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The Effect of Mobile-Assisted Language Learning (MALL) on Guided Writing Skill of Iranian Upper-Intermediate EFL Learners

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Abstract
By the widespread development of mobile technologies such as mobile smart phones, laptops, PDAs and tablets and also their outstanding functionalities, they have drawn the educational researchers' attention to employ these useful mediums into teaching and learning settings. So the present study was made to find a brand new path which is different from other studies conducted concerning MALL into learning process, in which the effect of MALL on guided writing of Iranian upper-intermediate EFL learners was investigated. Thirty upper-intermediate female Iranian EFL learners participated in this study. The participants in both groups were taught the same and they were taught conditionals and passive voice. They had to make sentences using the taught grammar in the class. The experimental participants had to send their sentences to their teachers and their classmates via text message in order to get feedback if necessary. They were also given an android grammar software (Oxford A-Z of grammar and punctuation) so that they could get help when they needed. The method in the control group was pencil-and-paper. The results showed that there was a difference in performance of the experimental and the control groups, which means the experimental group did better in posttest.
Keywords: Mobile-Assisted Language Learning (MALL), Writing, M-learning

INTRODUCTION

Among all modern communication devices, mobile phones are the most powerful communication device even better than email or chat since it can be used as a learning device despite its technical limitations. Based on this kind of learning device the learners can control their learning process and progress of their own space according to their cognitive state. Learning by the computer or e-learning enables learners to learn in a non-classroom environment when they are at home in front of their personal computers online or offline. On the other hand, learners can take learning process when they are on the bus, outside or at work doing their part-time jobs through the mobile phone or m-

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learning. In fact, they can learn every time and everywhere they are. (Khbiri and Khatibi, 2013).

Two leading features of mobile devices are portability and connectivity. Regarding connectivity, designing the mobile system must have capability of being connected and communicated with the learning website using the wireless network of the device to access learning material universally including short message service (SMS) and mobile e-mail. Regarding the portability it should be noted that it enables learners to move mobile devices and bring learning materials. Klopfer (2002) and his colleagues presented the following properties of mobile devices: a) portability: such devices can be taken to different places due to small size and weight; b) social interactivity: exchanging data and collaboration with other learners is possible through mobile devices; c) context sensitivity: the data on the mobile devices can be gathered and responded uniquely to the current location and time; d) connectivity: mobile devices can be connected to other devices, data collection devices, or a common network by creating a shared network and e) individuality: activities platform can be customized for individual learner.

The extensive impact of market improved the popularity of the mobile phone, and this fulfills teachers need to provide tools and software for learners in teaching contexts. Furthermore, mobile phones are rather inexpensive having functions as Internet browsers available in most devices comparing with other wireless devices such as laptop computers. By using these cheap devices which are available for even the poorest areas and having the functions of e-mail or SMS, it is now possible to transfer information to and from mobile phones between instructors and learners without any difficulty. Although learning service through mobile devices has some advantages, it has its own limitations as small screen, reading difficulty on such a screen, data storage and multimedia limitations, and the like. Many mobile phones are not designed for educational purposes. It is difficult for learners to use them for tasks given by teachers. This is partly due to the initial design of such devices, and partly due to non-existence of such developed mobile phones. However, those devices, which are appropriate for specific learning tasks, are too expensive for most of learners. Thus, teachers should be aware of what kinds of tools learners have, and then set to choose or adapt resources compatible to such tools. This study seeks to answer the following questions:

- Does mobile *text message* help Iranian upper-intermediate EFL learners to improve their writing skill?
- Do Iranian upper-intermediate EFL learners have a positive attitude toward writing skill through mobile text message?

METHOD

Participants

The participants in this study were 30 female upper-intermediate EFL students aged between 16 to 23. They were going to study American English File 4 (Oxford, 2009) in

two classes with two different teachers in Afagh language center in Tehran. The participants were homogeneous on the level of language proficiency specially about writing skill due to the level they are in and the placement test they were taken by the institute. They had already passed the basic and intermediate English grammar including almost all types of conditionals and all passive tenses so they are well prepared for the treatment. The main objective of this research was to make students use their knowledge of grammar in writing. They were received similar instructions. Their course lasted 6 weeks, 3 sessions per week and each session lasted almost 90 minutes.

