

Using Mobile Phone for Vocabulary Development: A Comparative Study of Pakistani Secondary School Students

Hayat ullah^{1*}, Rose Patsy Tibok², Dr. Jane Wong Kon Ling³

¹PhD student, Malaysia Sabah University (UMS), Sabah, Malaysia

²Centre for promotion of knowledge and language learning UMS, Sabah, Malaysia

³Prof. University Malaysia Sabah, Centre for promotion of knowledge and language learning UMS, Sabah, Malaysia

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*Corresponding author: Hayat ullah

Abstract

For better understanding and learning of the foreign language, it is necessary to learn its vocabulary first. With the passage of time new devices are being invented daily to meet the challenges to the modern world. Mobile phone is one of the best inventions of the twenty first century. The mobile phone not only use for communication purposes but for entertainment and teaching and learning process as well [1]. In the process of learning the mobile phone has contributed a lot, especially during covid-19. Mobile phones help students in their learning outside the classroom anywhere and anytime. The effect of using mobile phone for English vocabulary development of Pakistani secondary school students was investigated using mixed-method research design with 60 students studying in class 10th. The result of the study revealed that using mobile phone for vocabulary development is more effective than other traditional methodology.

Key words: Mobile learning, vocabulary learning, English language learning.

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INTRODUCTION

Mobiles phones are widely used across the globe for learning purposes. It can help an individual to access to any kind of information within a short time. Smart phones has taken place of computer and laptop [2]. During Covid-19 mobile phone plays a vital role. This has made online learning easy for students across the world. Mobile phone can be used for language learning as well. Mobile phone provide better environment for learning of English language [3]. It is helpful in learning of English language spelling. Android phone helps in correction of spelling and improve vocabulary. Mobile learning was initiated by Stanford University lab for Spanish language learning program [4].

Mobile is mostly liked by the students at secondary school level. Students at the age from 14 to 18 use mobile phones enthusiastically. Students like to learn while using smart phones. In fact it is easy to use for every individual to operate and find the required data with in no time. Mobile technology is one of the most advance system which is used for interaction. Using mobile device for educational interaction has become the focus of attention [5]. Previous researchers tried to show the efficacy of mobile phone pertaining to mobile technologies and its concern with traditional and

innovative methods of teaching and learning, highlighting the use of mobile learning in the entire spectrum of activity and also show the most prominent existing issue [6, 7, 8]. The mobile learning and its benefits have been recognized by various researchers [3, 8, 9]. Mobile learning has taken prominent position in the field of education in modern world [2, 5].

As a matter of fact it cannot be denied that mobile technology is gaining momentum in the field of education. Especially mobile phone is widely use during the current pandemic of COVID-19. Mobile phone learning is easy in a sense that it doesn't require any hardware or the presence of teacher. It can easily be operated once learned by an individual. It is used for many purposes in real life situations for example, SMS, MMS, and E-mails. There are various apps which is operated in a smart phone, which is most probably in English language. While using it one needs to understand English language. These apps are, whatsapp, facebook messenger, nimbus, linked inn etc which require understanding of English language and vocabulary. Using these applications in a mobile phone improve English language vocabulary as well.

Keeping in view the importance of mobile phone and its easy access to any kind of information it

is necessary to know what is a mobile learning. How can a mobile help in learning of a language. Before going into a detail we must know what is a mobile learning or M-Learning.

M- Learning

In the beginning when mobile phone became one of the most used major means of communication, the term mobile learning or M-Learning was introduced. Mobile learning is a modern innovation, advance operating system design, low cost and acceptance of mobile phone technology in a community as stated by Peters [11]. Peters [11] is of the opinion that the mobile phone should have three criteria: capability of providing communication or information functions, portable, part of the time and to be a wireless system (without power sources/telecommunication). To the most mobile means, portable and movable. It is a too personal device as opposed to shared use. Words; mobile and personal are use often use interchangeably. According to Naismith [6], the general requirements for mobile learning are:

- a. Mobile can be highly portable which can easily be used by learners.
- b. Contrary to the general work or entertainment it should support personal learning while adapting to learners' ability, knowledge and learning style.
- c. The learner can retrieve knowledge without the technology obtruding on the situation.
- d. Availability for easy communication and interaction with teachers, experts and peers.
- e. It must be adaptable in terms of learning and the learners' evolving skills and knowledge.
- f. Persistent in managing learning situation throughout lifetime for the learners' knowledge and immediate accessibility despite changes in technology.
- g. To be useful and suitable in real life situation for communication, reference, work and learning.
- h. Should be easy for people to use without previous experience.

