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Learning English Phrasal Verbs Through Interactive Text-Messaging (Belajar Kata Kerja Bahasa Inggeris Melalui Pesanan Teks Interaktif)

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ABSTRACT

This study was carried out to investigate the effectiveness of interactive text-messaging in learning English phrasal verbs by Iranian EFL learners. The study employed a pre-test, post-test quasi-experimental design with two experimental groups exposed to two learning conditions (paper-based and SMS-based) and a control group. Forty-eight EFL learners were assigned into two experimental and one control group(s). The participants in each experimental group were divided into four smaller groups and performed an interactive task (i.e., expand the story) in two different ways. The results indicated that although both groups improved significantly from pre-test to post-test and did significantly better than their counterparts in the control group, the SMS-based group outperformed the paper-based group in learning English phrasal verbs. Furthermore, the results of the delayed post-test showed that the participants in the SMS-based group had significantly more vocabulary gains than their paper-based counterparts.

Keywords: Mobile-learning, short message service (sms), interactive text-messaging, English phrasal verbs

ABSTRAK

Kajian ini telah dijalankan untuk mengkaji keberkesanan pesanan teks interaktif dalam mempelajari kata kerja Bahasa Inggeris oleh pelajar Iran yang mempelajari Bahasa Inggeris sebagai bahasa asing. Kajian ini menggunakan ujian pra, ujian pasca, reka bentuk kuasi-eksperimen dengan dua kumpulan eksperimen didedahkan dengan dua syarat pembelajaran (berasaskan kertas dan berasaskan SMS) dan kumpulan kawalan. Empat puluh lapan pelajar EFL Iran telah diberikan kepada dua eksperimen dan satu kumpulan kawalan (s). Para peserta dalam setiap kumpulan eksperimen telah dibahagikan kepada empat kumpulan kecil dan dilaksanakan satu tugas yang interaktif (iaitu, mengembangkan cerita) dalam dua cara yang berbeza. Keputusan menunjukkan bahawa walaupun kedua-dua kumpulan meningkat dengan ketara daripada pra-ujian untuk ujian pasca dan melakukan jauh lebih baik daripada rakan-rakan mereka dalam kumpulan kawalan. Selain itu, kumpulan berasaskan SMS mengatasi kumpulan berasaskan kertas ketika belajar kata kerja Bahasa Inggeris. Sementara itu, keputusan ditangguhkan selepas ujian menunjukkan bahawa peserta dalam kumpulan berasaskan SMS yang mempunyai kelebihan perbendaharaan kata berbanding rakan-rakan mereka yang belajar berasaskan kertas sahaja..

Kata kunci: Pembelajaran mobile, sistem pesanan ringkas, pesanan teks interaktif, kata kerja Bahasa Inggeris

INTRODUCTION

The rapid increase in the use of technologies has created new opportunities to enhance the quality of education and has led to changes in the ways learners may process information. Many scholars have stated that the mobile phones can support classroom-based learning and transform it into learning anytime and anywhere (Kukulska-Hulme 2006; Lee 2005). Because of wide utilization and popularity of mobile devices among new generation of EFL learners, the integration of mobile devices in the educational context can be reasonable. According to Shahreza (2006), in today's world, one out of six persons has a mobile phone. Since young learners work so often with others on mobile phones, it is important to know how this interaction influences their learning. Furthermore, as Ishak et al. (2002) have argued, in traditional teaching method, the interaction between learners and knowledge disseminators runs only during a

limited time allotted to a particular course; on the contrary, "for electronic classroom or computer-assisted classroom, the interaction expands beyond time and geographical boundaries".

By penetration of mobile devices into teaching another language, a new way of learning was brought into existence, namely, mobile-learning (m-learning). M-learning can provide access to language learning materials, and can facilitate learners' communication with their teachers and peers at anytime and anywhere (Kukulska-Hulme 2006). According to Clarke et al. (2008), mobile phones, due to their distinctive characteristics such as ease of use and ubiquitous nature can be appropriate materials for educational purposes. A range of devices and applications have been introduced in m-learning, such as mp3 players, PDA, and short message service (SMS), which can support students' language learning. As Moura and Carvalho (2010) pointed out, SMS application

has superiority over other functions of mobile phone for educational purposes due to its ease of use and learners' familiarity with this technology.