Instrumentation

The four utilized instruments in this study are explained as follows:

Questionnaire

A questionnaire with 4 closed-ended questions were distributed to collect information about the participants' access to smart phones. Also they were asked which phone and with what capabilities they used, how much time they spent on this purpose out of class and how their knowledge was about using smart phones. And also whether they were eager to learn English by using mobile or not. At the end of the course another questionnaire was used to ask participants about the experience they had during the research process.

Pre- and Post test

A writing section of the IELTS standard test (2012) in which students should use correct structures, punctuations and their writings should be coherent. This pre-test was administered in the first session and it lasted for 35 minutes. At the end of the course there were two tests: one of them was final test, which was administrated by the institution, and another one was the post-test which was the writing section of IELTS standard test (2012).

Mobile grammar software

Steps were taken to make sure the participants have a reliable android mobile application that could help them in grammar and punctuation which are key items in writing. Oxford A-Z of Grammar and Punctuation application was produced by Oxford University Press (2004). All the grammar points and punctuation marks are available in this mobile application.

Mobile text message service

This is a basic mobile system which was used to send and receive text messages.

Procedure

This study was done in Afagh Language Center in Tehran. The upper-intermediate course book was *American English File*. There were 30 male participants who were assigned to two groups, control and experimental groups. Before starting treatment, a questionnaire was taken to gather data about whether the participants have cell phones, if yes what kind and if they would like to learn English via mobile and other information. Then a pre-test which was an IELTS 2010 writing sample was administered to investigate how much they knew about writing and also how well they could perform a writing composition using conditionals and passives. After gathering the collected data, 15 participants were assigned to experimental group in which the learning process was via mobile text message and 15 participants were assigned to control group who were taught conventionally (pencil- and- paper). Both groups were taught the same grammar with two different teachers. The grammars that participants were taught were conditionals and passives. The participants of both groups were divided into three groups of 5 in order to reach a better result by group work. They were taught the mentioned grammars and writing materials such as punctuation, coherence and organization in class and they had to make sentences using those grammars and text them to their partners and teachers to get feedback if necessary. The classes ran normally but there was almost 10 minutes feedback on the texted sentences every session. An android mobile application (Oxford A-Z of Grammar & Punctuation) was given to the learners of the experimental group so that they could get help when needed. In the other class (control group) they were taught grammar but they had to write their sentences on a piece of paper then bring them to class and deliver them to their partners and teacher. There were 16 sessions and each session lasted an hour and half, three sessions a week on Sundays, Tuesdays and Thursdays.

From the first to the 12th session the participants were taught all passives. In fact some passive tenses were reviewed which the participants had already learned them. Then during the 13th to 15th sessions the three types of conditionals were taught and reviewed.

After teaching and reviewing participants in the experimental group were asked to send their text messages, in which the taught grammar was used, to their teachers in the morning of Mondays, Wednesdays and Saturdays and the teacher was supposed to provide them with the appropriate and needed feedback. In the evening of the same day the participants sent sentences with that specific grammar to their partners and they supplied feedback.

In the first step the questionnaire was given to the participants to find out about the types of the phones and knowledge of the using these phones that each participant has. There were only 30 participants available for the present study whom according to Afagh Institute were homogeneous in terms of language proficiency level due to the institute placement test, in-term quizzes and the interviews which were taken at the end of each

term. Then a pre-test of IELTS writing was administered to check their knowledge of writing and to compare with the post-test which was taken at the treatment.

In the final step the experimental group was given the mobile application. They had almost 45 days to use their mobiles and the application. Within this period of time the students should send text messages about their daily routine, and what they had done during the day and so on by getting help from the application. They should use passive voice and conditionals in their writings. They sent these text messages to the teacher and the feedback was provided. At last a questionnaire was administered to find out whether the participants like learning language via phones and how they felt using their mobiles as a learning facilitator.

Design

The design of the present research was Quasi Experimental. The participants were randomly selected and assigned to a control and experimental group. Then the researcher conducted a pre-test and after that the participants of the experimental group started using the mobile application. At the end of research a post-test was administered with standard items for both groups.

RESULTS

The first null hypothesis of this study predicted: *Using mobile text message does not help Iranian upper-intermediate EFL learners to improve their writing skill*. In order to analyze the data to test the null hypothesis one, first the descriptive statistics for the two raters and then their average writing scores at pretest were computed. Afterwards Independent Sample t-test was used to compare the average mean writing score between the control and experimental groups at pretest. Next, all this procedure was done at posttest. Table 1 demonstrates the descriptive statistics for the two raters on writing at pretest.

