

The impact/s of Using Mobile Phone on English Language Vocabulary Retention

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ABSTRACT: The present study has been conducted with two main questions: Does using mobile phones by intermediate EFL learners have a significant effect on the learners' vocabulary retention? And is there a significant difference between male and female intermediate EFL learners in vocabulary retention while using mobile phones? This study was a true experimental research and to do the research 111 students (55 male, 56 female) using the piloted PET test were selected from among 150 students (75 male, 75 female). All the students were studying in grade three of Iranian high school. They were divided into four groups: two experimental groups (one male and one female) and two control groups (one male and one female). To test the two null-hypotheses of the study after pre-test both the experimental and the control groups received the same instruction and then were tested (post-test 1). Then the control groups received paper and pencil activities to do out of the classroom and the experimental groups received the same activities via their mobile phones using SMS. The researcher-made vocabulary test was administered to all groups (post-test 2). After one month using the researcher-made vocabulary test all groups were tested to measure the amount of the vocabulary retention (post-test 3). Results and findings of the study are here: Using mobile phones by intermediate EFL learners have a significant effect on the learners' vocabulary retention and there is no significant difference between male and female intermediate EFL learners in vocabulary retention while using mobile phones.

Keywords: Mobile phones, cell phones, English Language, Vocabulary

INTRODUCTION

According to Virginia French Allen (1983) most of the experienced teachers of English as a second or foreign language know very well how important vocabulary is. Recently researchers have used different technologies such as computers and mobile devices to teach vocabulary. Today, there are estimated to be 1.5 billion mobile phones all around the world, which is three times more than the number of Personal Computers (PCs). A review of mobile learning projects funded by the European Union since 2001 (Pecherzewska and Knot, 2007) confirms that mobile phones are the most frequently used devices by learners. Mobile Assisted Language Learning (MALL) which is the

exciting art of using mobile technology to improve learning experience in language learning differs from Computer Assisted Language Learning (CALL) in its use of personal and portable devices that create new ways of learning. Laurillard (2007) pointed out that a common mobile learning activity could build in more opportunities for digitally-facilitated activities and for ownership and control over what learners do. In general, MALL would be expected to use technologies such as mobile phones, MP3/MP4 players, PDAs, and palmtop computers.

Most of the time learners may learn the vocabulary but forget it easily. Tricia Hedge (2008) believes “despite the traditional neglect, recent years have seen a greater awareness of the questions which need to be addressed with regard to vocabulary learning by researchers, materials designers, and teachers. An agenda of issues might well contain the following: What strategies do learners use to acquire new words or to retain them?” Now the questions are: What are some good ways to find out how much vocabulary students actually have learned? How can we improve the retention of vocabulary? How can we encourage students to take more responsibility for their own vocabulary learning and retaining? Since gender may have some effects on the quality of vocabulary learning and retention, other questions that might arise include: Do male and female learners differ in improving their vocabulary learning and retention? Do male and female learners differ in taking more responsibility for their own vocabulary learning and retaining? This study had two main questions: Does using mobile phones by intermediate EFL learners have a significant effect on the learners' vocabulary retention? And is there a significant difference between male and female intermediate EFL learners in vocabulary retention while using mobile phones? According to the provided research questions the following null- hypotheses were indicated: Using mobile phones by intermediate EFL learners does not have a significant effect on the learners' vocabulary retention, and there is no significant difference between male and female intermediate EFL learners in vocabulary retention while using mobile phones.

METHOD

Participants

In this study, 180 male and female students (105 male, 75 female) participated. The subjects were all third grade high school students in Zanjan province Valiasr and Sheikh Shahabbaddin schools and they were randomly selected. Their age ranged from 16-18 years old. 30 male students participated in piloting a proficiency test (PET) and a researcher-made vocabulary test and after that they were left out of the study. To come up with a homogeneous group of participants, 150 male and female (75 male, 75 female) third grade high school students took the PET proficiency test. The rationale behind the administration of the PET test was to screen the subjects with nearly the same proficiency level and those who scored one standard deviation above and below the mean were selected as the participants of the study which were 111 students (55 male, 56 female). These students were divided into four groups; two control groups (one male and one female) and two experimental groups, again one male and one female.

