applications. Therefore, this article explores and determines the effectiveness of selected mobile-assisted learning (MAL) applications in enhancing vocabulary learning strategies (VLS) for ESL students in a classroom. A qualitative data collection with a semi-structured interview has been implemented to obtain data. For this study, eight participants were interviewed to gather more detailed responses. The analysis of the semi-structured interview was based on thematic analysis. The findings indicate that mobile-assisted learning applications play an increasingly vital role in assisting ESL students to develop their vocabulary skills to cope with real-world situations.*

***Keywords:*** *language learning, mobile-assisted learning (MAL), vocabulary learning strategies (VLS).*

## Introduction

As technology advances and mobile devices become increasingly ubiquitous, schools are using more computers, smartphones, and tablets. Mobile gadgets have eased learning and encouraged worldwide relationships in the 21st century. Information and communication technology (ICT) may generate different learning environments, enabling virtual or online learning without in-person interactions in modern educational institutions. Mobile learning allows students to easily access educational information using tablets, smartphones, and laptops by means of instructional software or apps. E-learning gives students quick access to instructional information, but ICT lets them study anytime, anywhere (Muthuprasad et al., 2021).

Technology allows students to receive and share materials with professors across time and space. Technology has gone from a complement to a cornerstone of mobile learning (Mohammadi et al., 2020; Tay et al., 2021). Sophonhiranrak (2021) claims students use

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mobile devices to research. Google and Internet Explorer enable users to obtain important information and share it on Facebook, Instagram, and WhatsApp. Hasan and Islam (2020) believe that these popular mobile gadgets with appealing features might help language learners. Connectivity highlights computer-assisted language learning (CALL) and mobile-assisted language learning (MAL). The latter uses mobile phones or tablets for distance learning and e-learning. Mobile-assisted learning is improving digitally native students' abilities and accessibility, cementing their importance in education.

Despite its many benefits, little is known about how MAL helps ESL students learn vocabulary. ESL students struggle to learn and remember new terminology, according to Mohammad Sharifi and Heidari-Shahreza (2021). Deficient vocabulary limits their speaking, reading, writing, and understanding of foreign topics. Language learners need indirect learning techniques to grasp receptive and productive vocabulary. This research examines ESL students in English-taught geography and history. Such students and subject instructors in English-medium classrooms encounter particular obstacles. Students with limited language skills struggle in these areas because they focus on topic understanding rather than language teaching. This background makes studying these things harder.

The pandemic in 2020–2022 saw extensive usage of Zoom and WhatsApp for online education. Due to in-person constraints, these channels were the main way professors and students communicated. Such students rely significantly on these applications for their history and geography homework. WhatsApp and their chosen search engines were used for peer and teacher engagement and learning activities. ESL students completed their learning activities through mobile-assisted learning (MAL). Thus, MAL must be tested in an English-medium setting to improve vocabulary learning.

## Previous Studies

The Use of Mobile Phones in Education

Mobile phones changed all communication between 1973 and 1993, becoming an essential part of human existence. This innovative technology lets people globally interact quickly and effectively. Thus, integrating mobile devices into education was necessary to maximise their potential in the classroom. Imagine that teachers need help with kids. Mobile social networking applications allow students to communicate in such scenarios. Mobile Assisted Learning (MAL) encourages self-directed learning rather than teacher-centeredness. This is important because students, not mobile gadgets, are the main contributors to successful education.

English has been widely used as the medium of instruction (EMI) in numerous academic institutions, particularly in countries where English is not the primary language. According to Shicmauchi (2018), globalisation drives EMI adoption in these nations' education. The goal is to enhance educational programmes and attract international students. Villegas (2018) stated that English language learners are commonly put in mainstream classrooms with more skilled classmates. This allows trained educators who use content-language integrated learning to focus on teaching subject matter and related terminology and vocabulary in history, geography, biology, chemistry, and others rather than adapting the content to students' language needs. Consequently, students who possess inadequate language skills may encounter difficulties comprehending objective information, limiting their capacity to fulfil graded tasks and respond to examination questions.

Thus, using mobile devices to study English vocabulary might improve language competency in many nations. Google Play and iTunes provide several mobile apps to help students understand English phrases in and out of context (Wu, 2015).

