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The Effect of Short Message Service (SMS) on Learning Phrasal Verbs by Iranian EFL Learners

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Abstract

Despite the enormous potential of mobile assisted language learning (MALL) in teaching and learning foreign languages, no serious attention has been paid to develop this phase of education at schools and universities in Iran. This study aimed at investigating the effectiveness of SMS as a subset of MALL on learning phrasal verbs among university students in Iran. Also, the role of gender in learning phrasal verbs by SMS was investigated. A group of 75 students were selected from 90 students who were studying different engineering fields at Arak University of Technology. They were assigned randomly into two experimental and control groups. During the study which lasted 25 days, participants in control group received 25 phrasal verbs in a booklet and participants in experimental group received 25 phrasal verbs via SMS. The pre- and post-test scores of two groups were compared using ANCOVA. The results of data analysis showed that experimental group outperformed control group. But there was no relationship between gender and learning phrasal verbs.

Key words: language learning, mobile assisted language learning (MALL), short message service (SMS), phrasal verbs, gender

Introduction

In 2001, Marc Prensky warned teachers, "Our students have changed radically. Today's students are no longer the people our educational system was designed to teach" (p.1). He intended to describe how these "digital natives" are exposed to more gadgets, tools and technology than was ever thought possible. This has a deep effect on the ways through which

children learn. They are more engaged in learning when using the latest technological gadgets, because it is what they are most used to interacting with. "Students do not just want mobile learning; they need it" (Wylie, 2010).

In recent decades, we have witnessed a slow shift in the trends of language learning theories from behaviorist to communicative, contextualized and constructivist approaches (Chuo 2004). The progress in Computer-assisted language learning (CALL) and mobile assisted language learning (MALL) balances these shifts. While the behaviorists focused on vocabulary acquisition and grammar drilling, those embracing the communicative use of technology stressed the use of language in simulations and text reconstruction (Warschauer& Healey 1998).With the increasing interest in comprising authentic learning and mobile-assisted language learning (MALL) into the area of language learning (e.g. Goodman & Goodman 1990; Hobbs 2001), it is expected that the emerging of CALL and mobile learning can become a suitable solution to combine learners' learning environment into their real-life contexts.

Popularity of English in Iran's Current Educational System

In Iran's current educational system, English is mainly considered to be the first foreign language (Kassaian & Chalak, 2010). English is taught at different levels in educational systems in Iran, varying from primary schools to high school as well as in private language schools. Therefore, knowing and learning English has increasingly become more common and more popular, particularly among high school and university students.

Importance of Phrasal Verbs

One of the most commonly overlooked aspects of the English language is also one of the most important aspects: Phrasal Verbs.

Phrasal verbs are really important for EFL Learners to study because they are used all the time by native English speakers, and are a key factor in speaking "natural" English. Despite the importance of phrasal verbs in learning English, no serious attention has been taken to learning them in language textbooks at universities in Iran.

Usefulness of SMS in Language Learning/Teaching

On the other hand, Technology has been regarded as a beneficial and effective teaching aid which would offer a number of affordances and merits for both teachers and students.
One of the most useful features of a mobile phone is SMS (Short Message Service). Via SMS, we can provide a list of words with their meaning in English, synonyms and antonyms, as well as examples of application of these words in different sentences. Similarly, the use of SMS in terms of education provides the opportunity to train at a specified time intervals and limited quantities.

In Iran there are only two hours per week for the English class in most universities, so the English class becomes the only time to use English and learners face the challenge of lacking exposure to English. Because of class time constraint and the importance of phrasal verbs, most of reinforcement and study is the responsibility of students outside the classroom. Teachers should find ways to promote their students to use English anytime anywhere. With that in mind, the researcher examined the effectiveness of using SMS as a replacement of traditional methods in learning phrasal verbs by Iranian EFL students.

