

The Effect of Using WhatsApp on EFL Students' Medical English Vocabulary Learning During the Covid-19 Pandemic

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Abstract

The role of social networking mobile applications such as WhatsApp in enhancing second language vocabulary learning among English language learners continues to be a subject of interest for many scholars. The current study aimed at examining medical English vocabulary learning among undergraduate students using WhatsApp compared to learning vocabulary via the Blackboard platform during the Covid-19 pandemic. To this end, 108 medical students (51 males, 57 females) enrolled in a first semester English for a specific English course participated in the study. A quasi-experimental design was adopted for two groups. Fifty-three students participated in the WhatsApp group and 55 students formed the Blackboard group. A pretest-posttest design was employed to collect data. Results of t-test scores did not show a significant difference between the WhatsApp and Blackboard groups on a vocabulary test. Results of a survey that measured students' opinion of the use of WhatsApp as a platform for learning new vocabulary showed positive perceptions since participants thought that WhatsApp enhanced their learning experience.

Keywords: *Blackboard platform; English for a specific purpose; Mobile-assisted language learning; vocabulary learning, WhatsApp*

1. Introduction

Nowadays, the integration of mobile technologies especially instant messaging (IM) application has increased in the field of language teaching (Chai, Wong, & King, [1]; Duman, Orhon, & Gedik, [2]; Liu, [3]). Such technologies could provide a wide range of second language learning opportunities, especially in acquiring vocabulary, which is a key element in learning a foreign language since the absence of vocabulary makes it impossible to convey messages as Wilkins, [4] argued. For foreign language

learners, vocabulary knowledge is considered to be the most significant element (Chen & Chung, [5]) since it is one of the building blocks of a language (Nation, [6]). Researchers found that many foreign language learners face difficulty in leaning new vocabulary (Oxford, [7]; Schmitt, [8]). Therefore, it is worthwhile to explore the efficiency of a tool that could facilitate vocabulary learning. Mobile technologies have the potential of enhancing learning language skills (Shih, [9]; Miyazoe & Anderson, [10]). They can play a role in boosting vocabulary acquisition (e.g., McGlinn & Parrish, [11]).

Instant messaging (IM) application is one of the commonly used functions among smart phone users. This has prompted researchers to examine its impact on teaching various aspect of vocabulary such as English collocation (Motallebzadeh & Daliry, [12]). According to Lu [13], IM applications could improve the learners' vocabulary size since they are accessible anytime and anywhere (Cavus & Ibrahim, [14]). WhatsApp is most commonly used social-networking application on mobile phones (Yeboah & Ewur, [15]). Most of the research that examined using WhatsApp as a platform for learning new vocabulary compared its efficiency with pen-and pencil traditional method. None of the previous studies investigated the use of WhatsApp as compare to the Blackboard platform. In addition, most of the previous studies focused on academic English vocabulary. To the researchers' best knowledge there is no study that focused on the impact of using applications such as WhatsApp on leaning medical English vocabulary. Therefore, the current study set out to contribute to this line of research trend by investigating the impact of WhatsApp

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on medical English vocabulary among Saudi medical students who are enrolled in English for Specific Purpose (ESP) courses.

2. Literature Review

Many scholars compared the use of Short Message Service (SMS) in teaching and learning vocabulary to traditional approaches (i.e. using a dictionary or in the classroom). For example, in her experimental study that involved vocational high school students in Taiwan, Lu [13] investigated the potential impact effect of SMS messages on vocabulary acquisition. During the first week 15 students who were from experimental group learned a list of 14 words using mobile phones. A second group of 15 students from the control group learned the same list using printed materials. During the following week, participants switched groups. Members of the control group learned another list of 14 words using mobile phones. During the first week, students from the experimental group learned the new list of words using printed materials. A posttest was conducted to measure students' vocabulary gain. Statistical analysis revealed that students who used mobile phones learned more new words than students who only had access to printed materials. However, results of the delayed tests showed that both groups retained the same rate of words. In another study that involved Chinese students, Zhang, Song & Burston [16] explored the impact of SMS on vocabulary learning. A group of 78 participants two intact classes participated in the study. The experimental group received a list of 130 words via SMS. The paper group received a hard copy of the same list in class over the course of 26 days. Results showed that the SMS group significantly outscored the paper group. However, no differences were found in the delayed posttests. These results are consistent with Lu's [13] findings.