Vocabulary Learning Strategies

According to Kussin et al. (2018), students use several ways to improve their communication abilities while studying vocabulary. This involves learning new terms independently and actively engaging in school. Vocabulary Learning Strategies (VLS) examines how ESL students acquire new words and the activities they use to master them. Students who know are familiar with the vocabulary learning strategies are more likely to acquire a new language more easily, according to O'Malley and Chamot (1990). According to Jaekel (2020), they may also use distinct learning methodologies. VLS supporters say it may help language learners by improving their grasp of the process and giving them indirect methods. Teachers and students value vocabulary learning for several reasons. Khan et al. (2018) observed that vocabulary increases benefit both spoken and written languages.

Haspelmath (2020) states that words are essential linguistic units that help people understand phrases, paragraphs, and texts. Thus, a strong vocabulary is essential for mastering a new language. Afzal (2019) found that English-language learners appreciate the relevance of vocabulary to academic and social success. ESL and EFL students struggle with new vocabulary. Rahmat and Mohandas (2020) say these kids need more than phrase knowledge. It's crucial to understand language grammar and context. English as a Second Language (ESL) students often make terminology blunders despite their relevance.

Thus, ESL learners' vocabulary-learning tactics must be understood to overcome their obstacles. The efficiency of diverse media types in aiding people is also essential. Afzal (2019), Alahmadi and Foltz (2020), Ghalebi et al. (2020), and Ting and Tan (2021) all agree that ESL/EFL students need efficient vocabulary acquisition strategies. According to Cojocnean (2016), young people are more interested in learning languages in a personal setting like online gaming. Engaging students using games has been demonstrated. Deris and Shukor (2019) found that games are the most popular feature of vocabulary-learning mobile apps. Applications have substantially increased computer games' advantages, notably in improving learning outcomes, motivation, engagement, anxiety, and learner autonomy.

Several studies revealed no improvement in performance or motivation. The bulk of vocabulary-building smartphone applications contain word lists with explanations and examples. This feature is utilised by most students. Young children acquire language better when they grasp terms in context. Audio recordings may help students enunciate new words and phrases. Words have several meanings based on circumstance. This unpredictability makes vocabulary acquisition difficult. Many students struggle to utilise English vocabulary, particularly when identifying terms with similar sounds or dictionary meanings.

Students in China and other countries learn English by memorising phrases and meanings. Wang and Yang (2020) claim that language learners prioritise conceptual meaning above collocation, connotation, and synonyms. Students should learn vocabulary to improve their language skills. Schmitt (2000) and Nie et al. (2022) propose that language learners actively or passively enhance their vocabulary. Meganathan et al. (2019) cited Hulstijn et al.'s (2001) notion of purposeful and unintended learning. The definitions are in Table 1.

Table 1 Modes of Learning Vocabulary

| Types of learning | Explanation |
|---|---|
| Intentional Vocabulary Learning | A learning process that occurs in a structured and planned environment. |
| Incidental Vocabulary Learning | A learning process occurs when an individual learns without the intent to learn. |

The research on language awareness is fascinating and may affect our word learning. By being aware, students may choose their learning techniques. Deris and Shukor (2018) found that students prefer audio-visual vocabulary learning, particularly with mobile apps. The media's auditory pronunciation helps students learn words. Students may also learn words using pictures. Even after explanation, students may misunderstand a term. Illustrations help people understand and remember information. Nontasee and Sukying (2021) reference Richards (1976) as saying that L2 vocabulary learning works best when learners follow these guidelines:

- Native speakers' vocabulary knowledge is a lifetime process.
- Learning a new word may be seen being utilised in both spoken and written forms.
- Learning a new word requires understanding the word that is employed in various contexts.
- Learning a new word requires learning its syntactic features.
- Learning a new word requires comprehending the word form as well as additional derivable forms.
- Learning a new word requires understanding that this term is related to other terms in the same language.
- Learning a new word requires learning its semantic features.
- Learning a new word requires learning the many meanings associated with the word.

There are several characteristics that may be used to define a person's vocabulary skills. Humans have numerous similarities, including our perspectives on knowledge and language skills (Carter, 1998). Vocabulary knowledge indicates that the user is capable of:

- Using words effectively and recalling them.
- High possibilities of meeting the words in its verbal or written forms.
- Learning the words from a syntactic angle, related forms and derivations.
- Associating with other words in the target language and its first language (L1) equivalent.
- Distinguishing the word’s associated core and their use and functions in pragmatic and discoursal purposes.
- Learning various meanings linked to the words, their connection, and collocational patterns.
- Memorizing the words for repetition or adaptation purposes when necessary.

