A STUDY ON THE IMPACT OF MALL (MOBILE ASSISTED LANGUAGE LEARNING) ON EFL LEARNERS' READING COMPREHENSION

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ABSTRACT: *Technological developments with the adoption of mobile multimedia devices and applications have translated into huge opportunities for English as a foreign language (EFL). Consequently, this study probes the impact of Mobile Assisted Language Learning (MALL) on EFL learners' reading comprehension. The population of this study was intermediate female EFL students (15-20 years old) at English Language institutes located in Kerman, district 2. A Cambridge Placement Test (CPT) was used to have almost homogenous groups. After administrating the CPT, 40 students who were randomly and equally assigned to the experimental and control groups (20 students in each group) were selected as the sample of this study. To see the impact of MALL on EFL learners' reading comprehension, reading comprehension test (EnglishForEveryone.org graded English Worksheets) in form of multiple choice and some open ended questions was used as a pre – test and post – test to assess the participants' reading comprehension in both control and experimental group. The result revealed that EFL learners favor reading comprehension via mobile phones due to the convenience facilitated by the portability and accessibility of the mobile phones.*

KEYWORDS: MALL, reading comprehension, EFL learners

INTRODUCTION

The world is changing at high speed, people are moving from an industrial economy to one that is media-driven and based on information. As the world that surrounds all is becoming smaller and communication and media are becoming more global and diffuse, the nature of society, and of human beings, is being defined quickly on the basis of their ability to be consumers but also producers of knowledge. Technological developments with the adoption of mobile multimedia devices and applications have translated into huge opportunities for English as a foreign language (EFL).

The role of English is quite important in Iran as a developing country. Emergence of new technologies, especially the internet, has resulted in a major transition in terms of business, education, science, and technological progress, all of which demand high proficiency in English (Navidinia et al, 2009). Today's contemporary world has been labeled the world of information explosion, where everyone strives to stay abreast of any new step taken in science and technology. In this world, hardly anyone denies the significance attached to reading as the most generally needed skill worldwide and as one of the best ways to remain up-to-date and well informed (Sadeghi & Soltanian, 2010). Learning to read and reading to learn is not an outworn slogan. Emphasizing the importance of reading, Farhady et al., (1994) have stated that, "reading is the most important of all skills for most language learners in general and for EFL learners in particular" (p. 247). Reading in a foreign language is a very useful and relatively painless way to improve the command over the target language.

In spite of advancements in the understanding of the reading process, reading instruction has advanced very little beyond the type of instruction provided for students 30 years ago. Researching the effectiveness of new strategies, the educators have found that utilizing technology will assist the classroom in the improvement of reading comprehension. Some writers have even claimed that the incorporation of computer technology into the reading process may bring about a change in reading theory and reading practice (Reinking, 1989; Wilkinson, 1983).

Developments in Information and Communication Technology (ICT) have become an integral part of personal and social lives and also influence professional careers. This advancement has led teachers, syllabus and material designers to consider the possibility of integrating technology into the mainstream curriculum development. Although some years ago there were different difficulties in applying technology-based tools in classes to help learners with their language study, today teachers who fail to draw upon technology in language teaching are likely to be considered behind the times (Chapelle, 2008). ICT programs provide so many novel opportunities for language learning (Tafazoli & Chirimbu, 2013). Technology-Enhanced Language Learning (TELL), as the name suggests, is the use of technologies in service of language learning. It has taken up the goal of modern approaches to language teaching, including communicative language teaching, task-based learning, process approaches to writing and training in language learning strategies in enhancing student autonomy and control over the language learning process (Warschauer et al., 1996).

One of the main goals of any language organization and institute is to make language teaching and learning become more flexible and make students' learning become more individual and more autonomous. To reach this goal, they are trying to use technologies such as computers, cell phones and etc. to break the constraints of time, space and conditions in learning. The implementation of technological resources is directly related to the way teachers perceive their use and functionality (Yunus, 2007). 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. There was a prediction that mobile technologies in many parts of the world, specifically in the UK, would become a natural and necessary part for the majority of both teacher and students (Kukulska-Hulme & shield, 2008). To justify learners' need in learning English, MALL (Mobile Assisted Language Learning) is without any doubt the next step in the evolution of educational technology ,reflecting the digital convergence of mobile technology and e-learning in response to a more dynamic society that seeks a personalized ,lifelong universal education (Romero et al.,2010).