Following the same line of research, Song [17] examined the usefulness of SMS in helping a small group of ten students in Hong Kong to improve their English vocabulary learning. Her study integrated SMS into web-based vocabulary learning. Data revealed that SMS helped students significantly improve their vocabulary knowledge. Open-ended questionnaire interviews reported a positive attitude among participants towards using SMS as a tool to learn vocabulary. The same positive results were reported by Cavus & Ibrahim [14]. In their experiment, which involved forty-five undergraduate students, they

investigated the use of SMS to learn new vocabulary over the course of nine days. Researchers reported a significant difference between the scores of pretest and scores of posttest. Students were able to achieve score higher on the posttest. The researchers concluded that using SMS is an effective tool vocabulary. They also reported that students enjoyed their experience and showed interest in further receiving notes and summaries for other lectures via SMS.

In the Iranian context, Jafari & Chalak [18] examined the impact of WhatsApp on vocabulary learning among 60 high school EFL students. Participants from the experimental group received their vocabulary instructions and assignments via WhatsApp four days a week over the course of four weeks. Participants from the control group learned target vocabulary in the classroom. Results showed that students who learned new vocabulary via WhatsApp outperformed their peers who learned the same list of vocabulary in the classroom. Male and female students scored equally on vocabulary tests.

In a more recent study, Bensalem [19] investigated the effectiveness of employing WhatsApp as a vocabulary learning tool among forty EFL Saudi students. The study also aimed to gauge learners' perceptions about the use of WhatsApp in developing their vocabulary. The participants of the study divided randomly into experimental (WhatsApp group) and control group (paper and pencil group). Participants from the WhatsApp group were instructed to complete and send their vocabulary homework assignments via WhatsApp, while participants from the control group were instructed to submit a hard copy of their assignments in class. Statistical analysis revealed that the WhatsApp group were able to score higher than their peers in the control group on a vocabulary test. Participants from the WhatsApp group reported having a pleasant experience learning new words using WhatsApp as a platform.

One of the limitations of these studies is that they were rather short-term. Therefore, there was a need to conduct other experiments that lasted longer in order to get more accurate results. In this regard, Alemi & Lari [20] attempted to determine whether the use of SMS would help university students increase their vocabulary learning and boost word retention over a period of sixteen weeks. A group of 28 students were assigned to two learning conditions. The SMS group received 320 words via SMS. The control group learned the same list of vocabulary using

a dictionary. The two groups scored equally well on the posttest. However, on the retention test, the SMS group had scored higher than the control group. In other words, the SMS group was able to retain more vocabulary than the dictionary group. These findings corroborate the results reported by previous studies.

In the Saudi context, Fageeh [21] conducted an experiment to examine the effectiveness of WhatsApp as a vocabulary learning tool during one semester. It involved 58 ESL students. The students were divided into two groups. Thirty-one students were placed in the control group, while the remaining were placed in the experimental group. Each week, students of the WhatsApp group were sent a list of words through WhatsApp. Participants' main task was to define the new vocabulary items with the aid of a dictionary app and build a sentence using each target word. Conversely, students in the control group were given the same list of words on paper and had to complete the same homework assignment as the WhatsApp group. The researchers reported that the WhatsApp group had statistically significant higher scores than the paper-based group on the post-tests. None of the previous studies compared the effect of two online platforms namely, WhatsApp and Blackboard on vocabulary learning among ESP students. Blackboard software, a component of Learning Management System, has been adopted by all higher education institutions in Saudi Arabia and in many countries around the world. The current study was conducted during a unique educational situation created by the Covid-19 pandemic, which forced all classes to be held online.

This study seeks to address the following questions:

1. Is there a significant difference between university EFL students' learning of vocabulary items provided via WhatsApp and those learnt using Blackboard?
2. How do learners perceive the use of WhatsApp for learning vocabulary?

