The Effect of Mobile Assisted Language Learning (MALL) on Grammatical Accuracy of EFL Students[1]

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Abstract

The use of technology in teaching and learning environments is an important aspect which has received considerable attention in recent years. In a similar vein, the use of mobiles to increase effectiveness of instruction has been acknowledged through a number of experimental studies carried out so far. The following study was made to improve the grammatical knowledge of EFL students through using mobile phones. Forty pre-intermediate Iranian female students participated in this study. The participants in both experimental and control groups were provided with an opportunity to review and recycle six grammatical forms: present perfect versus simple past, direct versus indirect questions, and comparatives versus superlatives. During class discussions designed in such a way as to elicit the given grammatical items, the participants in the experimental group recorded their voice on their mobile phones and as an out-of-class assignment analyzed their spoken mistakes and commented on them in the subsequent session. The participants in the control group, however, received no extra treatment at all. The results showed that the participants who had benefited from mobile-assisted learning had a significantly better performance on a multiple-choice grammar posttest than the participants in the control group.

Resumen

Uno de los aspectos importantes que ha recibido considerable atención en los últimos años es el uso de la tecnología en los ambientes de la enseñanza y el aprendizaje. En la misma línea se ha reconocido la utilización de los aparatos móviles para incrementar la efectividad en la enseñanza a través de un estudios experimentales llevado a cabo. El siguiente estudio se realizó para mejorar el conocimiento gramatical de estudiantes EFL mediante teléfonos móviles. En este estudio participaron cuarenta estudiantes femeninas iraníes del nivel pre-intermedio. A las participantes, en ambos grupos, experimental y de control, les fue proporcionada con la posibilidad de repasar y reciclar seis formas gramaticales: presente perfecto vs pasado simple, preguntas directas vs indirectas, y comparativos vs superlativos, durante las discusiones de clase, diseñadas de tal manera que se utilizara los tópicos gramaticales proporcionados, los participantes del grupo experimental grabaron sus voces en los aparatos portátiles y, como una tarea fuera del salón, analizaron sus errores orales y les comentaron en la siguiente sesión. Los participantes del grupo de control, sin embargo, no recibieron ningún trato en especial. Los resultados mostraron que los participantes que disfrutaron del beneficio del aprendizaje del apoyo de los móviles tuvieron un desempeño significativamente mejor en un examen ulterior de selección múltiple que los participantes del grupo de control.

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Introduction

Several years ago, it was already being claimed that, at least in the UK, mobile technologies were "a familiar part of the lives of most teachers and students" (Facer 2004, p.1). Moreover, a review of mobile learning (m-learning) projects funded by the European Union since 2001 (Pechrzewska and Knot 2007) confirms the use of mobiles in many projects. Sharples (2006) defines mobile learning in various ways, one of which is concerned with using mobile technologies such as mobile phones. While according to Kukulska-Hulme and Shield (2008) "Mobile learning includes the use of any portable learning materials including audio cassettes, audio CDs, portable radios and DVD players, m-learning now concentrates on more recent technologies" (p.273). Trifanova, Knapp, Ronchetti, and Gamper (2004) defined mobile devices as "Any device that is small, autonomous and unobtrusive enough to accompany us at every moment" (p.3). All in all, m-learning can be identified by the tools which are available anywhere, any time (Geddes, 2004).

A brief historical overview of technology and language learning

Usually any act of language learning and teaching involves the use of a particular type of technology (Warschaur and Meskill, 2000). For instance, language teachers who followed the grammar translation method in which the teacher elaborated on grammatical minutiae and the learners translated sentences from the L2 into their L1 relied on the earliest type of technology, i.e. blackboard. Later on, the use of overhead projectors, as well as early software computer programs, was responsible for provision of mechanical drilling. During the 1970s, when the Audio Lingual method was at its best, practitioners embarked on the use of audio-taped materials, which required obligatory trips to audio labs where students had to repeat monotonous pattern drills. By the late 1970s, due to incapability of language learners in responding to unrehearsed situations, the Audio Lingual method fell out of favor. Seen in another light, this method waned in popularity due to its lack of focus on communicative aspects of language use. In the late 1980s and early 1990s, due to the emergence of cognitive and sociolinguistic approaches to language teaching along with an emphasis on student engagement with authentic, meaningful and contextualized discourse, there was a full-scale shift in the use of technology in the classrooms.

Cognitive approaches

Cognitive approaches tend to view learning as a psychological process through which learners strive for making a mental model of language system through active interactions of cognitive structures and comprehensible input (Chastain 1988). Therefore, errors are not seen as signs of bad habits which must be avoided but rather as natural by-products of this construction process. Technologies which are resonant with cognitive approaches are those which allow learners to have maximum opportunity of interaction within meaning-rich contexts so that learners can foster competence. Some of these technologies are text-reconstruction, concordancing, telecommunications and multimedia simulation software.