Review of Literature

This idea of using a mobile phone as a support tool for working alone on assigned tasks is supported by researchers such as, Lu (2008), Kennedy and Levy (2008), and Cavus and Ibrahim (2009). Some researchers believe that mobile technology can help extend learners' opportunities in meaningful ways. Thornton and Houser (2005) state that:

> "The teacher must make difficult choices about how to use that limited class time to promote language learning. Since foreign language students usually have opportunities to speak and hear the target language in the classroom, it makes sense to use as much class time as possible in communication activities. This means that other kinds of practice and exposure must be provided in other ways" (p.218).

From a pedagogical pint of view, Kukulska-Hulme and Shield (2007) argue that activities that emphasize on mobility and portability which are considered as the principle and base for

using mobile technologies are not as regular as one might hope, and although the "anywhere" factor is often not a matter, the anytime part is, where learners are sent messages by email or SMS at either fixed times, or times that is suitable for the teacher, a tendency which seems to defeat the purpose of using mobile technologies at all (Derakhshan & Khodabakhshzadeh, 2011).

So (2009) states that "the most ubiquitous and stable technologies, namely Short Message Service (SMS) texting or cellular phones, have great potential in education". He also believes that SMS is the most reliable type of communication on mobile phones today, because if the phone is powered off or out of range, messages are stored in the network servers and delivered to our phone as soon as it is again available.

Hayati, Jalalifar and Mashhadi (2011) studied idioms among other language components, to be taught via mobile phone's short text messages. They argued if there were any significant differences in students' learning of idioms via SMS vis-à-vis two other methods of delivery, i.e., contextualized learning and self-study approach and how learners perceived the use of mobile phone's SMS for learning idioms. The results of the study were suggestive that SMS, as the most user-ready and cost effective function of mobile phones, could be regarded as a viable medium for teaching and learning English idioms.

Mahmoud (2013) examined the effect of using English SMS on the development of the foundation year students' speaking and writing skills at King Abdulaziz University (KAU). Findings showed that students who practiced SMS with their teacher noticeably improved their writing and speaking performance.

According to these cases, this study tried to investigate the effectiveness of SMS as one of the most accessible and the cheapest facilities of mobile phones on students' learning phrasal verbs according to their gender.

To gain this aim, the researcher postulated these hypotheses:

1. Using SMS does not have any effect on learning phrasal verbs by Iranian EFL learners.

2. There is no relationship between gender and learning phrasal verbs by SMS.

Methodology

Participants

The participants in this study were 75 students from Arak University of Technology. They were selected from among 90 students studying various engineering fields. 24 participants were female and 51 participants were male. Their ages ranged from 18 to 22 years old and all were native speakers of Persian. Having taken the Nelson as proficiency test, they were divided randomly to two groups. 38 participants including 26 male and 12 female were assigned to experimental group and 37 participants including 25 male and 12 female were assigned to control group. The homogeneity of both groups was examined by using unpaired T-test. The participants in experimental group received 54 SMS during 25 days including 25 phrasal verbs, meaning and some related examples. The SMS they received every day included one phrasal verb, its meaning and 2 or 3 related examples. The participants in control group received a booklet whose content was the same as SMS. Participants in control group were asked to study just one phrasal verb and its attachments daily.

Materials

To collect the required data, several instruments were employed in this study, including:

1. Nelson test: In order to make sure that all participants were homogenous and truly at the same level of language proficiency, the Nelson test (version 100A) developed by Fowler & Coe (1976) was administered.
2. Phrasal verb test: In order to assess the participants' level of achievement through the study, an English phrasal verb test was developed by the researcher including 25 multiple choice items of phrasal verbs. In the preparation of questions researcher got help from different websites such as, English club, stuff.co.uk, ecenglish.com, english-test.net, and aj.cz. The reliability of test was estimated at 0.868.
3. Booklet: Participants in this study were divided randomly into two experimental and control groups. The participants in control group received treatment in form of a booklet. The booklet that was prepared by researcher included 25 phrasal verbs with their

meaning and some related examples. In the preparation of content, researcher got help from different websites such as, English club, stuff.co.uk, ecenglish.com, english-test.net, aj.cz , as well as two online dictionaries namely, Merriam-Webster and Glosbe. During the process of selecting and gathering phrasal verbs, researcher took into consideration selected phrasal verbs which were functional and not very difficult or out-of-date.