Table 1. Descriptive Statistics of the Scores of Two Raters for Control and Experimental Groups at Pretest

Writing at Pretest	N	Range	Min.	Max.	Mean	Median	Mode	SD
Control (R1)	15	4	12	16	14.40	14.00	14	1.35
Control (R2)	15	5	12	17	14.40	14.00	14	1.50
Experimental (R1)	15	5	11	16	14.00	14.00	14	1.41
Experimental (R2)	15	5	11	16	14.13	14.00	14	1.30

Table 1 shows that the mean score for both the first and second rater in control group was 14.40. The standard deviations of the first and second raters were 1.35 and 1.50 correspondingly. These two close standard deviations denote that the score of two raters are distributed around their mean almost similarly. The mean score for the first rater in experimental group was 14.00 with the standard deviation of 1.41, and the mean for the second rater was 14.13 with the standard deviation of 1.30. Actually the average means score and standard deviations for two raters in experimental group were not

considerably different. The inter-rater reliability between two raters marking writing test was estimated using Intra class Correlation Coefficient. The results of this analysis are manifested in Table 2.

Table 2 shows that writing pretest, the inter-rater reliability between rater 1 and rater 2 in both groups were estimated .86 and .85 respectively via Intra Class Correlation.

Table 2. Inter-rater Reliability between two Raters on Writing Pretest

95% Confidence Interval				F Test with True Value 0			
Writing	Intra class Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Control (R1-R2)	.860	.634	.951	13.30	14	14	.000
Experimental(R1-R2)	.851	.612	.947	12.37	14	14	.000

The average scores of two raters for each test were computed at pretest. These average scores were used for analyzing the data and test the hypothesis. A quick look at the table hands on that the mean writing score in control is 14.40 with the standard deviation of 1.37, but the mean score experimental group is 14.06 with the standard deviation of 1.30. These two mean score are not far from each other.

The descriptive statistics for writing (average scores of the two raters) scores in control and experimental at pretest are presented in table 3.

Table 3. Descriptive Statistics for Writing Pretest in Control and Experimental

Group	N	Range	Min.	Max	Mean	Median	Mode	SD
Control	15	4.5	12.0	16.5	14.40	14.500	13.5	1.37
Experimental	15	5.0	11.0	16.0	14.06	14.00	13.5	1.30

To use parametric or nonparametric data analysis test, the normality distribution of the scores was tested via Shapiro-Wilk Test. The results of this analysis are represented in Table 4.

Table 4. Shapiro-Wilk Test of Normality for two Groups on Writing Pretest

Group	df	Mean	Statistic	Sig.
Control	15	14.40	.947	.485
Experimental	15	14.06	.957	.634

As it can be seen in the table, the normality test results showed P values of .48 and .63 for writing pretest in control and experimental groups respectively. The P values for both groups are greater than selected significance, i.e. .05 ($P > \alpha$); thus it can be stated that two sets of scores have normal distribution. As a result, the parametric Independent Sample Test was applied to compare the mean writing score of two groups at pretest. Otherwise the nonparametric Mann Whitney U Test would be used. The results of Independent

Sample Test are set forth in Table 5. Levene's Test in Table 5 showed that the hypothesis of equal of variances is supported since the Pvalue, .72 was greater than .05 (P>α).

Table 5. Independent Samples Test to Compare the Reading Pretest in Control and Experimental Groups

	Levene's Test for Variances		T-test for Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.
Equal variance assumed	.129	.722	.680	28	.502	.333

T-test results revealed that there was no significant difference in writing skill between control and experimental on pretest with (t = .68, P = .50, P >α) in which the P value was more than .05, and the t-observed, .68 was less than the t-critical, 2.04, and therefore, it can be concluded that the two groups have close writing ability at pretest.

The descriptive statistics of the scores of two raters in two groups at posttest were assessed and are presented in Table 6.