Mobile learning enable an individual to use the context-aware technology by exploring their world, in a continuous communication with one another through technology. Mobile technology enable people conversation between learners in a virtual and real life, for example between visitors to a museum and visitors to its virtual peers. Mobile learning provides opportunity to an individual to learn and support in learning objectives outside the classroom, to the conversations and interactions in a real life situation [12].

Previous researches have shown the effectiveness of mobile learning in the context of English language learning skills. Nah, White and Sussex [13] carried out a research while investigation the effectiveness of using a mobile phone for learning of listening skills and attitudes of the students towards

mobile phone. The students showed interest in mobile phone and expressed their positive attitude and found the activities interactive and convenient. It is in fact a student' centered learning process as students in this way can learn easily everywhere and anytime. Keeping in view the previous researches it is conclude that mobile phones offer many opportunities to the students in various domain of language learning. Mobile learning is easy as it has many features such as personalization, localization and mobility.

Mobile learning open up new vistas for learning of English as a Foreign Language (EFL) vocabulary teaching and learning in education. Chen and Chun [14] presented a study in terms of the personalization of mobile phone for English vocabulary learning system concluded appropriate method of learning vocabulary. Findings of the researches show that the students' interest and performance in the vocabulary learning system is promoted through mobile phones because of its effective and flexible vocabulary learning process.

Based on the researches done in using mobile phone language learning and the aforementioned discussion this research study also aims to investigate the effectiveness of mobile phone in vocabulary development at secondary school level in district Mardan, a city in Pakistan.

1. Research Objectives

- a. To investigate the difference between the level of vocabulary learning before and after using vocabulary learning program in mobile phone?
- b. To investigate the difference between the levels of vocabulary learning level of the secondary school students before and after using flashcards?
- c. To explore the difference between the obtained scores of the students who used mobile learning program and those who used flashcards?
- d. To see the students' experiences while using English vocabulary program on mobile phones?

2. Research Questions

- a. To what extant is a difference between the level of vocabulary learning before and after using vocabulary learning program in mobile phone?
- b. What is the difference between the level of vocabulary learning level of the secondary school students before and after using flashcards?
- c. To what extant is a difference between the obtained scores of the students who used mobile learning program and those who used flashcards?
- d. What are the students' experiences while using English vocabulary program on mobile phones?

METHODOLOGY

The study was carried out in The Fazlehaq College Maradn, a reputed institute in Khyber Pakhtunkhwa, Pakistan, at secondary level. English is

taught as a compulsory subject at SSC level. Throughout their academic activities English language structure is taught to the students from grade one to SSC level to improve their language skills. Students were supposed to attend all language skills, i.e speaking, and writing and grammar lessons necessary for learning of English as a second language. At the end of the academic session the students were required to know English language skills.

Participants

The participant comprised of 60 students studying at The Fazlehaq College Mardan at secondary school level. The students were selected to SSC level on the basis of their performance in grade 8 examination and entrance test prescribed for admission to SSC class. The mobile phones of the students that were compatible and incompatible with the vocabulary were taken into consideration of the selected group having the same characteristics. Students having mobile phones with compatibility of the vocabulary learning program were appointed as experimental group which consist of 30 students. The other 30 students who were supposed to use the traditional vocabulary acquisition

methods to learn vocabulary were taken as control group.