MATERIALS

One of the instruments which were utilized in this study was the proficiency test of PET (Preliminary English Test). PET is a test for evaluating people who can use everyday written and spoken English at an intermediate level. Because of the time and cost, writing and speaking items were excluded and reading and listening items (35 reading, 25 listening) were utilized by the researcher in the first phase of the pilot study. According to the item analysis 10

items were omitted and the modified test was used in the second phase of the pilot study. Moreover, the internal consistency of the aforementioned test was also calculated using Cronbach's Alpha before and after the item analysis. The results indicated an increase in the internal consistency of the test as the result of discarding the malfunctioning items. This piloted final test including 28 reading and 22 listening items was utilized to select homogeneous subjects in their language proficiency. The second instrument of the study was a researcher-made vocabulary test. The researcher designed 32 vocabulary items according to the material of the study and after two phases of the piloting and item analysis 2 items were omitted and 30 vocabulary items were used as vocabulary test. This test was used as pre-test, post-test 1, post-test 2, and post-test 3 of the study but in order to minimize the effect of memorization the order of the items were changed during the study.

Regarding the material of the study it should be mentioned that lesson five of English Book 3, the book of Iranian third grade high schools in academic year 2008-2009 was chosen. The lesson included different parts such as New Words, Reading, Speak Out, Write It Down, Language Function, and Vocabulary Drill. Because the study was about vocabulary retention, the focus was on the parts which were related to the vocabulary, such as New Words, and Vocabulary Drill, and these parts were taught during two weeks.

Procedure

Before any instruction and grouping, 35 reading and 25 listening items were administered to 30 students for the purpose of first phase of the pilot study. On the basis of their scores, the item analysis was performed and according to the item analysis 10 items were omitted. After the first phase of the pilot study, the revised test including 50 items (28 reading, 22 listening) was administered to the same 30 students for the second phase of the pilot study to be sure about the internal consistency of the modified test. The internal consistency of the aforementioned test was also calculated using Cronbach's Alpha before and after the item analysis. The results indicated an increase in the internal consistency of the test as the result of discarding the malfunctioning items. On the basis of lesson five of English Book 3, 32 multiple-choice vocabulary items, designed by the researcher, were administered to 30 students. According to the item analysis 2 items were omitted. In order to assure the internal consistency of the revised test it was administered to the same 30 students again. This test was presented to 5 English teachers of Iranian high schools to be sure that it measures the vocabulary knowledge of students in grade 3 of high school according to lesson five of English Book 3. The piloted PET was administered to 150 students. Those students whose scores fell one standard deviation above and below the mean in PET test were chosen as homogeneous participants and were randomly assigned to two experimental and two control groups. The researcher-made vocabulary test was administered to all groups of the students to know about their level of vocabulary knowledge. This test was considered as the pre-test of the study. Both experimental and control groups received the same instruction (two hours in a week) during two weeks. After receiving the same instruction, experimental and control groups were tested regarding their vocabulary learning inside the classroom using the researcher-made vocabulary test. This test was considered as post-test1. The researcher checked to see whether all learners in experimental groups had mobile phones or not. Some of them did not have mobile phones; therefore the researcher provided them with some sim-cards and made sure that there was at least one mobile phone in their families. Those learners who did not have mobile phones were asked to insert the provided sim cards in a mobile phone according to the time table of sending SMS provided by the researcher to do the activities. As outside activities control groups received paper and pencil activities and they were asked to do them for the next session. Experimental groups received the same activities via mobile phone by sending and receiving SMS. Definitions and multiple-choice exercises of new