MALL is a teaching and learning methodology that uses mobile phones or other handheld devices with some form of wireless connectivity, such as phones, PDAs and tablets, among others. O'Malley et al. (2003, p. 6) defined it as ''any sort of learning that happens when the learner is not in a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies''. MALL is an educational technology for mobile learning. It is designed to seamlessly bring together functionalities of mobile devices, the Learning Management System (LMS) and the need of close connection between teachers and students. Students can have in their smart phones learning resources and course activities as if they were connected to the network through a computer with a wired or wireless broadband link, in addition to native functionalities of smart phones. It is stated that mobile learning technologies are those that allow users get access to

educational resources using mobile devices such as smart phones, notebooks, tablets, and so on, anywhere and anytime (Castillo et al., 2013).

Using MALL as a pedagogical technique will help the students get a comprehensive understanding of the content of materials in second language learning and provides novel opportunities for language learning. This study tries to answer the following question:

What is the impact of MALL on Iranian EFL learners' reading comprehension?

Statement of the Problem

One of the major problems for EFL students in learning a foreign language is the poor English reading ability of EFL students. Reading is one of the four necessary important language skills for those learning English as a second or foreign language (ESL/EFL), for academic success, and for professional development. The students need to read textbooks, articles, or magazines written in English to acquire knowledge and gather information for both their careers and their academic studies. The ability to comprehend expository texts which make up the bulk of their foreign language reading materials is, therefore, very important for all of them. But, the poor English reading ability of EFL students is commonly recognized in EFL classes. The reading ability of EFL students especially those who are not English majors is reported low to medium (Anusornorakarn, 2002).

Several causes have been identified in regard to the EFL students' poor English reading problem. These include a lack of reading resources, a lack of strong reading culture, a lack of reading strategy knowledge, and teachers' use of unsuccessful teaching methods (Vanichakorn, 2003). Considering the great importance of reading for EFL learners, knowing about what constitute reading skill and what can end in difficulty for EFL learners in the course of reading a text seem to be crucial (kheirzadeh & Tavakoli, 2012) .In this study, mobile technology is used to increase the EFL learners' reading comprehension.

Significance of the Study

This study is in significance of providing information on the issue of increasing EFL learners' reading comprehension by using MALL. Today's contemporary world has been labeled the world of information explosion, where everyone strives to stay abreast of any new step taken in science and technology. In this world, hardly anyone denies the significance attached to reading as the most generally needed skill as one of the best ways to remain up-to-date and well informed (Sadeghi & Soltanian, 2010). Learning to read and reading to learn is not an outworn slogan. Emphasizing the importance of reading, Farhady et al., (1994) have stated that, "reading is the most important of all skills for most language learners in general and for EFL learners in particular" (p. 247). Effective reading is essential for success in acquiring a second language. After all, reading is the basis of instruction in all aspects of language learning (Beatrice & Mikulecky, 2008).

In this study, considering the trends of what today young people like, enjoy, and prefer regarding technologies, MALL allows students to actively participate in their learning process to have a better reading comprehension achievement.

Theoretical Framework of the Study

The theory which this study is based on is Mayer's (2005) cognitive theory of multimedia learning which provides an ideal theoretical framework to investigate multimedia learning and the cognitive processes involved in L2 learning. Mayer (2005.) provided empirical evidence supporting his theory and contended that learning in multimedia environments is facilitated when the information is presented through the verbal and visual channels in a way which doesn't overload the working memory such as presenting information by accompanying words and pictures instead of only words, placing words and pictures near rather than far from each other, presenting them simultaneously instead of successively, and so forth.

The cognitive theory of multimedia learning was popularized by the work of Richard E.

Mayer and other cognitive researchers who argued that multimedia supports the way that the human brain learns. They asserted that people learn more deeply from words and pictures than from words alone, which is referred to as the multimedia principle (Mayer, 2005). Multimedia researchers generally define multimedia as the combination of text and pictures; and suggest that multimedia learning occurs when one builds mental representations from these words and pictures (Mayer, 2005). The words can be spoken or written, and the pictures can be any form of graphical imagery including illustrations, photos, animation, or video. Multimedia instructional design attempts to use cognitive research to combine words and pictures in ways that maximize learning effectiveness. Richard Mayer's cognitive theory of multimedia learning is rooted in the field of cognitive psychology which is the study of mental processes using empirical methods (Winn, 2004). Cognitivism is generally consistent with a philosophy of rationalism; its central tenet is the belief that learning is a function of internal mental processes that are best described through an information processing model (Smith & Ragan, 2005). Mayer's theory is founded on the multimedia principle which stated that "people learn more deeply from words and pictures than from words alone" (Mayer, 2005, p. 31). His goal in developing the theory was to understand the best way to design multimedia instruction in order to produce meaningful learning experiences which Mayer described as a "deep understanding of the material" (Mayer & Moreno, 1998, 2003, as cited in Sorden, 2005, p. 272)