3. Method

Participants

The participants in this study were 103 medical students enrolled at first-semester English for specific purposes (ESP) course at a public university in Saudi Arabia. These students achieved an intermediate level of English

following an intensive English course at the preparatory year school. They were all aged between 18 and 20. Because the campus is gender segregated, the female students were taught in separate classes. They were from four sections of the same course. Two sections were randomly assigned to assigned to the experimental group (WhatsApp) with a total of 53 students (26 males and 27 females) and two sections were assigned to the control group (Blackboard) with a total of 55 students (25 males and 30 females). Participants were instructed to build sentences using new vocabulary and submit them to their instructor as an assignment. Students from the experimental group submitted their assignments via WhatsApp, while students from the control group submitted their work via Blackboard. All students owned a mobile device, which allowed them to use the WhatsApp application and log in to Blackboard.

Materials

Vocabulary test: A vocabulary test was developed by the researchers to measure students' knowledge of the target words prior to the onset of the study (pre-test) and after the treatment (post-test). The test consisted of 60 medical English words where the students were asked to provide the Arabic translation of each word item. Each item was worth one point. The total sixty items were taken from the vocabulary lists (120 words) that students were exposed to during the semester. Two ESL professors who had experience in assessment checked the test validity. The test reliability was calculated using Cronbach Alpha. The alpha value was .89. The test length was similar to tests used in previous studies (Bensalem, [19]). The test was piloted with a group of 11 students who took the same English course in a different class. Necessary adjustments were made to the test. **Questionnaire:** Participants of the WhatsApp group completed a questionnaire consisting of six items adopted from Bensalem [19]. The scale had a very good internal reliability (coefficient alpha = .927). Item response was given on a 5-point scale ranging from 1 (strongly disagree), 2 (disagree), 3 (neither agree nor disagree), 4 (agree), to 5 (strongly agree). The survey was in Arabic because students feel more comfortable answering surveys in their native language. A link to a Google form containing the survey was made available to students. Data collection was conducted in the spring semester of 2021. Analyses were performed with the Statistical Package for the Social Sciences (SPSS).

Procedures

Permission to conduct the study was obtained from the Institutional Review Board (IRB) of Northern Border University. Prospective participants were briefed about the purpose of the study. Students granted their consent to participate before the start of the study. Participants took a vocabulary test during the first week of the semester before receiving any vocabulary instruction. All students learnt 120 words over the course of the semester (10 weeks). All classes were held online because of the Covid-19 pandemic. Students had class once a week for two hours. The experimental group received their weekly word list and submitted their assignments via WhatsApp. The instructor of the control group posted the word list on Blackboard and received students' submission in the same platform. Students were instructed to complete all the assignments in order to get full credit for their work. The assignment consisted of writing a sentence of their own using each word from the list they received. After the completion of 10 homework assignments, participants took a vocabulary test. The posttest which was identical to the pretest in terms of format aimed at measuring learners' rate of vocabulary learning. After the completion of the test, participants of the WhatsApp group filled out a questionnaire that measured their perception of learning vocabulary using WhatsApp.

Data Analysis

A quasi-experimental pretest/posttest design was adopted. A t-test was carried out on the data gathered from the pretests and posttests. An initial t-test was performed to determine whether there was a significant difference in means of pretests between the two groups before treatment. Another t-test was carried out after the conclusion of the study to measure any significant difference between the means of the posttest scores of the WhatsApp and Blackboard group.

Descriptive statistics (i.e., means and standard deviations) were used to summarize participants' responses. The questionnaire was pilot tested with a small group of ESP students.

The first research question aims at determining if there is a significant difference between students' learning of vocabulary items provided via WhatsApp and those learnt using Blackboard as measured by a vocabulary test. As

Table I shows, the Blackboard group (M = 24.47, SD = 16.68) outscored the WhatsApp (M = 22.64, SD = 17.30) on the pretest. To determine whether the control and experimental groups differed in their knowledge of the vocabulary items, a t-test was applied to their pretest scores. Levene's Test for Equality of Variances was performed to check the assumption of homogeneity which was satisfied, $F(106) = .07, p = .792$. The independent samples t-test was associated with a statistically non-significant effect, $t(106) = .56, p = .58, d = 0.11$. These findings suggest that the experimental group and control group were not different in their knowledge of the vocabulary items before the experiment.