Drill and practise techniques can greatly benefit students, particularly those who are learning English as a second language (ESL), by helping them better comprehend and retain new vocabulary words. However, certain aspects of learning are more effective when appropriate methods are employed. This is because using the right methods helps students recall words they have already learned and enables them to utilise their vocabulary when they encounter new situations or prompts.

Roles of Cognitive and Metacognitive abilities in Selection of Suitable Learning Strategies

Cognitive strategies refer to the brain's ability to analyse newly acquired knowledge in a way that allows for the information to be obtained, stored, retrieved, or used effectively. According to Sua (2021), students who are able to effectively employ these tactics have the potential to derive meaning from texts. The theory suggests that readers use their prior knowledge and the texts they read to construct meaning. In order to engage readers and encourage them to make predictions and theories, it is important to use clues that connect

new information with what is already known. Metacognition occurs when students are capable of taking cognitive control and managing their own learning process. According to Anderson (2002), readers can use metacognitive awareness to help them decide what to do next. When learners are aware that they are acquiring new words, they become not only linguistically aware but also cognitively, socially, and culturally conscious of the entire process.

Previous studies on Vocabulary Learning Strategies and Language Learning

Vocabulary learning strategies (VLS) enhance the proficiency of language learners in their target language. In their study, Alqudah and Azmi (2019) emphasise the importance of teaching a variety of VLS forms in order to enhance language productivity and reception. Additionally, it was believed that having knowledge of VLS (visual language systems) would be beneficial for language learners. As a result, secondary school students studying English as a Second Language (ESL) are required to study subjects in English in order to effectively engage with the subject matter and assignments. The researcher assesses empirical data to identify the advantages and disadvantages of using VSL in language acquisition.

In the study conducted by Fan (2020), the focus was on investigating whether Chinese learners of English as a foreign language (EFL) utilised Vocabulary Learning Strategies (VLS) as a means to enhance their vocabulary skills. The study conducted a quantitative analysis to determine the frequency at which individuals utilised various techniques during vocabulary and word association tests. The choice of method was influenced by factors such as gender, discipline, EFL setting, and language competence. In their study, Hadi and Guo (2020) investigated the relationship between the attitudes and method choices of 177 Afghan university students studying English as a Foreign Language (EFL) and how these factors influenced their use of virtual learning systems (VLS). The quantitative study gathered data from individuals who engaged in discussions about language acquisition, metacognitive control, and various cognitive and emotional strategies. Based on the findings, the respondents indicated a preference for contextual signals rather than memorising word definitions. Reading provides numerous opportunities to encounter newly learned vocabulary, which greatly aids in the process of acquiring new words (Nagy, Herman, and Anderson, 1985). Flashcards remove language from its original context, while mobile-aided learning (MAL) provides a context for language learning. Research has shown that teaching children how to use mobile apps can improve their communication and language skills.

Mobile Assisted Learning (MAL)

The development of technology has revolutionised the way people learn languages. Nowadays, individuals are utilising smartphone apps to conveniently access their social networks and improve their self-directed learning. The learner, rather than the instructor, is the focal point of learning. The field of language learning is constantly evolving. According to a study conducted by Kim et al. in 2019, it is crucial for educators to equip children with 21st century skills (referred to as 21SC) in order to thrive in the global market and adequately prepare them for life after high school.

The concept of "mobile-assisted language learning" (MALL) was developed with the aim of engaging digital native learners and enhancing their language and communication abilities (Kim et al., 2017). According to the authors, MALL instructors face challenges in creating engaging activities that effectively facilitate student learning through technology. If instructors do not have the necessary skills to create mobile learning materials, it is important to conduct further research to determine the best methods for integrating mobile-assisted language learning (MALL) into teaching and learning. Pachler et al. (2009) outlined the early development of mobile learning in three distinct phases. In the mid-1990s, the first phase focused on device usage. The early 2000s phase focused on building

a learning environment outside the classroom, whereas the late 2000s phase focused on learners' mobility.

According to Traxler (2005), mobile learning refers to the use of handheld or palmtop devices that enable individuals to participate in academic activities while on the move. According to Castillo and Ayala (2012), mobile learning provides users with convenient access to information and knowledge via their phones or tablets. Hussin (2015) defines mobile learning as a form of learning that utilises mobile devices and mobile apps within a mobile learning environment. The previous concept placed a higher priority on technology than learning. Hence, the latter concept is superior as it prioritises academic advancement through the use of technology. According to Becker et al. (2017), higher education institutions have integrated MALL into their existing L2 instruction due to its accessibility. Scholars have shown significant interest in MALL, a sub-branch of Computer-Assisted Language Learning (CALL). There are several notable research papers that are worth mentioning, such as Hazaea and Alzubi (2016), Alzieni (2020), Hasan and Islam (2020), and Zain and Bowles (2021).

