Learn Language Vocabulary with Mobile Application: A Case Study of Quizlet

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Abstract— **In this study the researcher has investigated mobile-assisted language learning (MALL) and also conducted an interview to obtain the attitudes of undergraduate engineering students at Azad University of Tehran-South Branch towards the use of their mobile devices and in particular Quizlet application to learn English vocabulary. First, a questionnaire was distributed among convenience sample of 70 engineering students on their attitudes toward learning languages and use of mobile applications to learn vocabulary. The results showed that all of the participants had a smartphone that can be used to install language learning applications and liked the idea of using it to learn languages. In the next step, the vocabulary for the Professional Engineering English was accessible to the students in the Quizlet app. At the end of the semester, ten students from the sample participated in the interview. The vocabulary exams' scores were compared to those of the students in the previous semester and it did not reveal a significant difference. Contrary to the exam scores, the interview showed that the students were so eager to use mobile applications and considered Quizlet as a very effective, suitable and fun learning method. The findings of this research approved that the use of mobile applications in language learning is advantageous with reference to students' motivation and have semi-permanent benefits. More studies are recommended to be done considering larger scale and longer period of time to support the significant effect of mobile assisted language learning.**

Keywords—Quialet; Foreign language learning; Mobile application

I. INTRODUCTION

The world of language learning has been extremely changed by the introduction of computer-assisted language learning (CALL). However, after extensive use of mobile devices in every aspect of life, users and especially language learners were more eager to use their mobile devices to learn a foreign language, as it gives them the freedom to choose their best time and place. Also, they could use this advantage to spend their free time learning a language without any limitation such as paper books, classroom, teacher and etc. Using mobile technology in language learning is called Mobile-Assisted Language Learning (MALL). In MALL it is not essential for the learners to be present in a classroom or even at a computer to find learning materials. That is to say, MALL is the best solution to language learning when it comes to time and place problems [1].

Mobile learning (m-learning) is defined as a potential way to make the learning process personalized, self-generated, formal, and omnipresent across various contexts yet with a focus on the concept [2].

Studies have also shown positive results about students who are interested in using mobile devices for learning vocabulary [3]. However, Chinnery [4] states that there is no absolute evidence that new technologies are better than current materials and Beatty [5] approves that teachers have to decide very thoughtfully before spending their time, money, and energy on new technologies. The motivation for this study comes from the fact that although students seem to use mobile technologies for learning, there isn't any proof that they had been successful. This study tries to find out whether mobile-assisted language learning techniques can propose any advantage to learners. In fact, this study will pay more attention to vocabulary learning as a skill that students often recognize as tedious to learn and seems to have more opportunity to be learned through mobile devices platforms.

So, in this study, the researcher would like to find out if "Learning vocabulary with Quizlet mobile application has any significant effect on improving Professional Engineering English vocabulary."

The null hypothesis of the research study is, therefore, "Learning vocabulary with Quizlet mobile application does not have any significant effect on improving Professional Engineering English vocabulary."

II. LITERATRE REVIEW

A. Mobile Assissted Language Learning

As for the first concept in the paper, the definition of mobile-assisted language learning should be stated. Valarmathi [6] defines this concept as using a mobile device in order to

strengthen the language learning experience. The devices could be a normal mobile phone, a smartphone, a tablet computer or, an iPod. Each of these devices can offer some unique features that can help language learning occurs faster. However, Ally & Prieto-Blázquez [7] state that the mobility of the device is an important matter which allows learners to complete the learning process in their favorable time and place. As Kukulska-Hulme [3] defines, the improvement of using mobile technology in language learning happens because of its opportunity to be portable. So, this important feature makes it so beneficial for learning in the context. Wagner [8] stated that most of the students have chosen their mobile phones for learning as it is the very most available and natural device. it approves that little training or support is required for them to make use of it.

Studies have also shown that students learn more effectively by using a device that is owned by them rather than a borrowed one using a device that is owned by the student is more effective than using a borrowed device [9]. In addition, this may help the institution save their costs in both financial and administrative points of view. This is a bring-your-own-device (BYOD) approach that goes really well with the students, teachers and institution's purposes.