Research design

Mixed method research design was used to conduct the study, the effectiveness of using mobile phone vocabulary learning program on students' learning vocabulary was investigated. For collection of quantitative and qualitative data a mixed method research design was used. Weak points of quantitative as well as qualitative methods were, therefore, minimized. Pre-test and post-test with the control as well as experimental group were used for collection of quantitative data. In six week period time new words were taught to the experimental and control groups. Vocabulary acquisition program was selected to be operated by the students before the start of the experimental process. ECTACO Flash Cards is a program use to run on mobile phones. From ECTACO Flash Cards application, the vocabulary suitable for students' level were selected after the content was scanned and made available for the students to use. The most suitable according to the level of the students, General 2 level (see Figure-1) was selected. Under the topic this application help the user to memorize around 1000 words.

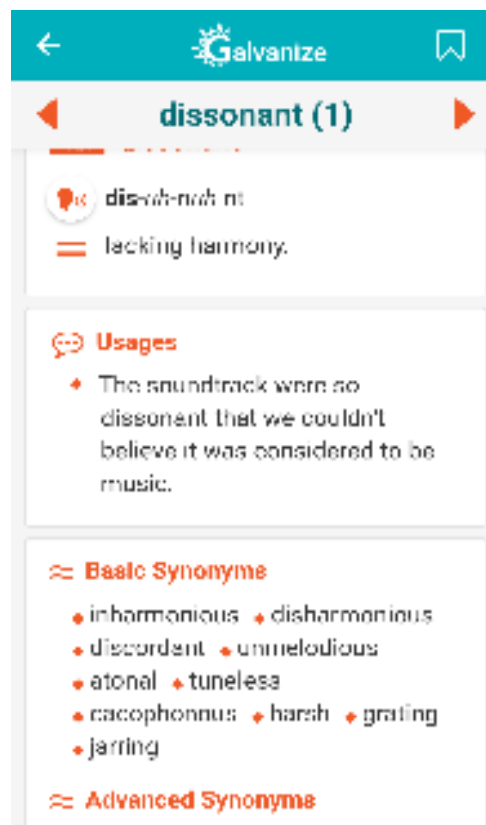


Fig-1

The students were explained the purpose of the study and expectations from the students, before introducing them the application. The students were expected to use the vocabulary program on their mobile

phones in their leisure time during the six-week period time. The vocabulary flashcards including the words available in the mobile phone were given to the students in the control group. Students of the control group were

expected to use the traditional vocabulary learning techniques. Students of the control group studied new words on paper for six week while using these vocabulary flashcards. Students of the control group were unable to interact with vocabulary learning program in mobile phones. For assessment of the experimental and control groups a multiple-choice test was administered before and after the study. Semi-structure interview questions were used for qualitative data collection after obtaining the quantitative part of the study. From the experimental group eight interviews were conducted. The students from experimental group were randomly selected for interview. Digital voice recorder was used for recording there answers.

Data Collection Instruments

English vocabulary of the students was measured through administering a multiple-choice test. In the beginning a multiple-choice test consist of 80 items with frequently used vocabularies in the mobile phone was constructed. In order to find the measure of internal consistency, the test was administered to 50 students of the same course. Items falling below 0.3 of Point Biserial values were removed and the internal consistency measure of the multiple-choice teas was seen as 0.783. There were 25 items in the final version of the test having four choices for each item. This multiple-choice test consist of 25 item was administered

to the experimental and control group before and after the study.

Data Analysis

In the study students received 4 points for correct answer each in the pre and posttest. In the multiple-choice test scores of the students were ranged from 0 to 100. For analysis of the quantitative data, descriptive statistics, independent and dependent t-tests were administered to answer the research questions. One participant was excluded from analysis of the data from each of the experimental and control groups as they did not take the posttest. In order to identify the use of use of mobile phones for learning of English vocabulary, a descriptive qualitative analysis was carried out after transcribing the semi-structured interviews involving eight students. Three categories: time devoted for using mobile phone for learning, the place preferences for the use of mobile phone for learning and perceived effectiveness of using mobile phones for English vocabulary learning were generated for which questions of the semi-structured interviews as a framework was used.

RESULTS

Table 1 show the descriptive analysis of the pre and posttest results of the participants.