The researchers have come to the consensus that mobile-assisted language learning (MALL) is being used more frequently in academic settings. Demir and Akpinar (2018) conducted a study that showed how the use of technology as a substitute for traditional classroom settings can effectively increase students' motivation to study. According to Arvanitis and Krystalli (2021), Burston (2013) considered MALL to be a valuable tool that empowered students to efficiently organise and manage their learning without being restricted by time constraints. Students become less dependent on instructors for guidance. Educators who have a good understanding of Mobile-Assisted Language Learning (MALL) concepts can also apply Mobile-Assisted Learning (MAL) principles. Mobile-Assisted Learning (MAL) is currently experiencing a growth rate that is comparable to that of Mobile-Assisted Language Learning (MALL). MAL is being used to improve students' learning in a variety of subjects taught in English, such as history, geography, mathematics, physics, and others. (Rao, 2019; Arvanitis & Krystalli, 2021).

MAL has the potential to motivate students by utilising familiar technologies like smartphones, iPads, and tablets. It can also enhance their productivity and improve their language and communication skills. Additionally, MAL encourages the use of English and empowers students to select supplementary activities that align with their interests and current situation. But before making a decision, it is important for students, teachers, or instructors to consider several key aspects when choosing a mobile app. These aspects include the organisation of information within the app and on the screen, the way data is presented and colour-coded, the use of hierarchical menus and screen navigation, and the design of icons, labels, and symbols (Mehrban & Asif, 2010). The teacher components of MAL should prioritise being learner-centred, user-friendly, and sufficiently motivating. This will encourage students to continue using the approach as part of their daily learning. Figure 1 illustrates the concept of 'mobility' in relation to mobile assisted learning.

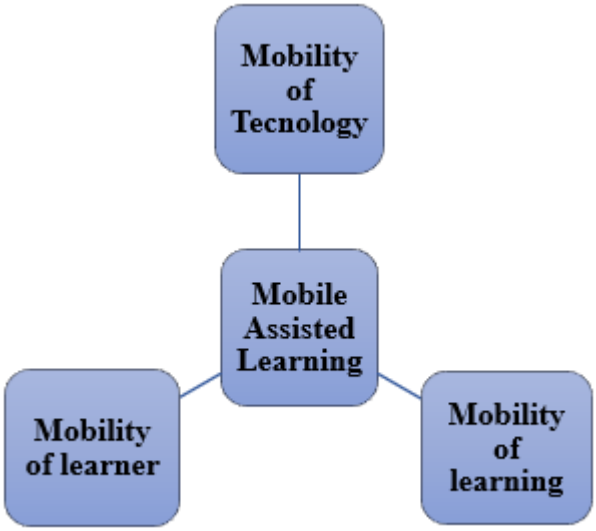


Figure 1 ‘mobility’ of mobile learning

Types of popular Mobile Assisted Learning (MAL) applications

This study examines educational apps that may boost students' English vocabulary and enhance their real-world communication. This study examined WhatsApp and Zoom for communication and information sharing among classmates, peers, and teachers, as well as SmartGeo, Geography Quiz, Geography Dictionary, History UK, and World History Quiz. Smartphone apps (hereinafter "apps") are often created with learning in mind, particularly when using the device for learning is preferred (Wardak, 2021).

Thus, many educational apps are available on the Google Play and Apple App Stores. Many popular history and geography learning apps are now free. SmartGeo (Chatel & Falk, 2017), which teaches geography to German high school students, allows any search engine. These apps enable learners to organise their activities and replay lectures and notes to help them understand the topic at any time. Importantly, MAL mirrored Zhang et al. (2011), as reported by Wardak (2021), who projected that mobile phones will help students learn language faster and better than paper.