B. Revieew of Related Studies

It's been a long time that students use flashcards to learn vocabulary which now has been substituted with smartphones. in the study of Azabdaftari and Mozaheb [10], they compared two methods of learning vocabularies with flashcards with using a mobile app as digital flashcards. One of the advantages of digital flashcards over paper-based flashcards is that they can support the text and words with multimedia like audio files and they can also oversee and save the learner's progress. Especially, when the learner is struggling with learning numerous vocabularies or diverse lists with different subjects, a flashcard app can be more convenient and workable than a pile of several hundred paper cards. In this study, 40 students as the experimental group used a flashcard app and SMS and internet dictionaries support at the same time, whereas the control group of 40 other students used traditional paper-based flashcards for seven weeks. At the end of the process, a multiple-choice test was then carried to examine the success of both groups. Moreover, some interviews were also conducted with 10 students of each group to evaluate their attitudes toward the learning process. The findings revealed that the students learning vocabulary via a smartphone app performed significantly better than the control group.

However, some researchers believe that it is difficult to prove that students have totally used the application, so they prefer to focus on the students' attitudes to mobile learning as a measure of research [11]. Kutluk and Gülmez analyzed

accounting students' attitudes to the use of mobile applications for learning. All the students in the study had not used mobile devices in their accounting lessons but a large percentage of them had a positive attitude towards using m-learning and believed that using mobile technology for their homework or research is easier and faster.

Jaradat in [12] analyzed student attitudes to the use of mobile learning French and tried to determine the changes of each student during using mobile applications for learning. The students participated in this study for two semesters and used mobile technologies for learning both inside and outside the classroom. 10 interviews were conducted with randomly chosen members of the group. The results showed that 76% picked French lessons by mobile phone rather than on a PC or in class. 90% said they were happy with the use of mobile learning and 91% said they plan to keep using mobile technologies to learn French. Although, the result of the test did not show significant progress in the students' learning.

It is also important to consider the fact that the nature of mobile learning is different from the formal setting. As Kukulska-Hulme acknowledges the nature of mobile learning is "spontaneous, opportunistic and informal" [9]. So, this saying is in line with the fact that learning via mobile phone in such an informal setting with lots of distractors may be difficult and students cannot concentrate as needed. Therefore, it seems that learning English vocabulary or grammar as a foreign learner by mobile could be a challenge yet interesting.

Briefly, learning a foreign language by the use of mobile applications can be a fascinating change for a learner. Having reviewed most of the research in the field of mobile-assisted language learning, it was approved to the researcher that there is a benefit to using it to help students learn vocabulary. However, their technological limitation should not be forgotten. Small screen, lack of physical keyboard, and a lot of distractors around may applaud its inappropriateness as a complete learning tool. Learning content should also be adjusted according to the medium and the content that need a constant internet connection cannot be usable in some areas.

C. Quizlet and Mobile Learning

Quizlet, the website of which is (www.Quizlet.com), is a vocabulary-learning program based on the web that was developed and founded by Andrew Sutherland in 2005. it also has an application on Android and iOS platforms. He was first made this program for a high school French class. Considering the website, it contains over 40 million study sets created by users, both students, and teachers, from all over the world, and 90 percent of the students could get higher scores after using this program. In order to make a new study set, like the Professional Engineering English, a user can either make a list

manually on the website or they can be transferred from an Excel or .csv file. If the vocabularies are uploaded to the site from an Excel file, first it should be checked if there are any conversion errors. After a few minutes, the whole list of vocabulary is accessible for users. It is both possible to make the study set private or public. If it is private the students need to log in to the site and be approved by the list maker to use the vocabularies. However, if it is public all students can have access to the list without logging in.

III. RESEARCH METHODOLOGY

A. Participants

The participants of the study were 70 students from Azad University of Tehran: South branch. 58 of the participants were male and the other 12 students were female. Their age range was from 19 to 31 years old. They were studying Professional Engineering English in 2020 the first semester.