REVIEW OF LITERATURE

Mobile Learning Technologies in Education

There have been many scenarios describing the use of handheld technology both in and out of the classroom. The difference between the learning that goes on in school and out has often been addressed (Lave & Wenger, 1991). Miettinen (1999) has pointed out that school learning is characterized by memorization and reproduction of school texts where by teacher talk dominates, and students' activity is largely limited to answering questions formulated by the teacher. In such a learning culture, if one draws on examples of mobile technology in classrooms, one can say that handheld devices can be regarded as an "intruder" in the learning culture a disturbance (Mifsud, 2002) and as such, a disruptive technology. Inkpen (1999) pointed out that one of the main advantages of handheld devices is their ease of integration into a child's world and that the products themselves become a part of the children's culture. The mobile phone has a facility that makes it better than most PCs (personal computers). 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.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. Therefore, 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. 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. Also,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. 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."Other technologies that hold capacity for language learning include PDA, multimedia cellular phones, MP3 players, DVD players and digital dictionaries" (Zhao, 2005, p.447).

Mobile and handheld computers offer new possibilities in education. Computer technology has been criticized for being segregated from ongoing aspect of children's lives, being relegated to the "computer room" in school, and making PCs anything but personal. It has, however, been argued that flexible access to handheld technology will provide tools help children construct knowledge their daily activities, making such technology an integral part of daily learning (Selwyn, 1997).

One of the critical problems in traditional schooling practices is the excessive amount of decontextualized information, indirect and abstract knowledge, and second-hand experiences confined in classroom contexts (Barab , 2002). Similar criticisms that relate to such pervasive language instruction could be found in the literature (Tedick & Walker, 1995). Cullen (1994) noted that such instructions are often fragmented, and tend to be teacher-centered and separated from the students' needs and interests. This triggered language learning theorists to advocate language learning in authentic contexts (Widdowson, 1978; Mishan, 2005). There is a significant potentiality in the portability and versatility of mobile devices in promoting a pedagogical shift from didactic teacher-centered to participatory student-centered learning (Facer et al., 2004). Some developments of MALL demonstrate a similar tendency. According to a survey by Kukulska-Hulme and Shield (2007), prior studies in MALL could be divided into two broad categories: content-based (essentially developing digital learning materials for mobile access) and design-oriented (essentially out-of-class, often authentic and/or social mobile learning activities). Studies related to content development usually focus on more formal contexts, i.e. pushing or pulling of relatively structured, often decontextualized, learning

materials, that are related to language learning courses. Those that are concerned with design-oriented issues tend to refer to the 'informal' nature of mobile learning.

Mobile devices have brought a vast number of learning possibilities which are convenient and compatible to the mobile lifestyle. Mobile technology can support quick feedback or reinforcement; immersive experiences such as mobile investigations or games; situated learning in an authentic context; access to information while moving around a specific environment; information sharing in collaborative learning; record keeping in informal and lifelong learning; and coordination of learning and resources (Kukulska-Hulme et al., 2004). Mobile devices are best viewed as mediating tools in the learning process during which the learners, teachers and content interact with each other. Kukulska-Hulme (2006) has predicted language may be a fruitful area for informal learning with mobile devices.

As there is a growing trend in exploiting the innovative design and pedagogical practice of mobile learning, it is necessary to clarify what scholars mean by "mobile learning" since the concept has developed rapidly and there are different understandings of what is meant by "mobile". At the stage of infancy, researchers defined mobile learning from different perspectives. Geddes (2004) defined mobile learning as the acquisition of any knowledge and skill through using mobile technology, anywhere, anytime that results in an alteration in behavior. Mobile learning is considered as the application of mobile or wireless devices for learning when the learner is moving. Thus, flexible, accessible and personalized learning activities are considered as the advantages provided by mobile learning. Sharples (2006) and Laurillard (2007) argued that a typical m-learning activity could build more opportunities for digitally- facilitated site-specific activities, and for ownership and control over what the learners do.