Applications with audio may also help with vocabulary development. However, Rusnani binti Ab Latif (2020) stated "WhatsApp's" ubiquity in higher education has made students more open to conversations and knowledge exchange with classmates and teachers. WhatsApp, a free programme on every smartphone, has become a new way to improve education and student learning. Another popular "web-based collaborative video conferencing tool" is the "Zoom App," which enables participants to share their displays and chat in real time. Zoom, known for its high-quality audio, lets educators customise its interactive aspects to make learning fun and memorable. The interactive whiteboard and breakout rooms for small-group discussions during lectures and seminars are the most popular. Zoom allows professors and students to engage in groups, and the chat component may give immediate feedback following assignments, according to Serhan (2020). Zoom sessions may be recorded and downloaded, unlike WhatsApp. In early 2020, most schools and institutions favoured online learning to prevent physical contact during the COVID-19 epidemic. The preferred medium was zoom. After the pandemic forced online schooling, many instructors and students adopted mobile learning and web applications to continue teaching and learning. It's challenging to use Zoom as a virtual classroom since it requires a decent internet connection. Instructors also struggle to monitor student attendance and activity. Figure 2 displays COVID-19's global and educational impact.

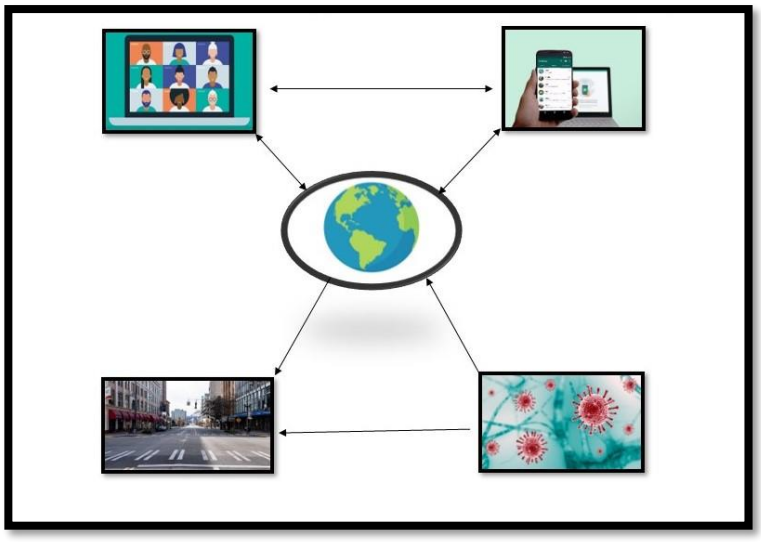

Figure 2 Covid-19 affecting the world and educational system

Previous studies on Mobile Assisted Learning Applications (MAL)

Several research have indicated that mobile learning apps (MAL) may help foreign language recall. Learning a foreign language enhances cognitive function, spirit, anxiety, self-confidence, social relationships, and self-realization (Klimova, 2020).

Mobile Assisted Learning (MAL) has attracted academics from several domains. Interestingly, medical students in medicine, nursing, and pharmacy use MAL to access the internet on their phones. Lee et al. (2021) explored medical students', physicians', and patients' views on clinical mobile device use. Survey and semi-structured interview data showed that students preferred mobile devices because they made career research easier. They reported that UpToDate and Google were their main search engines, although poor connection, information trustworthiness and authenticity, and technological issues may hinder their usage.

Durgungoz & Durgungoz (2022) acknowledged that WhatsApp helped teacher-student communication. Their study on WhatsApp in a math classroom found that teachers' duties cannot be reduced because they maintain contact, which motivates students to engage. Yeboah and Nyagorme (2022) used UTAUT to explore distant learners' views on utilising WhatsApp for education. 273 undergraduate and postgraduate diploma students participated in the quantitative study, which found that WhatsApp is a good learning tool but has technical issues like connectivity and mobile device availability.

## Methodology

A researcher employs research techniques to plan and achieve their aims. The research examined ESL students' MAL-VLS association. In an English-medium social studies course, this research examines how mobile-assisted learning (MAL) applications improve ESL students' vocabulary and communication abilities.

Participants

This research involves 20 ESL students from a Kuala Lumpur international school. Participants came from numerous nations and cultures. The researcher employed deliberate sampling for this work. Purposive sampling requires engaging and knowledgeable participants, according to Brink (1996:141). In contrast, Creswell (2003:185) describes purposive sampling as selecting places or persons willing to reflect on and share their experience to help the researcher understand the issues and answer the study questions.

Twenty ESL students received surveys. However, eight ESL students were interviewed based on their "WhatsApp Messenger" discussion group activity.

Instruments

This research employed a sequential mixed-methods explanation. It incorporates two steps: quantitative and qualitative data collection and analysis. According to Creswell (2003), a mixed-methods study combines qualitative and quantitative data in words and numbers. To assess and report data, a series of pieces of information must be analysed. The investigation's goal and nature require both quantitative and qualitative methods. Their research only evaluated a tiny sample. This research employed closed-end and open-ended questionnaires.

