TEACHERS' PERSPECTIVE TOWARDS MOBILE ASSISTED LANGUAGE LEARNING IN PAKISTANI ELT CLASS ROOMS

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ABSTRACT

This study intends to explore the perceptions of teachers working in different post graduate colleges in Pakistan about the integration of mobile phone in their English class rooms. The population for this study comprises of teachers from the federal capital and all four provincial capitals of the country. Moreover, to justify the study population, Multan city was taken additionally from the Punjab province. 100 teachers each from all the cities were randomly selected and a survey was conducted in which an organized questionnaire comprising of 21 questions was distributed to the respondents. The findings of this study show that mobile assisted language learning (MALL) is a new phenomenon and it is approved by Pakistani teachers in their language classrooms. Overall, it has been found that like advanced countries, this technique is not only upholding its place in Pakistan, but its popularity is also rapidly increasing.

INTRODUCTION

In the early twentieth century many people were unfamiliar with the word 'Technology.' However, new inventions and innovations in different fields of science integrated technology in all sections of human life. Presently one cannot deny the importance of technology in the world. Technology is a broad term which include multiple gadgets, innovative methods, techniques and aspects which help people to ease their lives. Technology covers the area from remote of air conditioners and television to the automatic cars; from UPS, generators, and keyless cars to e-commerce. From engineering to medical science and arts, technology is everywhere. Before we discuss further, let us first look at the meaning of the technology and how it can be explained. Reddy and Zhao (1990),

describe that the term technology itself is so vast that it is not easy to explain this term. Lan and Young (1996), are of the view that definitions of the term technology are diversified and are dependent upon the context of the disciplines and the authors using this term. The definition by Sahal (1982), assert technology as 'configuration', observing that the transfer object (the technology) relies on a subjectively determined but specifiable set of processes and products. Sahal (1982), argues that technology can be taken as the configuration which can observed from the way it transfers, as it depends upon the methods, processes, and the products which are of course determined subjectively. So, the definition itself explains that technology has a vast area to play and it envelopes things from the process to the product. Looking at this element, if one talks about a major technological change, it was first the invention and later the inclusion of computers which were the part and parcel of everyone's life, and the soul of every section of the community. Computers were once a new phenomenon in the advanced countries but now they are even losing their reputation and users. The reason is the mobile devices which were initially designed for calls and SMS, but later with the development in mobile models and induction of android mobile phones, changed the picture and gained popularity. The mobility, portability, and internet usage has made mobile phones a product of the world. In the area of education, some of the researchers like (Bransford, Brown, & Cocking, 2000; Roschelle et al., 2000), are of the view that there are a lot of components of the technology which are in line with the aspects of learning, having the potential for the improvement in standards of education.

In the late twentieth century, the worth and value of computers in class rooms was undeniable. Studies done by few researchers like (LCHC, 1989; Bork, 1985; Ragosta, 1983; Papert, 1980), all were of the view that computers have strong effect on the learning and the teaching process. Thus, the use of computers was proclaimed to be innovative and became a trend in advanced countries. Presently, mobile phones have replaced the use of computers within class rooms since the start of twenty-first century. One can claim that mobile devices not only help transmitting the voice of humans but also support numerous features like games, music, internet, GPS, etc.

Class Rooms in Pakistan

Class rooms in Pakistan which use technology as a teaching aid, is a rare aspect. The convention still prevails, as the teacher dominance and learner passiveness are the order of the day. Pakistani class rooms can

be divided into two layers, 1) class rooms in the cities; and 2) class rooms in the rural areas. In both the class room settings, the learners are totally dependent upon the teachers and the teacher centered approach is still overriding. Here already established methods of teaching and learning are used frequently. Though, there are some glimpses of technology use in the big cities, but its horizon is not so widened that it can cover every village and rural area. Knowing this entire circumstance, the researchers knitted an investigation to inquire the opinions of the Pakistani teachers regarding the use of MALL in English language class rooms in Pakistan. The two important users of MALL are students and teachers, so here the researchers will focus on the perceptions of the teachers from all big cities in Pakistan.