vocabulary of lesson five of English book3 of Iranian high school, provided by the researcher were used as the outside activities. The main point that should be mentioned is that the control groups received the activities on the paper at once but the experimental groups received them via mobile phone within a time duration of one day. For the experimental groups the activities were divided into seven equal parts to be received via SMS everyday up to the next session. They were asked to answer the multiple-choice exercises via SMS. This was done during two weeks. After doing outside activities using the vocabulary test both the experimental and the control groups were tested to measure the amount of their learning out of the classroom. This test was considered as post-test2. The obtained results in pre-test, post-test1, and post-test2 were compared to see if vocabulary learning had taken place. After a period of time (one month) the vocabulary test was administered which was considered as post-test3 to measure the amount of vocabulary retention in the experimental and control groups. Using one-way ANOVA and independent t-test, the gathered raw scores in pre-test, post-test1, pos-test2, and post-test3 were compared to test the null hypotheses of the study.

RESULTS

To test first null-hypothesis of the study, three one-way ANOVA and Scheffe tests as post hoc tests were utilized as inferential statistics. The findings are shown in table 1 (ANOVA) and table 2 (Scheffe). According to the table 1 there were significant differences between groups in post-test1 ($F=26.654$, $\alpha=.05$, sig. =00). Using Scheffe test (table 2) it's clear that in post-test1 there were significant differences between the pre-test and the post-test of the experimental group (Mean Difference= -2.49091 , $\alpha=.05$, sig. =00) and between the pre-test and the post-test of the control group (Mean Difference= -2.82143 , $\alpha=.05$, sig. =00). It means learning took place for both experimental and control group inside the classroom.

Table 1. Inferential statistics: one-way ANOVA in the pre-test, post-test 1, 2, and 3

		Sum of aquares	Df	Ms	F
Post test1	Between Groups	393.806	3	131.269	26.654**
	Within Groups	1073.622	218	4.925	
	Total	1467.428	221		
Post test1	Between Groups	7244.748	3	2414.916	297.368**
	Within Groups	1770.369	218	8.121	
	Total	9015.117	221		
Post test1	Between Groups	4831.147	3	1610.382	226.998**
	Within Groups	1546.551	218	7.094	
	Total	6377.698	221		

The main point in post-test1 is that there was not a significant difference between post-tests of the experimental and control groups (Mean Difference= -0.9351 , $\alpha=.05$, sig. =.997). Therefore, inside the classroom, learning took place for both experimental and control groups at a same level. Before discussing the findings in post-test2 it should be mentioned that in this study post-test1 was considered as pre-test for both post-test2 and post-test3.

In post test2 (table 1), there were significant differences between the groups ($F=297.368$, $\alpha=.05$, sig. =00). According to the table 2 there were significant difference between the pre-test and post-test of the experimental group (Mean Difference= -12.92727 , $\alpha=.05$, sig. =00) and between the pre-test and post-test of the control group (Mean Difference= -9.44643 , $\alpha=.05$, sig. =00). It means that outside the classroom learning took place in both

experimental and control groups. In post-test2 the main point refers to the post-tests of the experimental and control groups where there was a significant difference (Mean Difference= 3.38738, $\alpha=.05$, sig. =00), which means vocabulary learning in the experimental group that used mobile phones was better than the control group that used paper and pencil activities.

Table 2. Inferential statistics: Scheffe test in the pre-test, post-test 1, 2, and 3

Group I	Group J	Mean Difference (I-J)	Std. Error	Sig.	95%Confidence Interval		
					Lower Bound	Upper Bound	
Post-test1	Experimental pre-test	Experimental post-test	-2.49091	.42319	.000	-3.6832	-1.2986
		Control pre-test	.23701	.42129	.957	-.95	1.4240
	Control pre-test	Control post-test	-2.82143	.41939	.000	-4.0030	-1.6398
	Experimental post-test	Control post-test	-.09351	.42129	.997	-1.2805	1.0935
Post-test2	Experimental pre-test	Experimental post-test	-12.92727	.54342	.000	-14.4583	-11.3962
		Control pre-test	-0.9351	.54099	.999	-1.6177	1.4307
	Control pre-test	Control post-test	-9.44643	.53855	.000	-10.9638	-7.9291
	Experimental post-test	Control post-test	3.38734	.54099	.000	1.8631	4.9116
Post-test3	Experimental post-test	Control post-test	5.33994	.50564	.000	3.9153	6.7645