Procedure

The quantitative data was analysed using SPSS 25. This study uses frequency analysis, ANOVA, a T-test, and multiple regression to examine the data. For the qualitative phase, semi-structured interviews and document analysis were performed. The data was examined using NVivo 12. Since data should derive from data, "grounded theory" is commonly used to examine qualitative data using computer software (Welsh, 2002). NVivo software simplifies "grounded theory" research, including sampling, data analysis, theory construction, and study outcomes (Hutchison et al., 2010).

## Findings and discussion

Figure 3 shows the conceptual framework based on how mobile-assisted learning helps ESL students learn more vocabulary so they can learn language and communication skills that they can use in any real-world situation.

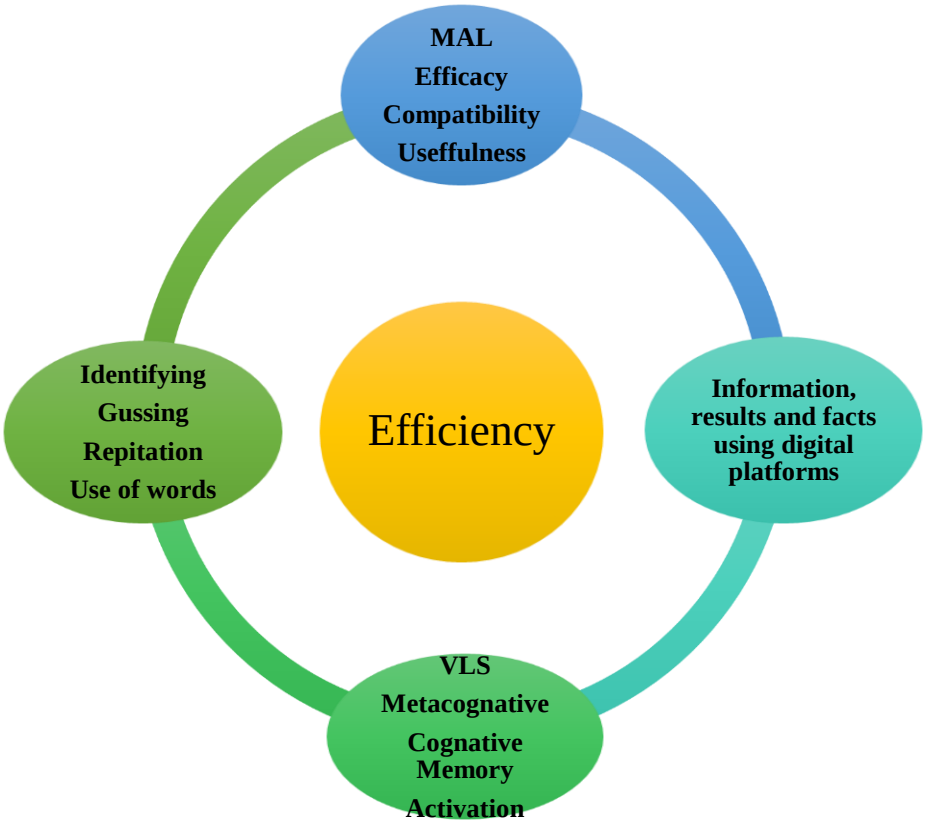


Figure 3 Conceptual Framework

Students evaluate mobile-assisted learning (MAL) usability in Table 3. A four-point Likert scale was used to rate respondents' agreement with each item. A high agreement mean score of 3.26–4.00 and an agreement mean of 2.51–3.25 between 1.76 and 2.50 for disagreeing and between 1.00 and 1.75 for disagreeing. Item 9: The highest mean score of 3.27 for vocabulary learning tasks using mobile apps without instruction the lowest mean score of 3.21 needed help utilising mobile applications to acquire vocabulary. (Item 10). The average score is 3.24, indicating that respondents feel effectiveness is vital for mobile-assisted learning.

