

SMS blended teaching: Invite wireless technology to class**Azadeh Nemati**

Department of English language teaching, Jahrom branch, Islamic Azad University, Jahrom, Iran.
 # 122, 3rd Avenue (The first twenty-meter), Shahid Kolehdooz Street, Zerehi, Shiraz, Fars Province,
 IRAN, Postal code: 7185683646
 E-mail Address: azadehnematiar@yahoo.com
 Tel: 0098-9171056450

Abstract

The value of deploying new devices to enhance the English level of students, especially in non-English speaking countries seems to be self-evident and unavoidable. One of the frequently used devices is the mobile phone and one important component of teaching English is vocabulary. To determine the effectiveness of mobile phone for teaching, 94 students were in the study. They were randomly divided into control and experimental groups. The control group learned the new vocabulary items in the traditional way while, the experimental group received the learning content through short text messages/SMS blended teaching mode, called SBT by the author, as well as traditional way. Then, both groups were evaluated with two kinds of multiple-choice vocabulary tests, i.e. fill in the blank and identifying the meaning of words. The results of repeated measurement analysed using the ANOVA statistical method revealed that the SBT group performed better than the control group. Also, it was shown that SBT was successful for both types of testing vocabulary.

Keywords: adult classroom, teaching, learning, mobile phone, English language, ESL.

Résumé

L'importance du déploiement de nouveaux outils pour améliorer le niveau de la langue anglaise chez les étudiants, surtout dans les pays où l'Anglais n'est pas une langue parlée, semble tout à fait évidente et inévitable. L'un des outils plus souvent employé est le téléphone mobile et l'élément important pour enseigner l'Anglais est le vocabulaire. Pour vérifier l'efficacité du téléphone mobile comme outil d'enseignement, 94 étudiants ont pris part à cette étude. Ils étaient divisés au hasard en groupes de contrôle et expérimental. Le groupe de contrôle a étudié les nouveaux éléments de vocabulaire d'une manière conventionnelle tandis que le groupe expérimental a reçu ses éléments de vocabulaire à travers une combinaison de méthodes d'enseignement constituée de messages courts/SMS que l'auteur appelle SBT, ainsi que la méthode conventionnelle. Ensuite, les deux groupes ont subi deux types de tests à choix multiple en vocabulaire, c'est-à-dire, remplir l'espace vide et identifier le sens des mots. L'analyse des mesures répétées avec l'aide de l'outil statistique ANOVA a révélé que le groupe SBT a eu une plus meilleure performance que le groupe de contrôle. En plus, il a été démontré que SBT a réussi avec les deux types de tests en vocabulaire.

Mots clés: salle de classe adulte, enseignement, apprentissage, téléphone mobile, langue anglaise, ESL

Introduction

The importance of knowing a foreign language has turned out to be crucial to the development of technology. Learning and teaching a language has always been challenging. In the literature different methods and techniques have been to reach the aim of learning another language. Nowadays, the rigid, old fashion, non active teaching method that is based on, chalks and talks and is teacher-dominated and characterized by lecture-based pedagogy of of the 1970s has been largely replaced more student center classes.(references)

With the advent of information -communication technology the situation has improved for language learners. The pendulum has swung from those traditional methods and resources such as textbooks to computer assisted language learning (CALL), internet based materials and testing as well as e-learning to wireless systems for education, mobile assisted language learning (MALL) and m-learning.

As stated by Powell and Baily (2001) handheld computers are at the forefront of the fourth wave in evolution of educational technology. They defined that the first wave was dominated by large, expensive mainframes which used in education to make administration and managerial easier. The second wave started in the 1970s with the invention of desktop computers or PCs. Schools introduced personal computer literacy courses for the students to learn about the technology and how to use it. The third wave started in the 1990s with the development of internet and World Wide Web. The fourth and the current phase started around 2001 and involved the use of palmtop computers and mobile phones, this phase can be called mobile assisted language learning (MALL).