Considering the advent of new technologies and young generation's eagerness to apply them in their interaction, it is interesting to learn if such applications can facilitate learning process in the educational settings. Learning vocabulary including phrasal verbs, as one of the fundamental aspects of language learning, is often delivered in conventional ways such as providing lists of abstract definitions in de-contextualized sentences. Furthermore, theories of SLA have emphasized the importance of negotiation of meaning in L2 development (Long, 1985). Since the negotiation of meaning and interactivity can result in more active learning (Markett et al. 2006), this study employs an interactive mode of sending messages to investigate the effect of SMS technology as a supplementary tool on students' learning English phrasal verbs outside the classroom.

REVIEW OF LITERATURE

Over the past few years, the ways young people process information have been influenced by the rapid development in technology and multimedia. Young learners are distinctively different from their previous generations owing to the fact that they have been in exposure of technology and multimedia (Mellow 2005). Several studies have been conducted on mobile-assisted language learning, which indicate the application of m-learning for several pedagogical purposes. In order to shed light on the effectiveness of mobile technology in pedagogy, some studies are briefly reviewed below.

Thornton and Houser (2005) conducted a study in a university setting which involved 44 EFL Japanese learners. In an attempt to teach English through mobile phone's e-mail (push mode), they sent one hundred-word English email vocabulary lessons along with their Japanese equivalents to the students' mobile phones three times a day. The students' progress was assessed through a post-study quiz. The results demonstrated that the students participating in mobile phone's e-mail vocabulary lessons outperformed their counterparts on paper-based vocabulary learning.

Cavus and Ibrahim (2009) explored the possibility of application of mobile devices to teach new technical words to freshman undergraduate students to support their normal English language lectures. During the experiment, the participants were divided into three groups (A, B and C) and text messages were sent to them by Mobile Learning Tool. At the end of the experiment, the participants were asked to fill out a questionnaire on their attitudes towards this kind of learning. In order to determine the success rate of students in learning new words, a pre-test and post-test were carried out. The results showed the significant success rate of the students

from pre-test to post-test. The results of the questionnaire also suggested the participants' positive attitude towards SMS-based instruction, which can go further and be bidirectional so that students can respond to questions and receive feedback.

The superiority of teaching English idioms through SMS over contextual learning and self-study was also confirmed by a study by Hayati, Jalilifar and Mashhadi (2013). They examined three types of instruction including SMS, contextual learning and self-study for teaching idioms. Comparison of the pre-test and post-test scores showed that the mean scores of the three groups were significantly different from each other. A survey was also conducted to determine the students' attitudes toward learning idioms through SMS, the results of which showed that 80% of the students considered SMS as a valuable tool for learning idioms. The finding showed that SMS can be considered as a proper tool for assessment and provision of feedback for students.

Saran, Seferoglu and Cagiltay (2009) examined the effect of mobile phones on improving L2 learners' pronunciation of English words. Three groups of learners at elementary level were instructed through three different media: mobile phones, printed handouts and web pages. All groups received identical materials (i.e., 80 English words) as supplementary data. The results indicated that the students receiving MMS studied the material more often than the students receiving the same material on paper or on the web.

In the context of Bangladesh, where learning English is the only medium through which the access to modern world becomes possible, Begum (2011) focused on the use of mobile phone as an instructional tool in undergraduate EFL classroom. During the study, EFL teachers sent SMS to students as a means of instruction for teaching the appropriate use of English preposition. The results demonstrated the potential use of SMS as an instructional tool out of classroom. Kert (2011) investigated the effect of SMS support in programming education on students' learning levels. Forty students were randomly assigned into two experimental ($n = 20$) and control ($n = 20$) groups. During the seven weeks of experiment, 27 SMS messages based on the content of the participants' course were sent to the experimental group. The content of messages was also provided for the control group in a written document. The results showed a significant difference between the post-academic achievements mean scores in favor of the experimental group.