4. Short Message Service (SMS): Participants in experimental group received treatment in form of SMS. The content of SMS was the same as booklet, but the way of receiving SMS was totally different.

Procedure

In the process of carrying out the study, researcher took the following procedure to achieve the objective of the current study.

At the first step of the research, to ensure the homogeneity of participants at the outset of the study, a Nelson Test was administered. Having analyzed data, the researcher selected 75 students (N=75), including 24 females and 51 males. They were randomly assigned into two experimental (N=38) and control (N=37) groups. In the next step the homogeneity of two groups were investigated using unpaired T-test. The P-value was estimated at 0.34, showing that there was no significant difference between two groups' performance in their proficiency test.

In the next phase of the study, the participants in both groups took a pre-test. The aim of pre-test was to assay participants' knowledge of phrasal verbs before treatment. To gain this aim, a test consisting of 25 multiple choice items of phrasal verbs was administered. Participants had sufficient time to answer items. Participants in experimental group were asked to write their mobile number on top of the answer sheet.

Then participants in control group took a booklet containing 25 phrasal verbs, their definition and examples. They were asked to read just one item on a day. Participants in experimental group took phrasal verbs through SMS. Depending on the length of the items, they received each phrasal verb by 2 or 3 SMS.

Having finished the treatment, which lasted for 25 days, students in both group participated in post-test. Since, the gap between tests was long enough, the post-test was the same as pre-test. In order to answer the research questions and test out the null hypotheses, some statistical data analysis was done using statistical software, SPSS.

Results and Discussion

Several statistical analyses were conducted to answer and test the research questions and hypotheses designed for this study.

1. Results of Nelson Test as the Homogenizing Instruments

Table 1

Results of Descriptive Statistics for Nelson as Homogenizing Test

Test	Mean	SD	N
Nelson	30.24	4.20	75

As the result in table 1 shows, the mean is 30.24 and standard deviation is 4.20. So, only participants (75) whose scores were between 26.04 and 34.44 were selected to take part in this study.

Table 2

Results of Descriptive Statistics of Experimental and Control Groups

Groups	N	Mean	SD
SMS (Exp.)	38	29.05	8.817
Booklet (Cont.)	37	30.86	7.399

However, to make sure that participants (N=75) in control group (N=37) and experimental group (N=38) were homogeneous an unpaired T-test was performed.

Table 3

Results of Unpaired Samples T-test Analysis for Nelson as Homogenizing Test

Groups	N	Mean	SD	T	df	*p*
SMS (Exp.)	38	29.05	8.817	0.95	73	0.34
Booklet (Cont.)	37	30.86	7.399			

As the results of table 3 shows, [t (73) = 0.95, p= 0.34 (two-tailed)] between control [(m=30.86, SD=7.39)] and experimental group [(m=29.05, SD=8.817)] by conventional criteria, this difference is not considered to be statistically significant and it can be inferred that they were completely homogenous (p>0.05).

2. Results of Phrasal Verb Test (Pre-test and Post-test)

ANCOVA is a statistical method that is used in comparing groups with pre-test and post-test design. ANCOVA is usually used in pre-test post-test designs especially when participants are randomly assigned in experimental and control groups. ANCOVA assumes that variance of the dependent variable is equal across groups .The Levene's test can be used to verify that assumption.

Table 4

Results of Levene's Test of Equality of Error Variances

Dependent Variable: Post-test

F	df1	df2	Sig.
0.853	3	72	0.469

a. Design: Intercept+ pre-test+ group+ sex+ group

As seen above *p*= 0.469, so the ANCOVA's assumption is accepted and it can be said that variances are homogenous.