Table 3 Mean Value and Standard Deviation of Self-Efficacy

| No | Item | Mean Value | Standard Deviation |
|---|---|---|---|
| 9. | I could complete learning vocabulary tasks through mobile apps if no one were around to tell me what to do. | 3.27 | 0.48 |
| 10. | I could complete learning vocabulary tasks through mobile apps if someone helped me get started. | 3.21 | 0.45 |
| 11. | I could overcome the difficulties encountered when I used mobile apps to learn vocabulary. | 3.24 | 0.49 |
| 12. | I could complete vocabulary tasks through mobile apps no matter how difficult it was. | 3.23 | 0.48 |
| | **Overall** | **3.24** | **0.48** |

Table 4 shows that respondents may acquire language using mobile applications without instruction. Like Deris and Shukor (2019), this research shows that students can learn vocabulary anywhere using mobile applications instead of dictionaries or books. MAL is great for helping kids learn at home or at school. Perceived ease and self-efficacy boost usage intentions. Learning also requires strong computer self-efficacy, according to Hall (2008). Dynamic cognitive, psychological, and contextual aspects impact self-efficacy. A quantitative study shows that secondary ESL students from a Kuala Lumpur international school found MAL effective for vocabulary development. Student 5 asked in Excerpt 1 whether studying using apps takes up much time. Student 5 said he could easily get information via apps. The mobile software is useful and helps students learn rapidly. This finding is similar to Item 9 of the questionnaire, which showed individuals could solve problems and use mobile apps independently. Students often used mobile devices to answer questions. They sometimes used various applications to find a place's location. Thus, qualitative research demonstrates that secondary ESL students at an international school in Kuala Lumpur agree with MAL's predicted self-efficacy in word learning.

Excerpt 1
Student 5: It made it faster if I wanted to search the population; I would have to go on google and write Myanmar's population, area, distance, kilometre and everything. However, I write Myanmar in this app, which will immediately give me the capital, the country's motto, and everything.

Based on quantitative and qualitative data, MAL is a useful technique for high school ESL students at an international school in Kuala Lumpur to acquire new vocabulary. Students view mobile-assisted learning (MAL) usability in Table 4. A four-point Likert scale was used to rate respondents' agreement with each item. A high agreement mean score of 3.26–4.00 and an agreement mean of 2.51–3.25 between 1.76 and 2.50 for disagreeing and between 1.00 and 1.75 for disagreeing. Computers may boost mobile app vocabulary scores to 3.26 (Item 16). The lowest mean score of 3.11 for mobile app vocabulary acquisition is similar to other items I've tried. (Item 15). Compatibility is vital for mobile-assisted learning (MAL), according to 3.19 respondents.

Table 4 Mean Value and Standard Deviation of Compatibility

| No | Item | Mean Value | Standard Deviation |
|---|---|---|---|
| 13 | By learning vocabulary through mobile apps, I do not have to change anything I currently do. | 3.17 | 0.48 |
| 14 | Learning vocabulary through mobile apps does not require significant changes in my existing work routine. | 3.22 | 0.53 |
| 15 | Learning vocabulary through mobile apps is the same as using other software I have used in the past. | 3.11 | 0.57 |
| 16 | Learning vocabulary through mobile apps can reinforce by computers. | 3.26 | 0.44 |
| | **Overall** | **3.19** | **0.51** |

Table 5 shows that children who learn vocabulary via mobile apps may benefit from computer training. According to Alghazi, Kamsin, Almaiah, Wong, and Shuib (2021), device connectivity and compatibility, memory and performance, and network coverage and speed all positively affect students' intentions to use mobile learning. According to Deris and Shukor (2019), Kim, Rueckert, Kim, and Seo (2013) found that students would have trouble using the applications if there was no or a poor internet connection. Quantitative studies show that secondary ESL students at an international school in Kuala Lumpur agree with MAL's compatibility feature for vocabulary learning. A second sample from an interview with study participants Students 1 and 2 Questions were asked about participants' mobile phone brands and models.

Excerpt 2
Student 1: Ah, it is an Apple iPhone 6S.
Student 2: Well, I am using amm … ah … a smartphone, a Samsung A 30 one.

The following table displays student opinions on mobile-assisted learning's viability: (MAL). The respondents agreed by scoring each item on a zero-to-four Likert scale. Strong agreement averages 3.26–4.00, and agreement is 2.51–3.25. The mean agreement score was 1.76–2.50, whereas the mean disagreement score was 1.00–1.75. Mobile apps that expand my vocabulary have increased my study time. The mean score was 3.29. (Item 7). Mobile app vocabulary acquisition gets the lowest mean score, 3.18, simplifying task completion (Item 8). Mobile-assisted learning (MAL) is important, as the mean score is 3.23. Extract 2: Student 1 used a different company's mobile device than Student 2. Samsung smartphones with Android, an iOS alternative, were used by Student 2. Alghazi, Kamsin, Almaiah, and Wong (2021) found that students' mobile devices' connection, compatibility, memory, performance, network coverage, and speed increase their mobile learning intent. Despite their mobile phones' varying storage capabilities, users perceived no major educational disparities. The poll and interview yielded the same result, making them equal. A few students used different phones. They downloaded and used WhatsApp and Zoom smoothly. A qualitative survey found that secondary ESL students at a Kuala Lumpur international school believe MAL may expand vocabulary. MAL helped high school ESL students at an international school in Kuala Lumpur develop vocabulary, according to quantitative and qualitative research.