Zhang, Song and Burston (2011) conducted a comparative study of modern educational technologies with traditional use of print materials in order to check which method can considerably enhance students' English vocabulary. The results of the post-test demonstrated that SMS-based group who received a list of vocabulary items ($n = 130$) through SMS did significantly better than paper-based group; however, there was no significant difference between the two

groups in vocabulary retention rates, measured through a delayed-post-test. In the same line, Lu (2008) in her experimental study concluded that although students who received SMS instruction did significantly better than their counterparts in paper-based group in translating English words in immediate post-test, there was no significant difference regarding the vocabulary gains across the two conditions in the delayed post-test.

The increasing popularity of SMS among young Jordanian people as an immediate and convenient communication tool encouraged Gasaymeh and Aldalalah (2013) to investigate the effectiveness of using SMS as a tool to support learners in an introductory programming course. The participants who received the programming content through SMS did significantly better than their counterparts in the control group who did not receive any special instruction.

To sum up, the SMS text-messaging is a popular application among young generation of learners and evidence from previous research confirms the effectiveness of SMS-based learning in learning linguistic features. However, previous research in the field of SLA mostly focused on the push mode of text messaging, that is, sending text messages from the researchers to the participants. This is not in accordance with the contemporary practice in language classrooms. A common teaching strategy in language classrooms is to assign students to work in pairs or in groups to accomplish a task. The use of group work, which produces social and cognitive gains in educational settings, has been supported through substantial body of research (Johnson & Johnson 1990). In the field of second language pedagogy, research findings on group work also support such classroom organization over teacher-fronted classes. Porter (1985), who conducted a review of L2 literature on group-work, reported that group-work provides L2 learners with more opportunities to use the target language and for a greater range of functions in low-anxiety contexts. These studies have highlighted the importance of interaction in learning situations, which made the impetus for this study to explore the benefits of interactive mode of sending SMS to facilitate learning English phrasal verbs in an EFL context. To this end, the current study has focused on the following research questions:

1. Does interactive text-messaging affect the learning of English phrasal verbs by Iranian EFL learners?
2. Which of the two experimental groups (SMS-based or paper-based) receiving text-messaging would progress more in learning English phrasal verbs?
3. Which of the two experimental groups (SMS-based or paper-based)receiving text-messaging would retain the knowledge of the phrasal verbs?

METHODOLOGY

PARTICIPANTS

The initial pool of participants for this study was 67 elementary EFL learners, who were studying English at a private language institute in Sari, Iran. Although their level of language proficiency had already been determined by the institute's placement test, to further ensure their homogeneity, a language proficiency test (Nelson, series 100A) adopted from Fowler and Coe (1979) was administered. After administration of the test, 48 participants whose scores fell one standard deviation above or below the mean were invited to participate in the main study. The participants were male students within the age range of 14 to 19 (average 15.5). They were not randomly assigned into two experimental and one control group(s) with 16 learners in each group. Prior to the study, the participants expressed their willingness to participate in the study by signing the consent forms.

MATERIALS

In order to achieve the objectives of the current study, several instruments were employed. First, in order to determine the effectiveness of the (SMS-based learning & paper-based learning), a test of phrasal verbs consisting of two sections (i.e., cloze and multiple choice test) was administered as the pre-test, post-test and delayed post-test. Using KR-21 formula, the reliability coefficient of the test was estimated to be 0.780. The test items were adapted from Dixon's (2003) "Essential idioms in English, phrasal verbs and collocations" and were piloted with a sample similar to the participants of this study. The test consisted of 10 cloze test items and 30 multiple choice test items corresponding to each linguistic feature targeted in the treatment sessions (Table 4). Forty-five minutes, based on the pilot test, were allotted to complete the test. One point was assigned to each item so the total test score was 40. As for the treatment sessions, we employed a collaborative output task, namely, expand the story. In this task, the students were divided into groups and one member of the group is given the first line of a story. He was asked to continue the story by writing the second sentence then pass the paper to another member. After all members' contribution, the teacher collected their final draft and provided necessary feedback.