Text-reconstruction software such as *NewReader* or *TextTanagers* from research design association gives learners an opportunity to either put in the letters that are missing or arrange them in the right order. Concordancing software (e.g. *Monoconc*) allows learners to search through either small or large texts to see instances of real language use of some words. In this way, it acts as a fruitful supplement to dictionaries. Multimedia simulation software allows learners to enter into a so called "linguistic bath" environment to experience culture first. Examples include *A la rencontre de Philippe* developed by the Athena Language Learning Project at MIT Laboratory for Advanced Technology in the Humanities. *Philippe,* a game for intermediate and advanced French learners, incorporates full motion video, sound, graphics, and text, allowing learners to explore simulated environments by following street signs or floor plans (Warschaur and Meskill 2000).

Sociolinguistic approaches

These approaches see socialization and working with people as indispensable aspects of any act of language learning and teaching. Hence, learning a language is viewed as a process of apprenticeship or socialization into particular discourse communities (Schieffelin and Ochs 1986). From this perspective students need to be given opportunities to practice social aspects not only to understand comprehensible input but also to be engaged in activities that are focused on developing output (Mackey 2007).This can be achieved through student collaboration on authentic tasks and projects (Prabhu 1987; Willis and Willis 2007) while simultaneously learning both content and language (Flowerdew 1993; Snow 1991). From this perspective the Internet is a type of technology which can be used in a myriad of ways in any act of teaching/learning. This, for example, can be achieved through computer-mediated communication for long-distance exchange by means of e-mail and web-based conferencing systems (Warschaur and Meskill 2000), which is particularly useful in settings where students have limited opportunities for authentic target language use.

Emergence of mobile assisted language learning (MALL)

As mentioned earlier, with the emergence of different methods there has always been a recurrent use of different forms of technology. For instance, the espousal of the Audio Lingual method brought about an enormous focus on language laboratories, which gradually became the fashion of the day (Salaberry 2001). Influenced by behaviorism, the language laboratories were equipped by drill-based computer assisted instruction in the 1960s, which then was progressively replaced by a more intelligent approach namely, computer assisted language learning (CALL) in the 1990s. As technologies continue to be used more extensively in teaching and learning settings, so does their propensity to shrink in size. "Other technologies that hold capacity for language learning include PDA, multimedia cellular phones, MP3 players, DVD players and digital dictionaries" (Zhao 2005, p.447).

As with other forms of technology, mobile assisted language learning (MALL) is a branch of technology-enhanced learning which can be implemented in numerous

forms including face-to face, distant or on-line modes. However, different scholars in the field have underscored that MALL should be implemented in the classroom, taking the presence of learners as a paramount factor into consideration. As Colpaert (2004) has rightly argued, before using mobile technologies a learning environment should be fostered. Likewise, Salaberry (2001) has argued against "technology- driven pedagogy" emphasizing the fact that despite their considerable benefits nothing to date has proved that any type of technology can necessarily act better than traditional forms of teaching. Finally, as Beatty (2003) has asserted, "Teachers need to be concerned about investigating time and money in unproven technology" (p.72). All in all, using any kind of technological device should be accompanied by developing an efficacious type of methodology because these devices are not instructors but rather instructional tools.

Review of some studies

In an attempt to study whether mobile phones were useful learning tools, Kiernan and Aizawa (2004) explored their utility in task-based learning. They argued that second language acquisition is best promoted through utilization of tasks, which require learners to bridge some sort of gap, thereby focusing their attention on meaning. In the traditional classroom, however, such activities are easily defeated by the close proximity of students. The use of mobile technologies would be one way to separate learners. In their study, upper and lower proficiency level Japanese university students were placed in three groups; PC mail users, mobile phone email users, and mobile phone speaking users (due to cost the latter group became face to face speaking users). They were given a pretest, three narrative tasks, three invitation tasks and a repeated posttest. The results generally showed that the face to face groups were superior in terms of communicative performance in comparison to the other two groups.

There were three more studies in Japan, which examined the use of cell phones in education (Thornton and Houser, 2005). In these studies students were surveyed regarding their use of mobile phones. English vocabulary lessons were sent to the learners' mobile phones using short text messages and a website was developed to explain the English idioms which students surfed using the 3G phones. The findings revealed that mobile phones are ubiquitous among students and learners were ready to read small texts on mobile screens. It was noted that mobile phones can effectively serve to educate a foreign language learner and short text messages is very useful in teaching vocabulary. One of these studies was made to investigate the use of short text messages for group discussions in school and business meetings. Text messages were received from the audience, stored in database and later displayed on the computer screen as posted notes. Presenters read these messages and gave feedback to the audience. It was found that this method can help those who are reluctant to ask questions due to their shyness. In a recent study, Sole, Calic, and Neijmann (2010) showed that mobiles can allow learners to express themselves in a variety of scenarios. This study included two case studies and was conducted over two years in one of the UK universities. Students were required to report on their work with mobile

devices outside the classroom. It was shown that using mobile devices help learners have a better engagement with learning and to have a better interaction. The results also showed that mobile devices also facilitate contextual learning and they resultantly allow the information to be captured in learner's own location in a way as to be resonant with students' needs.