Table 5

Results of Descriptive Statistics for Pre-test and Post-test of Experimental and Control Groups

Group			Pre-test	Post-test
SMS	N	Valid	38	38
	Mean		11.46	15.23
	Std.Deviation		4.376	5.173
Booklet	N		37	37
	Mean		10.03	11.81
	Std.Deviation		3.555	4.684

The results of descriptive statistics show that both groups outperformed in post-test. But experimental group have higher mean scores than control group in post-test.

Table 6 shows the results of descriptive statistics for pre-test and post-test of control and experimental groups with regard to gender.

Table 6

Results of Descriptive Statistic Regarding Gender for Pre-test and Post-test of Experimental and Control Groups

Group	Gender		Pre-test	Post-test
SMS	Boy	N	26	26

		Mean	11.04	14.85
		Std.Deviation	4.024	5.566
		Mode	9[a]	10[a]
		Minimum	4	1
		Maximum	19	25
SMS	Girl			
		N	12	12
		Mean	12.42	16.08
		Std.Deviation	5.143	4.252
		Mode	6[a]	16[a]
		Minimum	4	7
		Maximum	20	21
Booklet	Boy			
		N	25	25
		Mean	9.80	11.56
		Std.Deviation	3.764	5.091
		Mode	7	10
		Minimum	5	1
		Maximum	17	20
Booklet	Girl			

	N	12	12
	Mean	10.50	12.33
	Std.Deviation	3.177	3.846
	Mode	11	9
	Minimum	5	7
	Maximum	18	20

a. Multiple modes exist. The smallest value is shown.

As shown in table 6 the results of post-test in experimental group include for boys (M=14.85, SD=5.566) and for girls (M=16.08, SD=4.252). The obtained results of post-test in control group for boys include (M=11.56, SD=5.091) and for girls include (M=12.33, SD=3.846). Results show that post-test scores of experimental group are higher than control group in both genders.

The following table shows the results of descriptive statistic of post-test for control and experimental groups regarding gender in terms of mean and standard deviation. As seen in table 7, in experimental group both genders have higher mean scores than control group.

Table 7

Results of Descriptive Statistics for Post-test of Experimental and Control Group Regarding Gender

Group	Gender	Mean	Std. Deviation	N
SMS	Boy	14.85	5.566	26
	Girl	16.08	4.252	12
	Total	15.23	5.173	38
Booklet	Boy	11.56	5.091	25
	Girl	12.33	3.846	12

	Total	11.81	4.684	37
Total	Boy	13.27	5.545	51
	Girl	14.21	4.403	24
	Total	13.57	5.201	75

In order to test the null hypotheses, tests of between subjects effect was conducted. The following table serves two purposes. First, it was used to test if there was any linear relationship (significance difference) between the use of SMS and learning phrasal verbs. And second, if there was any linear (significance) relationship between gender and learning phrasal verbs by using SMS.

Table 8

Tests of Between-Subjects Effects

Dependent Variable: Post-test

source	Type III sum of squares	df	Mean square	F	Sig	Partial Eta Squared	Noncent parameter	Observed Power[a]
Corrected model	1031.262[b]	4	257.816	18.352	.000	0.508	73.410	1.000
Intercept	185.538	1	185.538	13.207	.001	.157	13.207	.948
Pre-test	791.742	1	791.742	56.360	.000	.443	56.360	1.000
Group	78.136	1	78.136	5.562	0.021	0.073	5.562	0.643
Gender	.337	1	.337	.024	0.877	.000	.024	.053
Group* Gender	0.043	1	0.043	0.003	0.956	0.000	0.003	0.050

Error	997.409	71	14.048
Total	16015.000	76	
Corrected Total	2028.671	75	

a. Computed using alpha=0.5

b. R squared= 0.508 (Adjusted R squared=0.481)

As table 8 indicates, the results show that: F (1, 71) = 5.562, p=0.021. So there is a significant effect of using SMS on learning Phrasal verbs after controlling for the effect of pre-test scores. So, the first null hypothesis was rejected.

As seen in table 10, after controlling the effect of pre-test scores, the following results were obtained. F (1, 71) = 0.003, *p*=0.956. So, the result does not support the effect of gender on learning phrasal verbs by using SMS. Therefore, the second null hypothesis was accepted.