Teaching and learning with mobile phones is an innovative method commonly used in ESL and ELT classrooms in western countries. The exploration of this specific study stresses on the importance, value, and worth of MALL in Pakistan. The core aim is to find out that if MALL has become a new phenomenon and trend in Pakistan like the rest of the world and out of two important pillars i.e. the students and the teachers, what are the views of the Pakistani teachers towards MALL.

SIGNIFICANCE OF THE STUDY

The intention of the researchers of this study was to investigate that if MALL can be helpful for Pakistani teachers and what are their attitudes and opinions towards this new and innovative method of teaching which has marked its importance in the world. The pivotal feature of this study is that researchers were of the view that if MALL is a new proclivity of people in Pakistan then it must be used, recognized, and accepted by the teachers all over the country.

LITERATURE REVIEW

The scientific technologies invaded into the education world in the late twentieth century. There are many scientific technologies that were always a part of the class rooms. Later with the rapid growth of technology, the world inclined to those technology tools which are portable and easy to use. Amongst the portable technology usage, mobile phones are rated much higher and are now a usual part of the educational system (Pecherzewska & Knot, 2007). The features of being portable and easily accessible attract learners, and many learners are now using the mobile technology for educational purposes (Tayebinik & Puteh, 2012).There are

researches which reflect that the influence of forceful instruction through mobile technology has been created recently (Roschelle, 2003), supporting flexible aspect of learning (Squire, Jan, & Mathews, 2007), and intensifying learning (Squire & Dikkers, 2012).It is also a fact that learning through mobile phones can be taken as the next era of e learning (Sharples, 2000).

Trifonova et al. (2004, p.3), are of the view that any type of device which is portable, small, modest, and independent enough to be with us everywhere is a mobile tool. So, mobile learning means learning everywhere, anytime, and anywhere, using mobile tools (Geddes, 2004). Traxler (2005), is of the view that mobile learning can be defined as any type of educational setting which is dominated using hand handled and portable device. Presently, mobile learning has become the order of the day, thus, enhancing the learning process using phones and media players (Kukulska-Hulme, 2009). The chief aspect of the mobile devices is that they open a new horizon of learning which is stressing upon the quality of being assessable, consistent, and ready to be used in multiple situations (Kukulska-Hulme & Shield, 2008; Traxler, 2007; Chinnery, 2006). Furthermore, it is also a noteworthy aspect that mobile phones and devices are not the exchange devices with the pre-existing tools, rather they are an addition to the already established ways of learning, encompassing new methods, aspects, and techniques to attract students (Gay et al., 2001).

Mobile Assisted Language Learning

Mobile assisted language learning can be explained as "mobile technologies in language learning, especially in situations where device portability offers specific advantages" (Kukulska-Hulme, 2013). Mobile phones assisting languages for learning purpose are an imminent tool and are witnessing a rapid growth. Research suggests that it has so much to offer to its learners like, enriching them with individual as well as collaborative, real world learning and conversational experiences inside and outside the language class room. MALL helps its learners to even take part in activities without being in static position i.e. learning can be done in the class, in the house, on the roof, in the café, in the bus etc. (Chen & Li, 2010; Kukulska-Hulme, 2009). Lu (2008), claims that MALL is deeply dipped with daily communicational process and experiences of culture and society. Additionally, MALL also permits its users to learn different language at the same time (Begum, 2011).

Advantages of Mobile Assisted Language Learning

There are a lot of advantages of mobile assisted language learning. The use of multimedia to record, play back, and compare a learner's voice quality with the native speakers can be a great learning tool for language users in class room. Teaching language through music and videos is also an important aspect of fun learning which creates a positive impact on the learners (Miangah & Nezarat, 2012).