In post-test3 (table 1) which was the retention test, there were significant differences between the groups ($F=226.998$, $\alpha=.05$, sig. =00). According to the table 2 there was a significant difference between the post-tests of the experimental and control groups (Mean Difference= 5.33994, $\alpha=.05$, sig. =00). It means that vocabulary retention in the experimental group was better than that in the control group. Therefore, the first null-hypothesis of the study was rejected.

To test the second null-hypothesis of the study independent t-test was used to compare the means of the male and female learners in experimental group to see whether there was any significant difference between male and female learners vocabulary retention when they used mobile phones or not. As table 3, shows in post-test2 there was not a significant difference between male and female learners' means ($t=.162$, $df=53$, sig. (2-tailed) =.872, $\alpha=.05$). It means that there was not a significant difference between male and female learners' learning out of the classroom, using mobile phones.

In post-test3 (table 3), there was not a significant difference between male and female learners' means ($t=.228$, $df=53$, sig. (2-tailed)=.820, $\alpha=.05$). It means that there was not a significant difference between male and female learners' vocabulary retention, using mobile phones. Therefore, the second null-hypothesis of the study was not rejected.

Table 3. Independent t-test of male and female learners in the experimental group in the Post-test2 and3

		Levene's test for equality of variances		t-test for equality of variance				
		F	Sig.	t	df	Sig. (2-tailed)	95% confidence interval of the difference	
							Lower	Upper
Post-test2	Equal variance assumed	.035	.852	.162	53	.872	-1.11323	1.30899
	Equal variance not assumed	.		.162	52.990	.872	-1.11271	1.30847
Post-test3	Equal variance assumed	.086	.771	.228	53	.820	-1.14379	1.43744
	Equal variance not assumed			.228	52.63	.821	-1.14666	1.44031

DISCUSSION

Thornton and Houser (2003; 2005) completed several projects using mobile phones to teach English at a Japanese University. One of them focused on providing vocabulary instruction by SMS. The results indicated that SMS students, learned over twice the number vocabulary words as the web students who received materials through e-mail, and that SMS students improved their scores by nearly twice as much as students who had received their lessons on paper. Most of the subjects preferred SMS instruction and they wished to continue such lessons.

Levy and Kennedy (2005) arranged a similar program and got similar results in Australia by sending vocabulary and idioms, definitions, and example sentences via SMS in a scheduled pattern of delivery and requesting feedback in the form of quizzes and follow up questions.

BBC Bite-size (2004) is an initiative to provide receiving material via mobile phones using SMS or Java game. This initiative is running since 2003 and has proved to be very popular in learning and reviewing materials.

This study proved that using mobile phones had a significant effect on not only vocabulary learning but also vocabulary retention of Iranian intermediate EFL learners although there was not a significant difference between male and female learners in the vocabulary learning and retention while using mobile phones.

Concentration on features of the new word and its text environment is supposed to facilitate retention, and learning in context depends on repeating, re-cycling, and re-presenting of the vocabulary by teacher and at the same time on re-noticing of them by the learner. In order for a meaningful re-cycling to take place a large amount of vocabulary has to be encountered again and again which needs a large amount of time. For instance, 36 hours of exposure to the target language during one semester in Iranian high schools is very limited and inadequate for re-cycling. According to Thornton and Houser (2003) mobile phones tiny screen sizes were considered "unsuitable for learning but effective for review and practice". Therefore, mobile phones can be used as an effective tool for re-cycling a large amount of the materials.

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