Table-1: The Descriptive Analysis of Pre and Post-test Results of Participants

		N	Mean	Std. deviation	Std. Error mean
Pre-test	The experimental	29	25.01	16.33	3.03
	Control group	29	26.27	18.07	3.35
Post-test	Experimental group	29	37.91	22.07	4.09
	Control group	29	34.89	22.08	3.91

The first research question which was about the investigation of to find a difference between the vocabulary learning level of the students who use vocabulary learning program in a mobile phones before and after the study. The result of the paired-samples t-test proved that posttest score of the experimental group (M= 37.91) is higher statistically than the pre-test of the experimental group (25.01) ($t(28) = -7.6; p < 0.05$) see

table-2. Students of the experimental group practiced with the vocabulary learning program in mobile phones outside the classroom. Active participation of the students was expected to complete the levels in the vocabulary learning program. The findings indicate that using vocabulary learning program in mobile phone improve students vocabulary learning.

Table-2: Comparison of the pre and posttests of the experimental group

Paired differences

	Mean	Std. deviation	Std. Error mean	95% confidence interval of the Difference		t.	df.	sig (2-tailed)
				Lower	upper			
				Pre-posttest	-8.62			

As for the third research question which was whether there was any difference between the gain scores of the students using mobile vocabulary learning program and the obtained scores of the students using the flashcards on paper, investigated. The obtained

score for the control and experimental group was calculated and compared. A statistically significant difference was found between the mean score of the experimental group (M=13.79) and the mean score of the control group (M= 8.62)

Table-3: Comparison of the main obtained scores

Groups	N	Mean	Std. deviation	df	t	p
Experimental group	29	13.79	9.77	56	2.191	0.033
Control group	29	8.62	8.12			

The last investigated research question was about the students experiences of using English vocabulary program on mobile phones as vocabulary learning tool. There were three categories i.e. time devoted for using mobile phone for learning, preference of the place for using mobile phone for learning, and perceived effectiveness of the use of mobile phone for English vocabulary learning purposes, that resulted in terms of descriptive qualitative analysis.

In response to the question asked in interview one of the participants replied

"In the beginning I spent one hour but afterwards, I raised up to two hours in the dormitory every day to use vocabulary program on the mobile phone."

Some of the participants, however, replied that their use of program dropped lately. One among them responded as

"Initially I used 6 to 12 minutes, but then, it raised up to one and a half hour, but later on it dropped."

It was also revealed that the participant interest in the use of mobile diminished for vocabulary learning program via mobile with the passage of time as in the end of their academic session they were found less interested. From their interview it was assumed that they use mobile phone in their leisure time. One of the participant reply is presented here

"I use mobile phone with friends during the daytime when we got bored and before go to sleep I also use it".

Another participant replied as

"I use mobile phone on my travelling on the bus".

The participants' reply in response to the statement of their perceived effectiveness of using mobile phone for English vocabulary learning showed;

"I prefer to use mobile phones for vocabulary learning rather than as a dictionary. I really believe that mobile phone is useful for vocabulary learning."

Another response of the participant was as;

"For me it is boring to study vocabulary on paper. On the other hand, I like studying with mobile phone which seems more effective and fun for me on account of its availability all time".

From the students responses it is observed that effectiveness, availability, and entertaining of using mobile phones have made them a preferred way for English vocabulary learning in comparison to that who use hardcopy tools.

DISCUSSION

There are four findings of this study. The first result was about using of vocabulary learning program through mobile phone helped in improving the students' acquisition of vocabulary learning and attitudes of the students about mobile phone for English vocabulary learning. The 2nd findings showed that the vocabulary learning of the students was also seen effective when flashcards were applied. The 3rd findings highlighted the use of vocabulary learning programs on mobile phone is more effective than using flashcards for vocabulary learning. The 4th findings showed that the use of mobile phone is more effective and entertaining in terms of learning English vocabulary.