Table 1. Comparison of Pre-test Scores between WhatsApp Group and Blackboard Group

Group	Test	n	M	SD	T	df	P
WhatsApp	Pretest	53	22.64	17.30	1.31	106	.58
Blackboard	Pretest	55	24.47	16.68			

In order to examine whether there was a significant improvement from pretest to posttest in terms of scores for the experimental group and the control group, a t-test was performed. As Table II indicates, the independent-samples t-test indicated that the Blackboard group (M = 24.91, SD = 15.70) outscored the WhatsApp group (M = 24.53, SD = 17.91); however, the scores were not significantly higher, $t(106) = .19, p < .90, d = .02$. These results suggest the experimental group did not significantly learn more new words than the control group.

Table 2. Comparison of Post-test Scores between WhatsApp Group and Blackboard Group

Group	Test	n	M	SD	T	df	P
WhatsApp	Posttest	53	24.53	17.91	.19	106	.90
Blackboard	Posttest	55	24.91	15.70			

The second research question aimed at gauging students' vocabulary learning experience using WhatsApp. Students' reactions to the use of WhatsApp as a platform to learn new vocabulary are reported in Table III. Results show that the majority of students who participated in the survey had positive attitudes towards the use of WhatsApp in learning vocabulary. In fact, 70.2% of students believed that learning new words using WhatsApp was an interesting method of learning (see Fig.1). Even though 72.4% of students' thought that WhatsApp increased their motivation to complete course assignments (see Fig.2), only 65.9% of the respondents enjoyed learning new vocabulary using that application (see Fig.3). Most students valued the convenience of using WhatsApp. In fact, 72.4% of students reported that WhatsApp motivated them to complete their

vocabulary assignments. The fact that they had the option to work anywhere and at any time was appreciated by participants. Despite the flexibility that Blackboard can offer, 70.3% of students preferred WhatsApp as a better platform to use for future courses (see Fig.4).

Table 3. Descriptive statistics for participants' perception about the use of WhatsApp

Item Statement	Mean	SD
1. Learning new words using WhatsApp is an interesting method of learning.	3.94	.942
2. I feel more motivated to complete my vocabulary assignments using WhatsApp because it is convenient: I can complete it anytime anywhere.	3.94	.919
3. I enjoyed learning new vocabulary using WhatsApp.	3.77	.865
4. If given the choice between using WhatsApp and Blackboard method of learning new words in future courses I would choose using WhatsApp.	3.85	.978
5. Using WhatsApp helped me remember the new words.	3.77	.914
6. Writing sentences including the new words and sending them to the instructor via WhatsApp is a useful activity.	3.96	.977