In the MALL Research Project Report (2009), it was concluded that mobile phones have a considerable effect on boosting students' confidence in both listening and speaking. In this study, a group of students was asked to have some conversation in Indonesian on their mobile phones. The results obtained showed that all students were satisfied with the privacy and freedom that they had using their own mobile devices. Moreover, the teachers welcomed the facility of listening to their students' conversations because they could identify each student's difficulty better. In this study, students undertook a conversation test at the beginning of the project to quantify their initial conversational ability and a post-test to realize their progress. An 11% increase in their mean score from the pretest to the posttest showed the great effect that mobiles can have on improving language ability.

Finally, at the University of Lancaster, Mitchell, Race, McCaffery, Bryson, and Cai's (2006) study involved using short text messages as a way to make communications between teachers and students possible. They found that text messaging is a cost effective mechanism to convey the personalized information to learners' mobile phones in a trendy fashion.

The Present Study

This study was aimed at assessing the utility of mobile phones in improving grammatical accuracy of Iranian EFL students while speaking, which is a new dimension compared with previous experimental studies carried out on using mobile phones. In other words, the focus of most of the studies made in the past was on other dimensions like vocabulary, tests, conversation, etc. In contrast to these studies, the focus of the present paper is on improving grammatical accuracy of EFL students. Almost all of us as ELT practitioners know that making grammatical mistakes is a stumbling block that causes students to shy away from speaking. The main purpose of this study was to use an innovative yet simple way to improve grammatical accuracy of students. The main reason behind using mobile phones was that sometimes because of lack of time in oral communicative activities, mistakes that students make go by unnoticed and as a result some erroneous structures will remain in the learners' interlanguage system. Using mobile phones thus assists us to help our learners become analysts of their own developing linguistic system and foster their autonomy. Besides, the main rationale behind carrying out this study was that nearly most Iranian EFL learners, at least in the setting where the study was conducted, have accuracy problems while speaking. The reason might lie in the fact that they do not receive any systematic instruction or corrections on the mistakes they make. Generally speaking, this study was an effort to embark on giving corrections to students by using a rather innovative and systematic way to help them overcome their accuracy problems.

Method

Participants

The participants were 40 female pre-intermediate EFL students with an average age of 20 at Kish Language Institute in Isfahan, Iran. The reason for choosing these participants for the study was that despite being exposed to the grammatical patterns in Elementary level, students had major problems in using these forms. The reason behind the weaknesses that these students had in using these previously taught specific grammatical forms was that there was no focus on form on the grammatical mistakes that they would make during their fluency activities. In other words, these participants had very little chance of being corrected when they produced wrong utterances related these grammatical forms and thus the researchers felt that there might be a need to review them by designing some fluency-based activities which would let them analyze their mistakes and subsequently correct them. The researchers were firmly convinced that by using mobile phones and giving the chance to learners to correct themselves they could help them become conscious of their grammatical errors and thus learn these specific structures more accurately.

Instrument

In this study no pretest was used inasmuch as all the participants were at the pre-intermediate level as evidenced by their previous scores on standardized achievement tests. Thus, the only test used in this study was a post-test consisting of 20 multiple-choice items, which was administered at the end of the treatment period. The item facility and item discrimination indexes were 0.48 and 0.52 respectively, which are acceptable values (some sample items appear in Appendix A). Moreover, the reliability of the test calculated using Kuder-Richardson 21formula was 0.84, which is an acceptable index.

Procedure

In order to accomplish its aims, this study used two groups, each consisting of 20 participants. The first group was the experimental group, which received six sessions of instruction on three grammatical categories, namely present perfect versus simple past, direct versus indirect questions, and comparatives versus superlatives. Related topics were chosen so that students could have lively discussions while caution was exercised to choose topics that included the already pre-selected grammatical forms. During class discussions, each student recorded her voice on her mobile phone for two or three minutes. The task assigned for students was to analyze their speech and detect their grammatical errors and to simultaneously comment on them and correct them the next session that they came to the class. The other thing done was that each student played her voice to the other students in the class so that if any types of errors went unnoticed by individual students, their classmates would help them identify them. Besides, due to the limitation of time in carrying out the experiment, some students were selected each time to report on their errors individually. In order to give equal attention to those students who could not report individually on each structure, their error sheets were analyzed and corrected by one of the researchers and

were given back to them later. The second group was the control group, which received the conventional way of grammar instruction, i.e. the inductive approach. At the end of the treatment period, a 20-item grammar test was administered to both groups to assess the efficacy of the treatment.