B. Instruments

- A Likert-scale questionnaire of 30 questions was assigned to a convenience sample of 70 students. The students were from different subjects of Engineering, both male and female. The students were sitting in 3 different Professional Engineering English classes, however; all of them were provided with vocabulary study sets in the Quizlet app. Working with the Quizlet application was not assigned as homework, although it was recommended by the instructor each session.

- At the end of the semester 10 students from the convenience sample of 70, participated in the interview, 7 males and 3 females. The questions that were asked in the interview are as below:

1. Have you started using the app and how did you find it?

2. What are the benefits and drawbacks of using Quizlet over other methods of learning vocabulary?

3. The Quizlet app has four modes: Flashcards, Learn, Write, and Match. Which of these have you used and how did you find them?

4. Do you think mobile learning can be helpful for learning English?

5. Do you prefer your instructor use mobile learning in English class instead of the traditional methods?

6. What is the best app for building vocabulary from your point of view?

7. What do you personally do to improve English vocabulary rather than mobile apps?

IV. FINDINGS

First of all, through the survey, it was understood that all the participants own a smartphone that has the ability of to install the Quizlet app.

The next question was to approve that "mobile learning can help them improve English as a foreign language". The survey showed that 68% of the engineering students strongly agreed or agreed.

The students were then asked to remark if "using a mobile phone for learning is easy". 67% of the engineering students agreed or strongly agreed. Only a few of them disagreed or strongly disagreed 4% and a large group of 29% remained doubtful in either comment.

In the next question, they were asked if "they can use the app on their own without any help from outside." The answers revealed that the majority of 80% of the engineering students believed that they do not need any instruction to use the app.

In the next step, the students were asked whether "they were interested in using the app for learning English" which can be considered as the most important question. Their answers revealed that 71% agreeing or strongly agreeing with the statement.

In the next section, students were asked to answer whether "support from the university would motivate the students to use mobile learning." 57% of the students agreed or strongly agreed. 12% of the engineering students were not interested to use mobile learning if the university provided technical support. This of course means that they do not think that support from university would be essential and lack of support has no effect on their choice to use mobile learning.

The next question tried to explore whether the students really like their teachers to use mobile learning in their classroom. In response to this question, 72% of the engineering students agreed or strongly agreed.

The students were then asked to comment their opinion on "the amount of cost involved in mobile learning." Because all of the students who took part in the survey already have a smartphone the answers to this question are more likely to be related to software, bills from the mobile phone provider, or internet costs for the university rather than a mobile phone. 60%

of the engineering students disagreed or strongly disagreed with this statement and no student strongly agree. Therefore, it seems that students do not evaluate high charges for the use of mobile learning.

In the last step, the students were asked to answer "how effective they thought mobile learning would be. 31% of the engineering students agreed or strongly agreed with this statement. The majority of students hesitated about this statement and could neither agree nor disagree with that.

After 16 weeks of learning vocabulary with Quizlet, at the end of the semester, a convenience sample of ten students (7 male and 3 female) took part in an interviews to collect more information about their experience. The questions and findings will be explained in detail below.

Question 1: Have you started using the app and how did you find it?
All interviewees had already used the app and considered it an interesting and informative experience. Three of them described the app as a tool that can be moved, so this feature made learning possible anywhere and anytime.

Question 2: What are the benefits and drawbacks of using Quizlet over other methods of learning vocabulary?
All respondents described the experience of ready-made vocabularies as very beneficial and time-saving. However, two of them found the ads on this app disturbing from concentration on learning. One of them believed that writing the words on a list by hand could be a part of learning.

Question 3: The Quizlet app has four modes: Flashcards, Learn, Write, and Match. Which of these have you used and how did you find them?
All the respondents agreed on using the four modes for learning vocabularies, although they mentioned that the match mode is more fun to continue.

Question 4: Do you think mobile learning can be helpful for learning English?
All the respondents believed that mobile learning is a helpful and practical way of learning, except one of them who believed that being so dependent on mobile phones can be a danger for society.