Mobile technology, while essential, is only one of the different types of technology and interaction employed. The learning experience cross spatial, temporal and/or conceptual borders and involve interactions with fixed technologies as well as mobile devices. Weaving the interaction with mobile technology into the fabric of pedagogical interaction that develops around them becomes the focus of attention (Kukulska-Hulme et al., 2009).

The early research in relation to the concept of mobile leaning was closely related to devices and the potential for enabling lifelong learning. It soon became clear that rather than focusing on the device, research should be on the mobility of the learner. Mobile assisted language learning characterizes the use of personal, portable devices that enable new ways of learning, emphasizing continuity or spontaneity of access and interaction across different contexts of use.

Reading Comprehension and MALL

In the contemporary classroom language skills are often integrated. However, just as much of the research on second language learning and teaching has built on separating the skills as individual objects of interest, so too has technology development (Warschaur & Meskill, 2000).

Reading activities have existed on computer since the early days of the field, but until the 1990s brought crisp black on white monitors into widespread use, there were concerns about the efficiency and transferability of skills for reading on screen. Early on, it was recognized that computer programs could assist reading development in at least three ways: by controlling what the readers saw and how long they saw it in order to promote reading strategies and automaticity, by providing comprehension and other exercises, and by presenting glosses and

other comprehension aids. More recently, the web has made accessible an enormous amount of printed material in both commonly taught and many less commonly taught languages. Online dictionaries have reduced the need for laborious glossing. Chun (2006) provided a review of CALL reading research linked to 10 implications for reading instruction that have emerged from text-based reading research.

Despite the apparent potential of technology in the area of second language reading, Chun (2006) has noted a number of areas in which little development has ensued. These include the final four of the 10 implications: 'promote extensive reading; build reading fluency and rate; develop intrinsic motivation for reading; and contribute to a coherent curriculum for student learning. Clearly, there is room for additional work here as more and more reading shifts naturally from paper to digital form, especially since reading itself is changing due to the increasingly common embedding of hypertext links and multimedia.

Mobile technology is currently a feasible approach to overcoming many of the obstacles in current methods of EFL reading instruction. Standing on the shoulders of the giant, CALL (Barker & Torgesen, 1995; Mioduser, Tur-Kaspa, & Leitner, 2000; Speziale & La-France, 1992; Sung, Huang, & Chang, under review), mobile assisted language learning (MALL) has the capability of providing EFL learners with the same opportunities for independent and targeted reading practice and immediate corrective feedback as CALL. In recent years, many studies have explored new methods of language learning made possible by the unique features of MALL, including portability, social interactivity, context sensitivity, connectivity, individuality, and immediacy (Attewell & Webster, 2004; Chinnery, 2006; Klopfer, Squire, & Jenkins, 2002; Soloway et al., 2001).

Research suggests that MALL has excellent potential for providing students with rich, real time, collaborative and conversational experiences both in and outside the classroom. However, the focus of MALL is mostly on speaking (Kukulska-Hulme, 2005), vocabulary (Thornton & Houser, 2005), phrases (Thornton & Houser, 2005; Morita, 2003), and grammar (Sung, Huang, & Chang, 2006), rather than early reading skills. Furthermore, most subjects in recent studies of MALL have been college students. Few studies have investigated how mobile technology benefits the reading skills of elementary students. The subjects of studies by Zurita and Nussbaum (2004) (6- and 7-year old children) and Soloway and his colleagues (2001) (k-12 students) are exceptions, but the learning objective in these studies was not specifically English reading skills. Further, although the most widely used hand-held devices (e.g., cellular phones, personal digital assistants, and mp3 players such as iPods) have a good reputation in MALL research, their small screens have been frustrating (Carlson, 2002).Smart phones have turned into an everyday object for teenagers and many believe that these can be used to facilitate the language learning process. The extended band-with as well as the possibility of installing different apps on these smart phones has opened new opportunities for learners to better utilize these technologies for learning and comprehending different contents of language.

Considering the limited number of MALL studies focusing on reading comprehension, the current study tries to investigate the impact of using such devices on increasing the reading comprehension of EFL learners.

METHODOLOGY

The population of this study was intermediate female EFL students (15-20 years old) at English Language institutes located in Kerman, district 2. A Cambridge Placement Test (CPT) was used to have almost homogenous groups. After administrating the CPT, 40 students who were randomly and equally assigned to the experimental and control groups (20 students in each group) were selected as the sample of this study.