The internet use in the language class rooms through the mobile phones, help the students to quickly check, enquire, and analyze about any concept related to the language. Even they can go to the website to check the pronunciation of a word; which is a remarkable feature for the ESL learners. Access to YouTube, Daily Motion and other web applications help to find out the lectures for specific language issues and purpose. The availability of online dictionary to check the meaning and contextual use of a word is also an important aspect that can be explored in the class room during the lectures through mobile tools. Furthermore, the social interaction through social networking website like Facebook, Twitter, IMO, LINE and other applications not only help the students to learn from their peers but it also supports them to connect with their specific instructor. The affectivity of any lesson becomes more prolific when students can ask it from the teacher at any convenient time, even outside the institution and class rooms. The physical availability of the teacher is sometimes not possible after the lectures, so mobile can help students to connect them virtually. Another important aspect of MALL is the instant feedback, where if a student can put up a query out of the class, he may get the reply and feedback even from the teachers or peers. This can help in saving time the learner's time and efforts. Therefore, in general the mobile devices are most effective tool for learning languages (e.g. Rosell-Aguilar, 2007; Fallahkhair, Pemberton, & Griffiths, 2007), thus creating a positive impact on developing skills related to language (e.g., Chen & Chang, 2011; Chang & Hsu, 2011).

Disadvantages of Mobile Assisted Language Learning

Some of the scholars explicitly state the disadvantages of mobile assisted language learning. They opine that, maybe it distracts the attention of the students from learning. During the class, while learning the important concepts, the learners can go for any other application and waste time rather than focusing on studies. Similarly, while having online information, many learners can go to other websites which are linked

together and can distract their attention. The importance of the teacher is also a key point as sometimes this learning becomes so autonomous that the presence of the teacher becomes neglected. Cheating and copying can also be easily possible as students can make their personal groups on WhatsApp, Viber and can solve issues collectively, when they are tested individually. Class room physical interaction can also be affected due to the mobile devices as spending too much time on digital gadgets can minimize class room communication thus binding students to only operate, comment and communicate through the mobile device leaving behind opportunities to enhance their communication skills and confidence building (Miangah & Nezarat, 2012).

MALL and Teachers

There is much written on the opinions of ESL teachers towards mobile assisted language learning (e.g., Serin, 2012; Tai & Ting 2011; Uzunboylu & Özdamlı, 2011).The researchers in the studies do focus upon many other important aspects and are of the view that MALL is a positive phenomenon as declared by ESL teachers and students (Şad & Göktaş, 2014; Viberg & Grönlund, 2013; Uzunboylu & Özdamlı, 2011; Pollara & Broussard, 2011; Çavuş & İbrahim, 2009). There are some researches which have analyzed some variables like age, gender, education level, and discipline related to MALL and the findings revealed that there is no special difference while learning language through mobile (Şad & Göktaş, 2014; Serin, 2012), whereas some other explained that gender and age sometimes create difference in learning through mobile (Broos, 2005; Uzunboylu & Özdamlı, 2011; Viberg & Grönlund, 2013; Wang, Wu, & Wang, 2009).

MALL and Pakistan

Mobile assisted language learning is a common practice in the world now but in Pakistan the situation is totally different. Pakistan is a country where the educational facilities are still lacking, and conventional features are still a regular practice. Teachers here are adamant to teach through GTM and are of the view that this is the best method to teach English to ESL learners.

The current study focuses upon the perceptions of the ESL teachers who are teaching in the large cities of Pakistan about MALL. The research objective was to understand that MALL, which is a new trend in Pakistani class room, is accepted by the teachers or do they face difficulty, hatred, or discomfort while using mobile devices for teaching language in their respective class rooms.

RESEARCH METHODOLOGY

The research study was a quantitative research where data was collected through well-structured questionnaire from one hundred teachers from seven cities of Pakistan including Islamabad, Karachi, Lahore, Multan, Peshawar, Quetta and Gilgit who are teaching English to second language learners. The teachers were chosen using simple random sampling technique. The data for the current study was collected from five provincial capitals and one federal capital of Pakistan. Apart from Lahore, Multan was taken additionally, as the overall population of Punjab province is 60% of the total population of the country.