Question 5: Do you prefer your instructor to use mobile learning in English class instead of the traditional methods?
It can be anticipated that all respondents welcomed using mobile learning in English class and some believed that it could be useful in other subjects too. Although, one of them was concerned about using a mobile phone in class can be considered as a distraction to the learning process.

Question 6: What is the best app for building vocabulary from your point of view?
From the respondents' point of view Duolingo, Mermise, and Quizlet are the best app for learning vocabularies. However, one of them believed that reading is the best way to learn vocabulary.

Question 7: What do you personally do to improve English vocabulary rather than mobile apps?
Three of them considered reading and taking notes as their personal way to improve English vocabularies. One of them mentioned highlighting the words in the texts in a good way. And others did not use any particular method to improve their English vocabulary.

After the questionnaires and interview phase, the final exam was held among the engineering students and the results were compared to those of the last semester of the students who did not use the Quizlet app for learning vocabulary. Both Professional Engineering English exams were organized in the same, the first part of which was to define 25 vocabularies. The results of the exam are illustrated in Table I.

TABLE I.   DESCRIPTIVE ANALYSIS OF VOCABULARY SECTION WORDS DEFINED CORRECTLY IN TWO EXAMS

Exam	Participants	Min	Max	Mean	SD	Median
Last semester	82	2	25	13.5	5.91	15
This Semester	70	1	25	13	5.72	14

V. TESTING THE NULL HYPOTHESIS

It is clear from Table I that the mean and median scores were higher in the last semester where the students did not use the Quizlet app to learn the vocabulary. The null hypothesis predicted that "Learning vocabulary with Quizlet mobile application does not have any significant effect on improving Professional Engineering English vocabulary." In order to test it, an independent-samples t-test was run to compare the last and current semester mean scores of Professional Engineering English students on the final exam in order to probe the null-hypothesis. Table I displays the descriptive statistics for the two groups on the final exam. The results showed that last semester students (M= 13.5, SD=5.91) and current semester students (M = 13, SD=5.72) groups had fairly close means on the final test.

Table II displays the results of the independent-samples t-test ran to probe if the difference between the two groups' means on posttest was statistically significant. The results (t $(58) = .488$, p = .627, r = .064 representing a moderate effect size) indicated that there was not any significant difference between the two groups' means on the final test. Thus it can

be concluded that the null-hypothesis as "Learning vocabulary with the Quizlet mobile application does not have any significant effect on improving Professional Engineering English vocabulary." **was retained.**

It should be noted that the assumption of homogeneity of variances was met. As displayed in Table II, the results of the Levene's test (F = .053, p = .818) showed that there was not any significant difference between the two groups' variances on the final test. That was why on the first row of Table II, "Equal variances assumed" was reported. This indicates that there is actually no significant difference between the vocabulary points in the two final exams. This, therefore, would prove that using the Quizlet app made no difference to student performance in the vocabulary section of the exam.

TABLE II   INDEPENDENT SAMPLE T-TEST

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| | F | Sig. | T | Df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
								Lower	Upper
Equal variances assumed	.053	.818	.488	58	.627	.733	1.503	-2.275	3.742
Equal variances not assumed			.488	57.940	.627	.733	1.503	-2.275	3.742

VI. CONCLUSION

Contrary to the varied results of this study, one can come to the conclusion that mobile-assisted language learning does have its hidden capabilities. Therefore, it can be very constructive to carry out further research in this field. As can be seen in the literature review and the results of this study, there is a lot of research gap in this area.

Considering the result from the questionnaire the students were very interested to use the Quizlet app and their attitude toward mobile learning was positive, although finally, they did not achieve a better score in the exam performance.

Mobile learning and mobile-assisted language learning are almost new fields for study and research and an expanding world would be in front of the researchers to explore.

Last but not least, the students' positive perception toward mobile learning is the most important factor in learning as it can keep them motivated to remain on track. If by using a mobile app they can be contributed to learning vocabulary and reverting it from a boring compulsory activity to an enjoyable and rewarding learning experience, then we should definitely support it.

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