PROCEDURE

A Nelson test was administered to 67 students attending three elementary classes in a private language school. Forty-eight subjects whose scores fell one standard deviation above and below the mean were selected. Next, the participants were randomly assigned into two experimental groups (SMS-based and paper-based) and a control group. In order to ensure the reliability of the test

and unfamiliarity of the participants with the phrasal verbs targeted in the study, before administration of the pre-test, it was piloted with ten students at the same proficiency level. The data gathered from the piloting session was analyzed and those items, which were responded by 50 percent of the students, were discarded from the test. As a result, a cloze and a multiple choice test of phrasal verbs, consisting of 40 items were administered to the main participants as the pre-test, post test and delayed post-test, respectively.

Before the treatment, it was checked if all participants in the SMS-based group ($n = 16$) possess a mobile phone and were familiar with SMS technology. In the next step, the participants in the three groups took the pre-test. Then, the paper-based and SMS-based groups separately received a training session on how to perform the task (expand the story) in groups. The paper-based group ($n = 16$) were divided into four smaller groups (A, B, C, and D) with 4 members in each one. Each group received a sheet of paper with 5 phrasal verbs along with their Persian definitions but in Roman alphabet. Then, they were given the first line of a story that included one of the given phrasal verbs. One member in each group was asked to continue the story, write the second sentence, and then pass the paper to another member. After each member's contribution, one of the researchers collected their final writing. Necessary feedback was provided after writing the whole story, that is, the output of each group with necessary corrections in capital letters was returned to the group members.

The same procedure was followed by the participants in the SMS-based group. After receiving five phrasal verbs and the first line of the story, one member (assigned as N1) in each group was asked to continue the story by adding a second sentence using one of the phrasal verbs and then forward the message to his/her group member (assigned as N2) and so on. The last member of the group (N4) sent the story consisting of five sentences to one of the researchers. Finally, the researcher sent the whole story to all members of the group with necessary feedback, i.e., corrections in capital letters. The treatments place twice a week for the duration of four weeks, that is, eight sessions in total (Table 1). After completing the treatment sessions, all groups including the control group took part in the post-test session. In order to check if any of the experimental groups retained the knowledge they obtained, they participated in the delayed-post-test one month later. The design of the study is presented in Table 1.

TABLE 1. Design of the study

Weeks	Activities
Week 1	Training and pre-testing
Weeks 2- 5	8 Treatment-sessions
Week 6	Post-testing
Week 10	Delayed post-test

RESULTS

After marking the three tests (pre-test, post-test, and delayed post-test), the scores were tabulated and subjected to a series of statistical analysis. It should be mentioned that before employing all statistical analysis, the normality of data was checked through Kolmogorov-Smirnov and Shapiro-Wilk tests which demonstrated that all scores enjoyed normal distribution. The mean scores and standard deviations of all groups of learners in the pre-test and post-test sessions are presented in Table 2. While the groups did not differ in their performance during the pretest session ($F = 0.534$; $df = 2$; $p = 0.59$), the two experimental groups performed better than the control group since the post-test means of the SMS-based and paper-based groups were significantly higher than the means of the control group ($p < .05$). However, to determine the significance of these differences, an analysis of variance was conducted. The result of this analysis, presented in Table 3, indicated a significant difference among the three groups in the post-test ($F = 115.23$; $df = 2$; $p = .000$). In fact, despite the fact that the groups' pre-test scores were close to each other, their post-test scores differed significantly from each other. At this point, it was necessary to make multiple comparisons to determine the location of the differences. A summary of this comparison is presented in Table 4.