RESEARCH QUESTIONS

The current study explores the following important aspects related to mobile phones:

1) What are the views of English language teachers in Pakistan towards MALL?

2) Can MALL be a helpful tool for teachers in ESL and ELT class rooms in Pakistan?

RESULTS

The data was collected from seven major cities of Pakistan. A well-structured questionnaire collected the respondents' views on the various factors of mobile assisted teaching by ESL teachers. Questionnaire was designed based upon existing literature from Sánchez, Pérez, and Gómez (2010). The various factors were measured on a five-point Likert scale with the following details [1 = Strongly Agree (SA), 2 = Agree (A), 3 = Neutral (N), 4 = Disagree (D), 5 = Strongly Disagree (SD). The following chart demonstrates each question and their (strongly Agree-SD) responses to each question.

	Cities/Research Questions	Islamabad	Karachi	Lahore	Multan	Peshawar	Quetta	Gilgit
1	I feel comfortable teaching through mobile	33%	32%	35%	25%	31%	27%	23%
2	Mobile helps me in developing latest Apps for teaching my course contents	40%	43%	41%	40%	37%	30%	30%
3	Through MALL, serene atmosphere can be created for second language learners	41%	42%	38%	41%	35%	37%	35%
4	MALL attracts the attention of students thus helps me to engage them effectively	45%	42%	44%	42%	37%	38%	33%

5	Different mobile applications keep me connected with the students	41%	41%	45%	42%	41%	32%	32%
6	I can monitor every student's performance through MALL	39%	37%	35%	25%	31%	39%	35%
7	Listening activities become more effective through MALL is ESL classroom	33%	34%	38%	35%	39%	38%	33%
8	For teaching speaking activities innovatively, MALL supports me	40%	43%	42%	41%	38%	40%	34%
9	I can teach writing activities more effectively through MALL in ESL classroom	33%	35%	40%	35%	35%	34%	32%
10	Reading activities become more operative when performed through mobile in ESL classroom	39%	40%	37%	39%	41%	35%	37%
11	I appreciate mobile material rather that printed because of its easy mobility	40%	43%	41%	42%	37%	37%	39%
12	I receive positive feedback from ESL learners regarding the use of mobile phones	37%	33%	41%	38%	37%	35%	30%
13	It diverts my attention from teaching	5%	5%	12%	11%	14%	4%	13%
14	I feel uncomfortable in using mobile in ESL classroom	10%	12%	15%	15%	16%	13%	16%
15	I feel I lose control over students with the induction of mobile in ESL classroom	13%	10%	12%	11%	10%	11%	13%
16	I cannot engage students effectively through mobile teaching	15%	14%	13%	11%	11%	13%	14%
17	Controlling the use of mobiles for learning purpose in classroom is not possible	10%	12%	11%	13%	22%	18%	25%
18	There is no proper training given to me to use mobile devices in classroom	40%	32%	41%	42%	38%	41%	42%
19	ESL teaching through mobile is not appreciated by me	15%	13%	11%	13%	16%	18%	17%
20	I think mobile prevents serious environment in ESL classroom	35%	35%	36%	25%	37%	36%	35%
21	I prefer conventional mode of teaching than MALL	20%	12%	13%	14%	12%	15%	11%

DISCUSSION

The research observations and primary data analysis demonstrate that, respondent teachers from all seven cities of Pakistan have given their verdict explicitly. Neutral responses were observed in almost all questions which

illustrate uncertainty and lack of clarity in some answers, but the percentage of the neutral response rate is relatively low. The study findings explicate that MALL is now a known technology to the English language teachers of Pakistan. Overall, all the responses of all the questions depict huge inclination in favor of the statement of the questions related to implementation and adoption of MALL in their class room settings. For example, one question which inquires that if a *serene class atmosphere for learning English to second language learners could be created through mobile assisted tools,* majority of the teachers have strongly agreed to this statement. Without any disparity among the teachers from diversified cities, all teachers from all cities included in the study, favor the statement positively. This inclination illustrates that teachers are confident to have positive outcomes of using mobile phones for learning purposes in class rooms. Furthermore, with the inclusion of MALL, a passive ambiance can be created, as students get more involved and concentrated towards learning, and teachers can also have diversified possibilities to teach them innovatively.