The findings of the study indicated that mobile phone is not only effective for learning of English vocabulary but it is very interesting as students showed positive opinion towards the use of mobile phone for learning of English vocabulary learning. The use of mobile phones, similarly, for investigation of the value of dictionary use on mobile devices for incidental vocabulary learning in education found by Song and Fox [15] that students showed positive sign towards the use of mobile phones for learning. They also accepted both devices, computer as well as mobile for vocabulary learning. According to them mobile and computer devices in a way construct the vocabulary learning activities. Students can also have showed positive attitude towards mobile phone for learning of English language besides vocabulary learning [16]. Students were found positive in a study carried out by Cavus and Ibrahim [17] while investigating them a mobile learning as a tool for learning English vocabulary using Short Messages, text messages. Using mobile phones with improvement in vocabulary learning in this study is a contribution to achieve such results. Apart from using mobile phone for learning of vocabulary the flashcards were also found effective for improving English vocabulary learning. The previous research also supported the use of flashcards as effective tool. According to Tan and Nicholson [18] flashcards training is significantly better than reading words and comprehension. They found students interesting in flashcards as students took flashcards for fun as well. Similarly Stutz [19] supported flashcards as effective tool and found it fast and fun to use. Flashcards according to him were found effective on

account of its multi-sensory appeal and occupying short time. It was concluded in the article that there are different means of using flashcards for example, writing, speaking, testing and fun. Based on the literature flashcards are useful tools of learning vocabulary. This research study also indicates that with the help of mobile phone using vocabulary learning program improve students' learning of English vocabulary as compared to the traditional vocabulary learning tool i.e. flashcards. Similar results were also found in Thornton and Houser [20] on comparing students' scores studying vocabulary materials on mobile phone and paper. It was therefore, concluded that using mobile phone for language learning is effective as compared to paper. Increase in the use of mobile phone not only help students in communication and entertainment but for learning purposes as well. Mobile phone on account of its accessibility and portability encouraged students to use it as an English vocabulary learning tool in their leisure time. Mobile phone as vocabulary learning tool is better than using flashcards.

CONCLUSION

Mobile phone has become a part of our life due its use and performance in a daily routine. On account of its accessibility and decreasing cost mobile phone is not only use for communication and entertainment but for educational purposes as well. The need for learning English language is also increasing as mobile phone. The use of mobile phone and its features made it more common and running of the vocabulary program in a mobile phone has become more appealing, students seem busy often using mobile phone as instructional tool for learning of language.

However, it is worth mentioning here that the participant students in this study were in the last stages of SSC level. Therefore, their participation might have been because of their learning vocabulary to pass the final examination be the reason for high motivation to the interventions used by the students in both the control and experimental groups. Before generalizing the result to other groups, this limitation of their final exam influence may be taken into consideration. Although in the intervention a very simple form of English vocabulary program carried out on mobile device was used, this study explained that using the vocabulary learning program on mobile phone has positive effect on learning English vocabulary than a traditional vocabulary learning methods.

Therefore, for learning of English vocabulary, it is concluded that a vocabulary learning program carried out on mobile phone can be used.

Implications and Recommendations

There could have important implication in the results of the investigation for English vocabulary learning and mobile learning. This can be employed an

extracurricular activities for students at secondary school level in terms of English vocabulary programs executing on mobile phone. Students can practice anytime and everywhere since they can carry their mobile phones almost around the clock. It is an opportunity for students at secondary level to have an enjoyable experience of learning as a fun. The results of this research study has suggestion that mobile phones provide best opportunities for learning outside the classroom because of its availability all time.

As for another implication of the study is that some time mobile phones lacking English vocabulary program, instead of this flashcards can be used for vocabulary learning as they also showed positive result of improving vocabulary learning. However, it must be kept in mind that use of mobile phone is more effective than using flashcards for English vocabulary learning. Therefore, second option as flashcards should be considered in the absence of mobile learning program. The use of visually screens and multi-media features for example pictures and sound is recommended for future study to be investigated. In this study mobile software English vocabulary program was used in this study therefore future research may find English text book based vocabulary learning program executing on mobile. Non-random sampling is also one of the constraints in this study. For more generalized findings randomly selected samples should be employed in future study.

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