Survey results Item 2

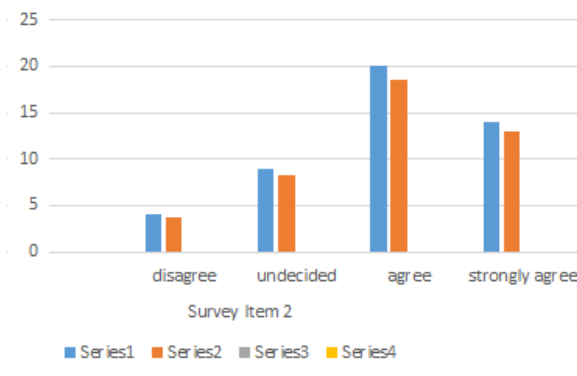


Fig. 2. Students' responses to the first survey item 2

Survey Results Item 3

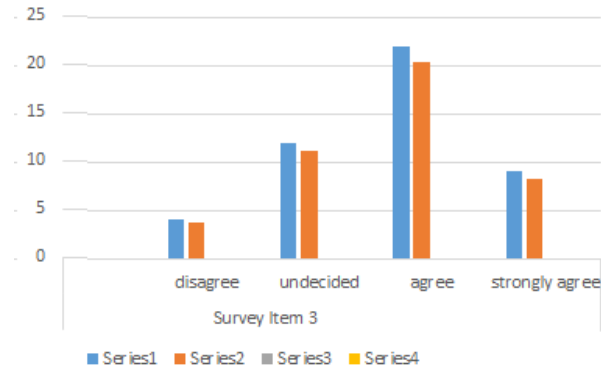


Fig. 3. Students' responses to the first survey item 3

Survey results Item 1

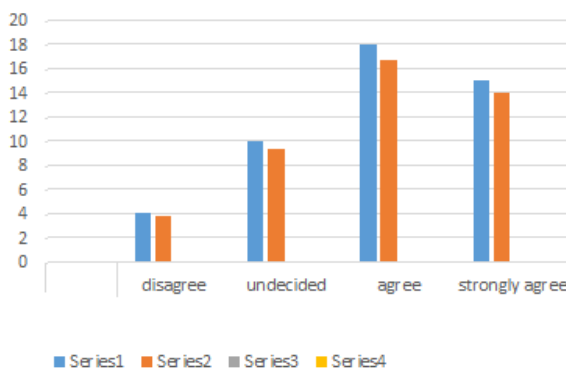


Fig. 1. Students' responses to the first survey item 1

Survey Result Item 4

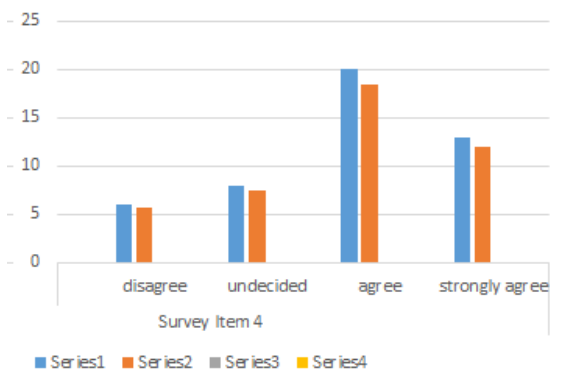


Fig. 4. Students' responses to the first survey item

4. Discussion

The current study did not provide empirical evidence for the efficiency of WhatsApp compared to Blackboard platform. The results are aligned with the outcomes reported by Dehghan, et. al. [22] who found that students did not think WhatsApp played an effective role in enhancing their vocabulary learning. Dehghan [22] argued that their participants were not committed to the assigned tasks, which may have neutralized the impact of WhatsApp as a useful learning tool.

The non-significant difference between the efficiency of using WhatsApp and Blackboard that is reported in this study can be attributed to several factors. First of all, the study was conducted during Covid 19 crisis when all students had to use Blackboard. All classes shifted to online mode. Perhaps the novelty of the learning experience increased students' motivation and increased their involvement in the learning process (Bensalem, [19]). Students had to be logged in for long hours in order to interact with their instructor and classmates. Second, Blackboard gives the instructor the option of keeping track of students' completion of assignments, flag those who did not finish or started working on the assignments may have put students under pressure to take their homework more seriously. Another Blackboard feature that may have increased the motivation of students is the creation of a forum where students can exchange opinions and the instructor can answer queries. Such forum could have created a learning community where students became more engaged in the learning process (Bensalem, [19]), which may have impacted the quality of their submitted assignments (Awada, [23]). Furthermore, Saudi students seem to hold positive perceptions toward the use of Blackboard as documented by previous research (e.g. Fageeh & Mekheimer, [24]); Pusuluri, Mahasneh, & Alsayer, [25])

The current study reports positive perceptions on the part of students regarding the use of WhatsApp. This result is aligned with the findings reported by previous studies (Basal Yilmaz, Tanriverdi & Sari [26]); Alhadhrami, [27]) which found that the use of WhatsApp enhanced students' learning experience. In a similar context, Bensalem [19] found that Saudi EFL students appreciated the use of WhatsApp as a tool to learn new vocabulary since its their mostly used application.

5. Conclusion, Limitations and Potential Future Research

This study sought to examine the impact of WhatsApp on medical ESP students' vocabulary learning compared to the Blackboard platform. Results show that there was no significant difference between the efficiency

of the two platforms. However, students from the experimental group thought that using WhatsApp as a learning tool enhanced their learning experience. The current study is not without limitations. First, the study was conducted during outbreak of Covid-19 which caused a sudden shift from face-to-face to online learning. These special circumstances may have affected students' overall performance and readiness to receive instructions. In other words, the results could have been different if the study was conducted during normal circumstances. Second, the study involved only students from one level (first semester course). Therefore, the results should be taken with caution. Future studies should involve students from different levels in order to be able to generalize the findings. Third, the researchers could not control for individual differences such as high achievers vs. low achievers, students' GPA, linguistic background (knowledge of additional languages), etc. Future studies could compare the performance of students in terms of individual differences and levels of study.

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