The responses on gauging the level of assistance provided by mobile devices, to monitor the students, majority teachers assert that it is easier for them to check students and monitor them effectively, while operating mobile devices in the class rooms. As students are more concentrated towards their work and their progress is instantaneously checked online through these devices, MALL proves to be an effective tool to monitor and control the class rooms. Moreover, in conventional setting, individual attention is not possible, as one teacher cannot give attention to all students equally, whereas in MALL class rooms, teachers find it comfortable to check the progress of every student as it appears in the device online.

In order to know if through the mobile assisted learning practice, the mobile devices divert the teachers' attention, majority of the teachers disapprove the notion and maintain that the MALL rather makes them more focused and intense in their teaching. As it is a new phenomenon, so teachers themselves work hard to make things attractive for the students. Teachers responses also further stress that MALL helps them to monitor the class rooms effectively and they themselves can control the class room by restricting the use of mobile devices for learning purpose only. The use of other websites, and social media networking can be checked on spot, as in a collaborative learning environment, no one can be a silent participant. The majority teachers were of opinion that MALL and mobile devices helps in promoting serious and intense learning environment in the class rooms. However, the aspect of enjoyable learning

is there, but then again, the focus is on learning only, as inculcating seriousness in class rooms does not mean to instill seriousness in the environment, rather it means the intention of seriousness in task completion and learning practice.

CONCLUSION

Mobile assisted language learning and Mobile technology has always been a new phenomenon for the teachers of the world. Use of MALL in class rooms has changed the concept of learning. In Pakistan mobile technology was and is used either for connectivity purpose or for recreational purposes like watching films, chatting with friends or using social websites. The idea of MALL is extremely new is Pakistan and teachers in villages and small cities are not introduced and familiar with this aspect of teaching. Moreover, the value of English speaking in Pakistan is quite high because it is considered to be a part of social status in the country. In Pakistan, the old method of teaching is still dominating the classrooms, which in itself does not help the learners to learn English affectively. In big cities, situation is gradually changing and teachers have started using MALL in their language classrooms but there is hardly any training and research on MALL for the teachers, which can help in finding out ways of using, implementing, improving, and cascading this technological aspect. The current study has observed that the overall perceptions and opinions of the Pakistani ELT teachers are positive, and they take this technology confidently. Although they are implementing MALL in their classroom without any proper training but overall, they do not take MALL as a hindrance in teaching. Another important aspect is that the teachers' opinion also demonstrate that they have no fear to lose their so-called dominating power as teachers and want to live, learn, and improve with the modern world. Pakistani teachers now intend to transform their language class rooms and follow the western structure where the class rooms are student centered and the focus is on maximum leaning output (MLO). Thus, the results indicate the value of implementing MALL comprehensively in Pakistani class rooms. This study can serve as a pioneer for future researchers and researches in Pakistani context related to different dimensions of MALL.

RECOMMENDATIONS

Following recommendations are drawn from the research findings and data analysis:

i.   MALL should be a part of every class room.

ii.   Implementing MALL should be welcomed by administration.

iii.   Teacher training programs should be organized related to MALL.

iv.   Foreign experts of MALL should be invited to train the teachers.

v.   Cascade trainings should be implemented.

vi.   Teachers should be given incentives as encouragement for using MALL in their class rooms.

vii.   In cities, the educational institutional heads should promote MALL by monitoring teachers regularly.

viii.   Seminars and workshops for students must be organized to introduce them with this technology all around Pakistan.

ix.   There must be a focused plan for implementing MALL in Pakistan.

x.   Apart from big cities, villages and rural areas should also be focused for implementation of this new technology.