Table 6. Descriptive statistics for Control and Experimental on Writing Posttest

Writing at Posttest	N	Range	Min.	Max.	Mean	Median	Mode	SD
Control (R1)	15	6	12	18	15.60	16.00	16	1.76
Control (R2)	15	5	13	18	15.87	16.00	6	1.50
Experimental (R1)	15	6	14	20	17.27	17.00	17	1.58
Experimental (R2)	15	4	15	19	17.33	17.00	17	1.39

Table 6 shows that the mean score for the first and second rater in control group was 15.60 and 15.87 respectively are very close to each other. Besides, the range of the first rater was 6 and that for the second one was 5. The standard deviations of the first and second raters turned out to be 1.76 and 10.50 respectively. These two close variances reveal that the score of two raters are almost equally distributed around their mean. And the mean score for the first rater in the experimental group was 17.27 with the standard deviation of 1.58, and the mean for the second rater was 17.33 with the standard deviation of 1.39. In fact the average means score and standard deviations for two raters in experimental group were not far from each other.

Table 7 represents the inter-rater reliability between two raters marking writing in posttest was estimated applying Intra class Correlation Coefficient.

Table 7. Inter-rater Reliability between two Raters on Writing Posttest

	95% Confidence Interval		F Test			
Writing	Intra class Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Control (R1-R2)	.881	.684	.959	15.86	14	14	.000
Experimental(R1-R2)	.857	.626	.949	12.94	14	14	.000

The inter-rater reliability between rater 1 and rater 2 in control and experimental groups at posttest were .88 and .85 respectively.

The descriptive statistics of the two tests of this study were assessed and are set forth in Table 8.

Table 8. Descriptive Statistics for Writing Pretest in Control and Experimental

Group	N	Range	Min.	Max.	Mean	Median	Mode	SD
Control	15	5.50	12.50	18.00	15.73	16.00	16.5	1.37
Experimental	15	5.0	14.5	19.5	17.30	17.50	18.5	1.30

The average scores of two raters for each test were computed in posttest. These average scores were used for analyzing the data and test the hypothesis. The mean score of writing test in control is 15.73with the standard deviation of 1.37, but the mean score experimental group is 17.30 with the standard deviation of 1.30. These two mean score are far from each other. *Shapiro-Wilk Test of normality was used t*o choose parametric or nonparametric data analysis. The results of this analysis for scores in control and experimental groups are laid in Table 9.

Table 9. Shapiro-Wilk Test of Normality for Two Groups on Reading Posttest

Group	df	Mean	Statistic	Sig.
Control	15	24.82	.960	.690
Experimental	15	25.50	.964	.758

Normality Test revealed P values of .69 and .75 for writing posttest in control and experimental groups respectively. P values for both groups are more than selected significance, i.e. .05 for this study ($P > \alpha$); consequently it can claimed that two sets of scores are normally distributed. So, the parametric Independent Sample Test was applied to compare the mean writing score of two groups at posttest, if not the nonparametric Mann Whitney U Test, which is a nonparametric test, would be used. Table 10 clarifies the results of Independent Sample Test.

Levene's Test in Table 10 showed that the assumption of equal of variances is supported since P value, .65 more than .05.

Table 10. Independent Samples Test to Compare the Writing Posttest in Control and Experimental Groups

Levene's Test for Variances			T-test for Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.
Equal variance assumed	.201	.658	-2.831	28	.009	-1.566

Independent Samples Test detected significant difference in writing skill between the two groups on posttest with ($t = 2.83$, $P = .009$, $P < \alpha$) in which the P value was less than .05, and the t-observed, 2.83 was more than the t-critical, 2.04; consequently, the null

hypothesis of this study that reads using mobile text message does not help Iranian upper-intermediate EFL learners to improve their writing skill **was rejected**. So, with 95% confidence, it can be claimed that using mobile text message helps Iranian upper-intermediate EFL learners to improve their writing skill.

The second null hypothesis of this study proposed "Iranian upper-intermediate EFL learners do not have a positive attitude toward writing skill through mobile text message".

All participants in the experimental group were asked to fill out the questionnaire including 15 items with five choices. Each item has a five-scale Linkurt model starting from the first scale "*strongly agree*" to the fifth one "*strongly disagree*". The strongly agree receives five points, "*agree*" four points, "*undecided*" three points, "*disagree*" two points and "*strongly disagree*", one point. The results of descriptive statistics for 15 items of the attitude questionnaire are laid out in the table 11.