TABLE 2. Descriptive statistics of all three groups in the pre-test and post-test

	Groups	Mean	N	Std. Deviation	Std. Error Mean
SMS	Pre-test	5.94	16	1.88	.47
	Post-test	23.13	16	4.18	1.04
Paper	Pre-test	5.56	16	1.63	.41
	Post-test	19.88	16	3.20	.80
Control	Pre-test	6.13	16	1.09	.27
	Post-test	6.31	16	2.33	.58

TABLE 3. Analysis of variance results for the post-test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2544.88	2	1272.44	115.23	.000
Within Groups	496.94	45	11.04		
Total	3041.81	47			

$p < .05$

TABLE 4. Multiple comparisons of post-test

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
SMS	Paper	3.25*	1.17	.006*
Paper	Control	13.56*.000*	1.17	.000*
Control	SMS	-16.81*	1.17	.000*

$p < .05$

As shown in Table 4, there was a statistically significant difference between the SMS-based group and the paper-based group ($p = 0.006$). Further comparisons indicated a significant difference between the SMS-based group and the control group ($p = .000$) and between the paper-based group and the control group ($p = .000$). Therefore, the SMS-based group performed significantly better than the paper-based and control groups. Also the paper-based group significantly outperformed the control group.

To examine the long-term effect of the treatments, we compared the mean scores of the two experimental groups from the post-test to the delayed post-test. As illustrated in Table 5, while the paper-based group showed a slight decrease in their performance, the SMS-based group showed a slight increase. To check the differences, two paired samples t-tests were conducted. The results indicated that there was no significant difference between the post-test and delayed-post-test means of the paper-based group ($p = .060$). However, the results of the paired samples t-test for the SMS-based group revealed a significant difference ($p = .023$). In other words, the SMS-based group had not only retained the knowledge of the phrasal verbs after the post-test, but also had improved even further (Table 6). An independent samples t-test was conducted to compare the delayed post-tests gain scores of the SMS-based group with that of the paper-based. The result of this test, as illustrated in Table 7 indicated a significant difference ($p = .003$) between the two groups regarding their performance ($p < .05$) four weeks after the treatment in favor of the SMS-based group.

TABLE 5. Descriptive statistics of paper-based and SMS-based groups on two posttests

		Mean	N	SD	Std. Error Mean
Paper-based	Post-test	19.88	16	3.20	0.80
	Delayed post-test	18.63	16	4.06	1.02
SMS-based	Post-test	23.13	16	4.18	1.04
	Delayed post-test	24.63	16	4.06	1.02

TABLE 6. Paired-samples t-test comparing the post-test and delayed post-tests

	Paired Differences		t	df	Sig. (2-tailed)
	Mean	SD			
Paper-based Post-test– Delayed post-test	1.25	2.46	2.03	15	.060
SMS-based Post-test– Delayed post-test	-1.50	2.37	-2.54	15	.023

DISCUSSION

In this study, the effect of interactive text messaging on learning English phrasal verbs was investigated. The effectiveness of SMS-based learning in comparison with traditional way of learning phrasal verbs was also taken into account. The results show that unlike the control group, both the paper-based and SMS-based groups improved after receiving the treatment since there was a significant difference in favor of both groups' post-test achievement scores. The analysis of the SMS-based participants' scores revealed that they significantly improved from pre-test to post-test. In other words, the use of mobile phones as an instructional tool improved the acquisition of students' vocabulary learning. The results of this study supported the findings of the literature that discussed the potentials of SMS to support students' language learning. For example, Cavus and Ibrahim (2009) presented a study in which SMS was used to support traditional face-to-face learning for English words. The results indicated that SMS can contribute to the success of students in learning new words. Similarly, Hayati et al., (2013) conducted a study in which SMS was used to send English idioms to EFL students. The results showed that students who received instructional content via SMS were more enthusiastic and learned more than their counterparts on paper or contextual groups. In Begum's (2011) study, SMS was used as a means of instruction for teaching appropriate use of English preposition. Based on the research results, he concluded that mobile phone has great potential as an instructional tool.