Definition of mobile assisted language learning (MALL)

Mobile learning can be defined as learning mediated through any mobile devices such as

MP3 players, personal digital assistants (PDA) and mobile phones, devices that are accessible anywhere anytime (Kukulka-Hulme & Shield, 2008). Milard (2003) made a distinction between m-learning and e-learning and defined m-learning as learning supported by digital electronic tools and media while the latter as using mobile devices and wireless transmission.

Laouris & Eteokleous (2011) proposed the following abstract formulation of the definition of my learning.

$$M\text{Learn} = f \{ t, s, LE, c, IT, MM, m \}$$

t = time Whereas t was discontinuous and discrete for previous paradigms of learning (e.g. mainly whenever in classroom), for m-learning time during which mobile learning can take place may be continuous.

s = space In the classroom paradigm, space was simply defined as the classroom and to some extend the learners' home. Now space is not constrained at all and it may even incorporate virtual spaces.

LE = l-environment The learning environment.

c = content. The curriculum, the specific educational themes and chosen topics covered are now structured in a completely different fashion and follow different rules and priorities.

IT= technology This parameter is quite complex. It encompasses all technological aspects and momentary characteristics of both the hand-held device and the surrounding environment (i.e., services available, antennas, repeaters, external devices within reach etc.).

MM = mental. This parameter contains as a conglomerate of the learner's mental abilities, prior knowledge, preferences, motivation, momentary attention etc.

m = method. The "method" is a conglomerate of all parameters related to delivery of and interaction with content. These may include pedagogy, philosophy as well as technical and logistical aspects such as method of presentation (or assessment).

Previous research

M-learning is implemented on palmtop computers or mobile phones (Cavus & Ibrahim, 2009) but it has now essentially become synonymous with mobile phone applications (Burstone, 2012). Nowadays, people have even more than one cell phone. As stated by Basoglu and Akdemir (2010) in a review of European Union about mobile learning, it is stated that mobile phones are the most frequently used devices in the projects followed by PDAs. For education the easiest way of utilizing mobile phones for the students is using the dictionary installed on it.

One frequent use of mobile phones is sending and receiving messages through the Short Message Services (SMS). The United Nations reported that in 2010 mobile subscribers surpassed five billion indicating that 70 percent of the world population is affected. Based on the above report, Informa Telecoms and Media (2011) predicted that by 2015, 15 trillion SMS texts will be sent annually. Considering this, the question can be posed as to why mobile phones and text messages cannot be employed for the purpose of education, especially in learning a foreign language, as it is less bound to social environments such as the home, school and office? Learning can be started from the foundation or building blocks of language which is vocabulary. Even though studies about the use of mobile phones in language learning are recent and limited, results show that it can have positive effects on the learning process (Basoglu & Akdemir, 2010). Some few scholars who used this wireless technology in learning English vocabulary using SMS text messaging include Cavus & Ibrahim, 2009; McConotha, Praul and Lynch, 2008; Rau & Wu, 2008. Few others have focused on pre-smart phone mobile phones and iPod touch personal devices such as Oberg and Daniels (2012) and Stockwell (2007, 2008, 2010) to name but a few.

Testing vocabulary

Teaching has another aspect which is testing. Leading experts in vocabulary studies and vocabulary testing, e.g. Robert Schmitt (2000), Paul Nation (2001) and John Read (2002), hold that vocabulary knowledge is a very important component of both first and second language proficiency, and that it is natural to assess the speaker's and/or learner's vocabulary knowledge in some way. According to Read (2002, p. 304), 'vocabulary, along with grammar and reading comprehension, was the aspect of language that was most commonly included in the new objective tests'. The goal of testing vocabulary is of course to subject knowledge of lexical items. Since there is a gap between passive and active vocabulary knowledge, especially in an EFL environment (Nemati, 2010) the test constructor has to decide to test one of them. Since the testing of vocabulary productively is nearly impractical, vocabulary test generally aims at receptive ability (Jafarpour, 1999).

There are different ways of assessing vocabulary considering different aspects of vocabulary such as size, depth, written, spoken, active and passive vocabulary. The tests are as follows, L1 translation; translate the underlined words into your first language, Synonym matching, filling in the blanks (or Fill in the blank), identifying the meanings of words, matching, and the word associates test, ... in their study Chen et al. (2008) worked on recognition and recall aspects of testing vocabulary.