Using ANCOVA and T-test to analyze the obtained data indicated that there was significant effect of using SMS on learning phrasal verbs. So, the first null hypothesis of this study was rejected. In addition, data analysis regarding the role of gender in learning phrasal verbs by using SMS revealed that there was no significant interaction between gender and learning phrasal verbs toward learning English. So, the second null hypothesis was accepted.

The results of this study are in line with the research undertaken by Lu (2008). He examined the effectiveness of SMS vocabulary lessons of limited lexical information on the small screen of mobile phones. Students recognized more vocabulary during the post-test after reading the regular and brief SMS lessons than they did after reading the relatively more detailed print material.

The findings of the present study are partially in line with the findings of study was done by Thornton and Houser (2002; 2003; 2005). They developed several innovative projects

providing vocabulary instruction by SMS, paper and web. The results indicated that SMS students learned over twice the number of vocabulary words as the web students, and that SMS students improved their scores by nearly twice as much as students who had received their lessons on paper.

Conclusion

Due to the growing role of language learning in today's life, research into the effectiveness of various types of language learning methods as well as instructional techniques has been of considerable value to second/foreign language research and pedagogy. One such way is through an interaction between teacher and students via SMS. SMS can be applied in language teaching and learning as a complementary teaching aid since language learning can be improved by its portability, immediacy, novelty, motivation, and the spacing effect it generates (Thornton &Houser, 2005).

This study aimed to explore the effectiveness of using SMS as a replacement of traditional methods in learning phrasal verbs by Iranian EFL students. Also, the present study aimed to discover the role of gender in learning phrasal verbs by using SMS.

So, this study was carried out with the purpose of addressing the following questions:

1. Does using SMS have any effect on learning phrasal verbs by Iranian EFL learners?
2. Is there any relationship between gender and learning phrasal verbs by SMS?

The result of this study revealed that using SMS has a significant effect on learning phrasal verbs because the participants in experimental (SMS) group outperformed those in control (booklet) group in post-test. It can be concluded that student learning is flexible in terms of time and/or place by using SMS. As the findings of this study demonstrated, SMS can facilitate different forms of language learning. Since SMS can be easily sent at predetermined times and intervals, they can be stored systematically and are available for later retrievals. In other words, Language learning by SMS can provide conditions for students' regular study at home. Since, regular study in its turn leads to more exposure to the target words and more

vocabulary items gains than detailed presentation, it is the important factor in success in language learning. The results suggest that SMS Learning did contribute to improving learning.

According to the findings of this study, there was no significant relationship between participants' gender and learning phrasal verbs by using SMS.

Pedagogical Implication

The findings of this study might benefit those involved in the issue of language teaching and learning, including teachers, students, managers of language institutes, language textbook authors and language materials and educational aids suppliers. The findings of this study may have some insights for English teachers and educators. One of the effective implementation of mobile learning requires a pedagogical approach, identification of specific learning needs and goals. So, the teachers should be directly involved in decisions on planning and curriculum use (Perry, 2003). SMS can be a complementary teaching material that offers multiple learning opportunities. With support from technological advancement, other forms of SMS application in second/foreign language acquisition are around the corner. For example, the following are some applications: quizzes via SMS marked with immediate feedback, classroom monitoring and control using SMS, a classroom response system using SMS as a tool for conducting language activities, learning projects integrated with more 'game' elements (Naismith et al. 2005).

Another point is that future technology developers should find ways to take advantages of m-learning to increase the students' exposure to the target language and ensure that this new learning is highly situated, personal, collaborative, and long term. Educators will need to adapt from a role as transmitters of knowledge to guiders of learning resources.

Finally, the anytime, anywhere capabilities of mobile devices encourage learning experience outside formal education. It should be mentioned that the beauty of this system is that the learning process takes place away from the classroom environment while the students are involved with their everyday activities. In case SMS is used properly, teachers can devote the constrained class time to other productive skills such as listening or writing.

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