To see the impact of MALL on EFL learners' reading comprehension, reading comprehension test (EnglishForEveryone.org graded English Worksheets) in form of multiple choice and some open ended questions were used as a pre – test and post – test to assess the participants' reading comprehension in both control and experimental group. The reading tests were graded tests; intermediate (low to high) with controlled level of difficulty (lexicon and structure).

To consider the internal consistency reliability (to evaluate the degree to which different test items that probe the same construct produce similar results), split-half reliability as a subtype of internal consistency reliability was used. The process of obtaining split-half reliability begun by splitting in half all items of the test that were intended to probe the same area of knowledge in order to form two sets of items. The entire test was administered, the total score for each set was computed, and finally the split-half reliability was obtained by determining the correlation between the two total set scores. The reliability of the test was (0.89). To check the validity, reading comprehension tests were used in a way to test the topics being covered at class to follow the content relevance and content coverage validity.

Procedure

The researcher checked to see whether all learners in experimental group had mobile phones or not. Some of them did not have mobile phones; therefore the researcher provided them with some sim-cards and made sure that there was at least one mobile phone in their families. Those learners who did not have mobile phones were asked to insert the provided sim-cards in a mobile phone provided by the researcher to do the activities according to the time table of sending texts. Both groups received the same materials during the course considering the same teacher, and the same setting. Both groups participated in the study for 20 sessions, and 9 reading comprehension texts were practiced in both groups. In both groups, the reading texts were practiced in the same way at class, but as outside activities control groups received paper and pencil activities and they were asked to do them for the next session. Experimental group received the same reading activities which the students had to read, reflect, and answer via mobile phone. For the experimental group the activities were divided into several parts to be received everyday up to the next session. After doing outside activities, both the experimental and the control groups were tested to measure their reading comprehension. The main point that should be mentioned is that the control group received the activities on the paper but the experimental groups received them via mobile phone within a planned time schedule.

RESULTS

Table 8.1. Reading Comprehension Scores of Control and Experimental Group (pre-test)

Group	Reading Comprehension			T-Test	df	P-Value
	Total number	Mean	Std.Deviation			
Control	20	9.18	3.43	0.11	38	0.9
Experimental	20	9.05	3.50			

Table 8.2. *Reading Comprehension Scores of Control and Experimental Group* **(post-test)**

Group	Reading Comprehension			T-Test	df	P-Value
	Total number	Mean	Std.Deviation			
Control	20	10.45	3.31	-3.12	38	0.003
Experimental	20	13.56	2.99			

Table 8.3. *Reading Comprehension Sores of Control Group* **(pre test & post test)**

Time	N	Mean	Std.Deviation	T-Test	df	P-Value
pre-test	20	9.18	3.43	-10.38	19	0.0005
post-test	20	10.45	3.31			

Table 8.4. *Reading Comprehension Sores of Experimental Group* **(pre test & post test**

Time	N	Mean	Std.Deviation	T-Test	df	P-Value
pre-test	20	9.05	3.50	-16.64	19	0.0005
post-test	20	13.56	2.99			

DISCUSSION AND CONCLUSION

This study has investigated the effect of MALL on Iranian EFL learners' reading comprehension. Considering the research hypothesis, H1:There is a relationship between MALL and Iranian EFL learners 'reading comprehension. According to the results (tables 8.1-8.4), based on the P-Value, independent sample t- test and paired sample t-test, it can be said that there is significantly a positive relationship between MALL and Iranian EFL learners' reading comprehension. Both groups (experimental & control) promoted in terms of the target language reading comprehension, but the findings supported the superiority of MALL. Therefore, the research hypothesis is accepted.

Comparing the effectiveness of MALL, the present study in line with several other studies (Kukulska-Hulme & Shield, 2008; Xiao-Bin, 2013; Calic, and Neijmann, 2010; Al-Shehri, 2011b; Begum, 2011; Petersen, Chabert & Divitini , 2006 ; Vihavainen, Kuula, & Federley (2010); Rahimi & Miri ,2014) found that MALL is significantly effective in fostering learners' reading comprehension.

The current findings provide additional insights into the perception of reading comprehension via mobile phones. The major research findings show that learners favor reading comprehension via mobile phones due to the convenience facilitated by the portability and accessibility of the mobile phones. The evidence from this study suggests the potential application of mobile phones in reading comprehension. The findings of the current research not only inform teachers and educators, but software developers of the potential pedagogical application of the mobile technology.

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