From the above list, fill in the blank and identifying the meanings of words is the focus of this study. These two types of testing were selected since they are staying away from some short comings of testing vocabulary and are often included in vocabulary tests (Farhady, Jafarpur & Birjandi, 2007).

Hypotheses

However, as little is known about the impact of SMS blended teaching (hereafter called SBT) on

vocabulary learning of students in a foreign context like Iran, as well as its impact of vocabulary testing this study was conducted with the hope to add to the literature. As a result the following research questions were formulated:

- 1) Does SBT (SMS blended teaching) impact vocabulary learning?
- 2) Does SBT (SMS blended teaching) impact different formats of testing vocabulary, namely fill in the blank and identifying the meaning of words?

Methodology

Participants

This experimental study was performed with 94 students from two whole classes having their general English course. Selection was based on convenience methods since they were supposed to have a general English course with the researcher. The intact groups were randomly assigned to control and experimental groups. Finally, there were 40 students in the control group and 54 in the experimental group. Their ages ranged from 21 to 38 including both genders.

Materials and Methods

The words used as the material of this research were taken from an English book under the title of "Active skills for reading: Intro". This is a new book published in 2009 accompanied by a CD. There are 12 units (each unit has 2 chapters) consist of different topics. The students of the experimental group received the bold vocabularies of the first five units through SMS. These vocabularies were emphasized in those units and hence the definition as well as an example was given for those vocabularies in the book.

Each SMS consist of 8 words. For the purpose of this research 5 SMS were sent during 5 weeks and totalling 40 words were sent through SMS. The words are shown in the ensuing part(Table...).

Based on the above words a test was prepared by the researcher to be used as pre and post-tests. It consisted of 20 multiple choice item vocabulary tests in two different formats. The first ten questions were in the form of context items, where there is a sentence with a blank in it and the testees should choose of the alternatives fit in the sentence. This technique is economical for it allows testing the examinees' knowledge of four lexical items at each time. The example is as follows:

He worked for 24 hours.

a) College b) job c) nonstop d) message

The next 10 questions were again multiple choice items, but in the form of asking synonyms. In this form of testing there is a single word in the stem, with four alternatives. Students were asked to choose from among the alternatives the word that is closest in meaning to the word in the stem, since this is very popular in vocabulary tests. It is also called standard vocabulary type (Farhady et al., 2007). An example is given below:

Area means

a)photo b)similar c)diary d)place

Totally, the scores of the test prepared by the researcher were from 20 and no negative marks were considered for wrong answers.

Procedure

To conduct this experiment, the researcher sign an agreement with a postal company through which she could send the SMSs. In this project the researcher is considered as the head and the students as the member of the net. First, some amount was paid in advance to start the project. Of course the researcher paid the cost of per SMS per head personally later.

A number (300075) was dedicated to the researcher and her group. In the first section of the experimental group after giving some explanation about the way and the benefits of SBT all the students send the text message number 1 to the number 300075. Immediately they receive a welcome message and from now on they were the members of the group.

The result of a study by Kennedy and Levy (2008) regarding the timing and frequency of sending SMSs showed that the high school junior student preferred to receive SMSs per day at 7 p.m. Therefore, preferences concerning timing were taken into consideration. Then, one day before having class with the students, the student received one-way and unsolicited messages, or push model as Mellow (2005) called it, including 8 new English vocabulary items. In this way, all the students of experimental group would receive the same text messages at the same time. Generally, five SMSs were sent in five sequential weeks one day before conducting each session to the students of experimental group while the students of the control group did not have this intervention. The same words were taught in both groups by giving the explanation for each word, synonyms and antonyms and contextualization of the selected words. Pre and post-tests were common for both control and experimental groups.

To demonstrate the result of obtained data some statistical methods such as independent sample t-test, repeated measure ANOVA and descriptive statistics were used.

Results

Data analysis began with pre-test to be sure that the control and experimental groups were homogeneous enough to start the study. An independent t-test was run to see if the two groups performed significantly different on pre-test or not.