Results

Table 1 displays the descriptive statistics obtained. The result of a *t*-test used to compare the difference between the two groups indicated that the mean score of the experimental group (16.6) is significantly higher than the mean score of the control group, $t(38) = 3.23$, *p*= 0.003.

TABLE 1. DESCRIPTIVE STATISTICS FOR CONTROL AND EXPERIMENTAL GROUPS

Groups	n	M	SD
Control	20	13.3	3.49
Experimental	20	16.6	1.96

 In other words, it can be concluded that the treatment had an effect on boosting the grammatical accuracy of the students. This suggests that students who had used their mobile phones to record their voices for the sake of subsequent checking of their linguistic output had improved their grammatical accuracy more effectively than the students who were not offered this opportunity.

Discussion

The present study was an attempt to show the efficacy of using mobile phones for boosting the grammatical accuracy of a group of Iranian EFL students. The results obtained showed the effectiveness of using mobile phones in increasing grammatical ability of students. The results of the study further confirmed Sharples (2005), who has posited that mobile phones enable knowledge building. The results of this study were strongly at odds with the findings of Salaberry (2001), who pointed out that mobile phones are not effective tools for learning. Generally speaking, there are different factors that might have led to the above mentioned results. The concept of zone of proximal development (ZPD) was first presented by Vygotsky (see Lantolf, 2000). According to this concept, learning is the result of a joint social collaboration between a more knowledgeable person (e.g. a teacher) and a less knowledgeable person (e.g. a student). Foley (1991) has offered a redefinition of ZPD. In addition to emphasizing the social nature of learning, he stated that though the classroom and teacher environment may function as mediators of second language learning, second language learning remains an ultimately self-regulating process, which cannot be controlled by the teacher or the syllabus. Moreover, according to Clifton (2006), for classroom interaction to be facilitative it must break from the traditional pattern of teachers having the power over discussions and offer language learners greater participation rights which give them the potential to take more initiative and hence responsibility for learning. As Reynolds (1990) has pointed out, this is basically achieved by the instructor letting go some of his or her power which,

means sharing discursive resources. So giving the responsibility of learning to students might be one of the reasons for the success of this study. Another reason might lie in the fact that extensive opportunities for producing output might have led to the noticing of specific structures on the part of the students. In her output hypothesis, Swain (1995) argued for three functions of output, one of which is the noticing function. When actively constructing L2 utterances, learners may be more likely to notice gaps in their interlanguage, since they are pushed to syntactic processing to a greater extent than is the case when they are attending to input. However, caution must be exercised to help students notice the gap in their interlanguage by raising their awareness of their linguistic flaws, which has been the target of this project. Another tentative reason for the success of this project could be attributed to the pattern of the speaking lesson adopted in the study. Speaking lessons can follow usual patterns of preparation, practice, and evaluation. The teacher can use preparation stage to establish a context for speaking (where, when, why, with whom it will occur). Practice involves producing the targeted structures, usually in a controlled or highly supportive manner. Evaluation involves directing attention to the skill being examined and asking learners to monitor and assess their own learning progress (Burns and Joyce 1997; Carter and McCarthy 1995).

Conclusion

This paper was generally an attempt to assess the effectiveness of using mobile phones for increasing the grammatical accuracy of a group of Iranian EFL students. The first part of the article dealt with reviewing the related literature on using technology and mobile phones in the classroom. The second part was an attempt to elaborate on the experiment and the results. It was finally concluded that due to the significant difference between the mean scores of the two groups, the treatment had been a successful one in fostering the grammatical accuracy of the students. Generally speaking, this study has a number of implications for both practitioners and applied linguists. First, this study showed that mobile phones can play a crucial part in improving the speaking quality of the students. Another aspect worth mentioning is that this study was an attempt to help practitioners, especially English teachers in developing countries who do not have enough opportunity to use sophisticated technologies in their classes. Another point to be considered is that this study was an effort to help those communicative-approach-oriented teachers who, more often than not, face the problem of dealing with fluent but inaccurate students. The technique offered in this study equips students with some type of indirect and unobtrusive error correction inasmuch as grammar is and has always been one of the indispensable parts of English classes. Finally, this technique could be used by teachers in large classes, where students do not get enough chance to speak, to record their voices on their mobile phones and hand in the devices to their teachers. This way, teachers would be able to give feedback to their students and comment on their speaking problems outside the classroom.

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