Table 11. Descriptive Statistics for Attitude Questionnaire

Items	N	Range	Min.	Max.	Mean	SD
Item 1	15	1	3	4	3.60	.50
Item 2	15	3	2	5	3.87	.64
Item 3	15	2	3	5	4.07	.45
Item 4	15	3	1	4	2.47	.99
Item 5	15	2	3	5	4.33	.61
Item 6	15	1	3	4	3.87	.35
Item 7	15	2	3	5	4.13	.64
Item 8	15	2	3	5	4.13	.51
Item 9	15	2	2	4	3.67	.61
Item 10	15	2	3	5	4.07	.45
Item 11	15	2	3	5	3.87	.64
Item 12	15	2	3	5	4.20	.67
Item 13	15	2	3	5	4.27	.59
Item 14	15	2	3	5	4.40	.63
Item 15	15	3	2	5	4.00	.84

The results of descriptive statistics for total attitude questionnaire are presented in the table 12.

Table 12. Descriptive Statistics for Control and Experimental groups on Attitude Questionnaire

N	Range	Min.	Max.	Mean	Median	Mode	SD
15	.80	3.47	4.27	3.964	4.00	3.93	.226

A look at table 12 hands on that 15 students responded to 15 items of this attitude questionnaire. As it is apparent in this table mean, median and mode were 3.96, 4.00 and 3.93 respectively which are all more than the assigned median, 3.00 and also they are not far from each other implying normal distribution. In addition, the maximum mean scores

of attitude questionnaire is 3.47 and the minimum mean scores of it is 4.27. Therefore, it can be concluded that most of the students agree with writing skill through mobile text message and have positive attitudes toward it.

To investigate the second null hypothesis of this study, the nonparametric Wilcoxon Signed Rank Test was applied. The 5 choices "*Strongly Disagree*"," *Disagree*", "*No idea*"," *Agree*", and "*Strongly Agree*" were ranked 1, 2, 3, 4, and 5 respectively. The code 3, showing the choice of No idea, was considered hypothesis median. Wilcoxon Signed Rank Test results indicated that the P value was .001 (P =.001, P < α) which is less than the selected significant level for this study, .05; Accordingly, the second null hypothesis that reads Iranian upper-intermediate EFL learners do not have a positive attitude toward writing skill through mobile text message was rejected. So, it can be asserted that Iranian upper-intermediate EFL learners have a positive attitude toward writing skill through mobile text message.

DISCUSSION

Regarding pre and posttests, questionnaires, observations and the results, it can be stated that the both null hypothesis of the present study were rejected and it can be claimed that employing mobile based technology in general, and mobile text message service in particular, have a positive impact in the process of gaining L2 writing skill.

The results of this study were in line with Baleghizade and Oladrostam (2010), in which they tried to find the effect of MALL on grammatical accuracy of EFL students. At the end they found that there was a significance difference between the mean scores of the experimental and control groups.

Another study ,which is in line with the present study, is by Thornton and Houser (2005), which was done in Japan where students were sent the vocabulary via text message and they were provided a website to explain the English idioms which students surfed using their 3G phones. The results indicated that mobile phones can effectively help to learn a foreign language and short message is very useful to teach vocabulary.

This study also showed that it is possible to use mobile text message in EFL classes in order to transfer the grammatical and structural items by teachers. It was proved through the following steps: first, the *T*-test results showed that there was no noteworthy difference in writing skill between control and experimental on pretest and it can be determined that the two groups have close writing ability at pretest. Second, Independent Samples Test identified significant difference in writing skill between the two groups on posttest with (t = 2.83, P = .009, P < α) in which the P value was less than .05, and the t-observed, 2.83 was more than the t-critical, 2.04; accordingly, the null hypothesis of this study, using mobile text message does not help Iranian upper-intermediate EFL learners to improve their writing skill, was rejected.

Finally, based on the questionnaires which were administered to gather data on whether there was a positive attitude toward learning writing via mobile text message the researcher came to the conclusion that the participants enjoyed using their mobiles for their assignments at any time and any place which they wished and consequently they wanted to continue learning in this way.

CONCLUSION

As the use of smart phones is incredibly growing in Iran this study aimed to investigate the impact of mobile text messaging on Iranian upper-intermediate EFL learners' writing skill. To do so, the total number of 60 participants were chosen and divided in two groups of control and experimental. The results indicated that the experimental group in which they had passed a course via mobile text messaging did better in their posttest than the control group with the traditional method.

In conclusion, the findings proved that text messaging and using mobile phones for pedagogical purposes can be an exquisite facilitator for both teachers and learners and it has the capabilities of being used more than today.

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