TABLE 7. Independent-samples t- test comparing the gain scores of the two groups

Gain score	t-Test for Equality of Mean				
	Means Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	2.75	.85	3.220	30.00	.003
Equal variances- not assumed	2.75	.85	3.220	29.95	.003

When the three groups were compared, it was revealed that the participants in the SMS-based group significantly outperformed their counterparts in the other two groups. This finding, which indicates the superiority of SMS-based instruction compared to the paper-based instruction, is compatible with the empirical studies (which ones?) conducted earlier and reported in literature review. Thornton and Houser (2005), Lu (2008), Tabatabaei and Goojani (2012) and Zhang et al. (2011) used mobile phones to teach English vocabulary, and compared paper-based learning with SMS-based learning. Their findings indicated that the participants in SMS based-group significantly outperformed those in the paper-based group. However, the findings of the current study are related to the students' performance in the delayed post-test, which is contradicted with Lu's (2008) and Zhang et al.'s (2011) findings. In these studies, the superiority of SMS group over paper-based group was not retained in the delayed post-test and there was little difference across conditions. In the present study, however, the results of the delayed post-test demonstrated that participants in SMS-based group did 'expand the story' through interactive text-messaging.

Participants not only performed significantly better in the paper-based group, but also improved the knowledge of English phrasal verbs significantly from post-test to delayed post-test. It should be mentioned that we frequently notified both experimental groups to keep their stories at hand and review them whenever they required. The SMS-based group was also requested not to delete their text messages even after the post-test. However, in the previous studies, the participants complained about the limited memory of their mobile phones. Therefore, this finding can be justified by the researchers on the grounds that those students frequently received messages on spaced intervals, maintained, and reviewed their short messages, focused more on the material than their counterparts on the paper-based group.

CONCLUSION

The conclusion is that the use of interactive SMS as a learning support is an effective tool for EFL learners' English phrasal verbs. The results of this study may have several implications for English language teachers and educators. The SMS-text messaging of mobile phones can be considered as a novel instructional tool of great potential owing to its high popularity among young generation. Learners can take advantage of this technology to facilitate their interaction and collaboration in the learning process. Having the content right at EFL learners' fingerprint just one click away means that they learn whenever they are willing despite the constraints of time and place (Ally 2007).

In large classes, some EFL learners are tempted to slip into passivity and there is no production and interaction

chance for every learner; however, learning through SMS can involve learners more actively and interactively in learning process. It can provide opportunities for all EFL learners to produce language and receive immediate feedback. Therefore, considering the large number of mobile phone users and the potential of mobile devices for learning English, teachers can use SMS to support L2/EFL learning. However, several issues need to be considered with respect to the pedagogical use of such available technology. The first one is the cost of sending SMS messages. Students are not expected to bear the cost so in case of integration of mobile technology into teaching English, proper policies should be developed. In the current study, all costs of text-messaging were covered by the researchers. Next, the information and activities delivered through mobile devices should be manageable and suitable for small screen of mobile devices. For example, mobile phones cannot be suitable for activities which demand many interactions between teacher-student and student-student; sometimes conventional teaching tools in traditional classes can be more beneficial than modern ones for teaching some subject matters. Thus, in the SMS-based instruction, teachers should think in advance about the cost, the kind of information and activity and students' willingness.

In this study, a single experiment with a small sample size was conducted to evaluate the applicability of the SMS-based off-campus learning in L2 learning. Future studies can take the effect of other variables (different genders' preferences, age and proficiency levels) into consideration. While the results of this study are promising, much research needs to be conducted to ensure learners' motivation and willingness to learn using this method. Further studies are also suggested to design proper methods to use cell phone as an instructional tool in the classroom. Although doing collaborative learning activity (expand the story task) through interactive SMS has been successful in this study, it may be worth investigating other tasks focusing on the interactional levels of the learners with their teachers through SMS.

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