Groups	N	t	Sig (Two-tailed)
control	40	.094	.925
Experimental	54		

Table 1. Independent t-test between control and experimental group in pre-test

The result of t-test in Table 1 revealed non-significant values in pre-test considering $t(92) = .094$, $P = .925$ hence, confirming the matching of the groups in the pre-test situation.

Table 2. Means and standard deviations of vocabulary scores

Groups	Pre-test		Post-test	
	M	SD	M	SD
control (N=40)	2.650	1.051	12.675	5.085
Experimental (N=54)	2.629	1.033	14.833	4.970

The minimum score in post-test for both groups was 8 and the maximum was 18. To work out the better performance of the experimental group the mean scores tabulated in Table 2 were taken advantage of. Based on the table, the mean score of the experimental group was 2.629 in pre-test, which increased to 14.833 post training Whereas, the pre-test mean score of the control group was 2.650, and increased to 12.675 in post-test. This improvement is less than that of experimental group. Table 3 which is the result of repeated measure ANOVA shows that this difference is statistically significant.

Table 3. Repeated measure ANOVA for control and experimental groups

Subjects Effects	Source of Variation	SS	df	Mean Square	F	Sig.
Within-Subjects Effects	SMS	3817.750	1	3817.750	344.054	.000
	SBT × Groups	54.537	1	54.537	4.915	.000
	Error	1020.867	92	11.096		
Between-Subjects Effects	Groups	52.517	1	52.517	3.458	.000
	Error	1397.100	92	15.186		

The Pillai's trace value was .789 ($P = .000$) for memory strategies and accordingly repeated measure ANOVA was employed to determine whether the differences observed were meaningful.

Based on the result of repeated measure ANOVA, the change in performance resulting from the teaching phase was highly significant ($F = 344.054$, $P = .000$) in the total sample (sum of control and experimental groups). In the same vein, the interaction effect between SBT and groups was highly significant ($F = 4.915$, $P = .000$), that is, when changes based on control and experimental groups were considered the difference observed was highly meaningful in favor of the experimental group. The result of between-subjects effect also

supported a highly meaningful difference between the two groups ($F= 52.517, P= .000$). The same result is shown in Figure 1 as well.

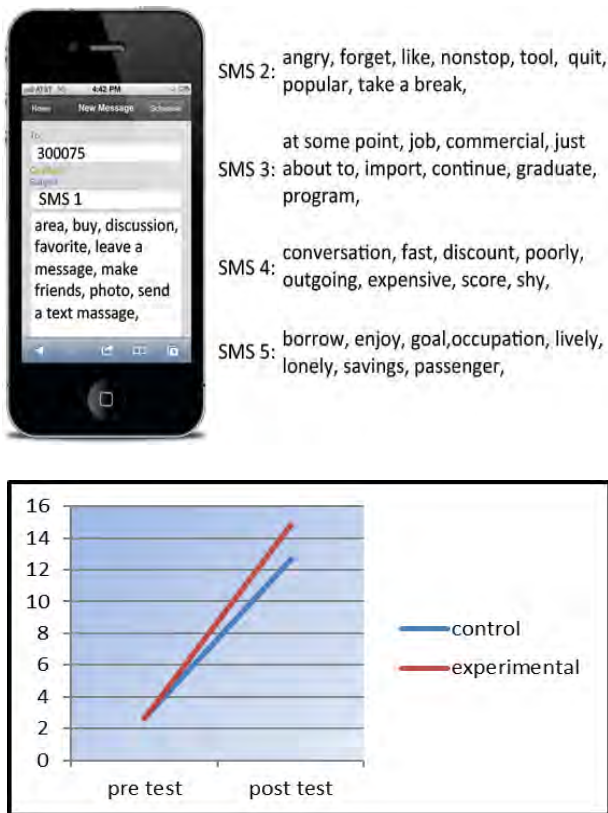


Figure 1. Pre and post-test scores for control and experimental groups.

To answer the second research question regarding the impact of SMS blended teaching on different formats of testing vocabulary, the means of score were compared.