Table 5 Mean Value and Standard Deviation of Usefulness

| No | Item | Mean Value | Standard Deviation |
|---|---|---|---|
| 5 | Learning vocabulary through mobile apps is not restricted by time and place. | 3.22 | 0.51 |
| 6 | Learning vocabulary through mobile apps can help me access the information I need. | 3.24 | 0.51 |
| 7 | Learning vocabulary through mobile apps enhances my effectiveness in my learning. | 3.29 | 0.49 |
| 8 | Learning vocabulary through mobile apps provides helpful guidance in performing tasks. | 3.18 | 0.48 |

| | | | |
|---|---|---|---|
| | **Overall** | **3.23** | **0.49** |

Students also think using mobile apps to expand their vocabulary makes learning a new language easier, which may improve their communication abilities. Quantitative data demonstrates that Richardson and Lenarcic (2008) completed a comparable study on how mobile technology improves student experiences by making student-teacher communication simpler. This study also examined how mobile technologies improved faculty-student communication. In 2018, Apple said that users downloaded 180 billion apps from its online store. With an 8.5% market share, education is the third most downloaded app category. This puts it behind games (25% market share) and business applications (9.8% market share) (Apple Store Downloads, 2018). According to studies on mobile app usage, both their usefulness and the need for additional pleasure or happiness have increased. Key app features drive students to use mobile applications for academic reasons (Carter & Yeo, 2017; Ding & Chai, 2015). Mobile apps enhance education. This is the third and last section of my talk with students 1 and 2. Participants were asked whether their tools helped them learn a language.

Excerpt 3

Student 1: Yes, because they have translation Apps that could help you while learning.

Student 2: Yes, it has been helpful because if I do not understand anything, I can ask the question, and sometimes students also reply, and I get a different types of answers

Qualitative studies found that secondary ESL students at an international school in Kuala Lumpur thought MAL helped them learn new words. According to the extract, students 1 and 2 think mobile applications help them grasp lectures. Similar to Richardson and Lenarcic (2008), the mobile app lets kids feel like they can accomplish something and feel good about themselves. The observations found that kids use their phones to help with academics while the instructor is present. However, the possibility that some students are unduly reliant on their phones rather than trying to solve the problem themselves is frightening and should be addressed seriously. A quantitative study demonstrates that secondary ESL students at an international school in Kuala Lumpur believe that mobile applications help them learn new terms.

Statistics and interviews showed that mobile-assisted learning improved student learning. The questioned students believed that "WhatsApp Messenger" and zoom for online courses were effective despite security concerns and the risk of data theft. If they missed important lesson information, several students liked the recording feature since they could replay or listen to the session. The students also said MAL made learning anywhere and anytime simpler, provided they had strong internet and heavy software gadgets. Data and student opinions reveal that mobile-assisted learning (MAL) was simple to use, user-friendly, and efficient, making students more willing to utilise the devices for school and life.

## Conclusion

This article discusses studies on the effectiveness of mobile-assisted learning apps (MAL) and vocabulary learning tactics for ESL language and communication skills. Learning a foreign language improves communication with native speakers. This stage uses vocabulary learning techniques (VLS), since they are essential to language acquisition and help learners. VLS helps students develop their vocabulary during this process. Mobile gadgets and applications for language learning are also trending. This revolution has moved language learning from textbooks to multimedia platforms and courses. This paper examined how mobile-assisted learning (MAL) and vocabulary learning methods (VLS) improve students' language and communication abilities. By determining which mobile-assisted learning applications and vocabulary learning strategies teachers and students

should use and their perceptions of them, language learning and communication skills can be greatly improved. Qualitative data was collected via semi-structured interviews. Eight people were questioned for this study to get more specific comments. The semi-structured interview was thematically evaluated. The study shows that mobile-assisted learning is becoming more important in school since it helps students learn English faster. ESL students are being taught mobile-assisted learning (MAL) for future study. This method may help students improve their language and communication skills in class or at home.

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