Table 4. Means and standard deviations of vocabulary scores in two formats of multiple choice and underline

Groups	fill in the blank		identifying the meaning of words		Total	
	M	SD	M	SD	M	SD
Control	6.600	3.136	6.075	2.654	12.675	5.085
Experimental	7.463	2.560	7.370	3.205	14.833	4.970

From the means in table 4 some tentative conclusions can be drawn. First of all, it is clear that the total mean score of experimental group (14.83) was higher than that of control group (12.67) which was mentioned earlier. By

comparing means of fill in the blank and identifying the meaning of words formats of control and experimental groups it was revealed that for both groups the fill in the blank format got the higher score in comparison to identifying the meaning of words format though this difference was not considerable.

Discussion and conclusions

The prime purpose of this study was to combine mobile devices in educational settings like classroom for the sake of teaching new English vocabulary items and see the result. It was found that SMS blended teaching had positive effect on boosting foreign language vocabulary items. The result was in line with Turunen, et al., (2003) who viewed mobile devices as a pervasive medium that may assist us in combining work, study and leisure time in meaningful ways. Also, in line with Cavus & Ibrahim, 2009; McConotha, Praul and Lynch, 2008; Rau & Wu, 2008 and Segler 2002 who pointed out the effectiveness of Short Text Messages in teaching vocabulary. Furthermore, Oberg and Daniels (2012), found out that in addition to aiding reading and listening skills mobile learning instructional method can help promote vocabulary acquisition.

As stated by Georgiev, Georgieva and Smrikarov (2004) m-Learning or in this study mobile phone learning has some advantages comparing others, such as e-learning or d-learning which are as follows:

- it can be used everywhere at every time;
- most of mobile devices have lower prices than desktop PCs;
- smaller size and light weight than desktop PCs;
- ensures bigger students' engage as m-Learning is based on modern technologies, which students use in everyday life.

The second question of this study concerned the assessment of vocabulary items. Knowledge of vocabulary is important to language use, and it is useful to be able to test from various points of view such as knowledge of word meanings,

knowledge of word forms, and knowledge of how to surmise the meanings of unknown words from the context.

Some Leading experts in vocabulary studies testing, such Robert Schmitt (2000), Paul Nation (2001) and John Read (2002), hold that vocabulary knowledge is a very important component of both first and second language proficiency, and that it is natural to assess the speaker's and/or learner's vocabulary knowledge in some way. According to Read (2002, p. 304), 'vocabulary, along with grammar and reading comprehension, was the aspect of language that was most commonly included in the new objective tests'. Although, modern vocabulary tests are always embedded in the integrative tests (including listening, speaking, reading and writing), there are a number of reasons for testing vocabulary or testing language skills with a 'lexical' focus, based on the commonly known types of tests.

Vocabulary can be assessed for different purposes such as diagnostic test, achievement test, placement test and proficiency tests. In diagnostic test, a teacher may want to find where students' vocabularies have gaps, so that specific attention can be given to those areas. While, in an achievement test which was also used in this study and is a common one the purpose was to find out if students have learned the words that were taught. Placement and proficiency tests provide some indication of a learner's vocabulary size, which is related to overall language proficiency.

As stated by Ellis (1995) CALL tools can be used to provide structured practice, testing at timed intervals, personalized study functions, examples in context and general tools such as online dictionaries and thesauri to further stimulate vocabulary gains.

Another finding from the current study was the positive effect of SBT of vocabulary on type of testing. The result revealed that SBT was useful for both types of multiple-choice testing

vocabulary such as fill in the blank and identifying the meaning of words. This new way of teaching vocabulary and the better score of the students of experimental group was a mean to motivate students to study, to show students their progress in learning new words, and to make selected words more salient by including them on a test.

Although vocabulary tests are generally considered interchangeable, regardless of format, in this study the two selected achievement testing vocabulary formats were passive recognition. Future investigations will use the same method on different formats of testing such as active and passive recall and active recognition to find out if different results will be obtained. Teaching of vocabulary the classical way is not a particularly efficient use of class time and the method proposed in the present study can be a more effective way of teaching vocabulary.

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