REFERENCES

Begum, R. (2011). Prospect for cell phones as instructional tools in the EFL classroom: A case study of Jahangirnagar University, Bangladesh. *English Language Teaching*, *4*(1), 105.

Bork, A. (1985). *Personal computers for education*. New York: Harper & Row Publishers, Inc.

Bransford, J., Brown, A., & Cocking, R. (2000). *How people learn: Brain, mind, experience and school*. Washington, DC: Commission on Behavioral and Social Sciences and Education, National Research Council.

Broos, A. (2005). Gender and information and communication technologies (ICT) anxiety: Male self-assurance and female hesitation. *Cyber Psychology & Behavior*, *8*(1), 21-31. http://dx.doi.org/10.1089/cpb.2005.8.21

Çavuş, N., & İbrahim, D. (2009). M-Learning: An experiment in using SMS to support learning new English language words. *British Journal of Educational Technology, 40*(1), 78-91.

Chang, C.K., & Hsu, C.K. (2011). A mobile-assisted synchronously collaborative translation-annotation system for English as a foreign language (EFL) reading comprehension. *Computer Assisted Language Learning, 24,* 155-180.

Chen, C. M., & Li, Y. L. (2010). Personalised context-aware ubiquitous learning system for supporting effective English vocabulary learning. *Interactive Learning Environments*, *18*(4), 341-364.

Chen, I. J., & Chang, C. C. (2011). Content presentation modes in mobile language listening tasks: English proficiency as a moderator. *Computer Assisted Language Learning*, *24*(5), 451-470.

Chinnery, G. M. (2006). Emerging technologies. Going to the mall: mobile assisted language learning. *Language Learning & Technology*, *10*(1), 9-16.

Fallahkhair, S., Pemberton, L., & Griffiths, R. (2007). Development of a cross☐platform ubiquitous language learning service via mobile phone and interactive television. *Journal of Computer Assisted*

Learning, *23*(4), 312-325.

Gay, G., Stefanone, M., Grace-Martin, M., & Hembrooke, H. (2001). The effects of wireless computing in collaborative learning environments. *International Journal of Human-Computer Interaction, 13*(2), 257-276. doi: 10.1207/S15327590IJHC1302_10

Geddes, S. J. (2004). Mobile learning in the 21st century: benefit for learners. *Knowledge Tree e-journal*, *30*(3), 214-228.

Kukulska-Hulme, A., & Shield, L. (2008). An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL*, *20*(3), 271-289.

Kukulska-Hulme, A. (2013). Mobile-assisted language learning. In C. Chapelle (Ed.), *The encyclopedia of applied linguistics* (pp. 3701-3709). New York: Wiley.

Kukulska-Hulme, A. (2009). Will mobile learning change language learning? *ReCALL*, *21*(2), 157-165.

Laboratory of Comparative Human Cognition (LCHC). (1989). Kids and computers: A positive vision of the future. *Harvard Educational Review*, *59*(1), 73-87.

Lan, P., & Young, S. (1996). International technology transfer examined at technology component level: a case study in China. *Technovation*, *16*(6), 277-286. http://dx.doi.org/10.1016/0166-4972(96)00005-3

Lu, M. (2008). Effectiveness of vocabulary learning via mobile phone. *Journal of computer assisted learning*, *24*(6), 515-525.

Miangah, T. M., & Nezarat, A. (2012). Mobile-assisted language learning. *International Journal of Distributed and Parallel Systems, 3*(1), 309 - 319.

Papert, S. (1980). *Mindstorms: children, computers, and powerful ideas*. New York: Basic Books.

Pecherzewska, A., & Knot, S. (2007). Review of existing EU projects dedicated to dyslexia, gaming in education and m-learning. *WR08 Report to Call Dysc project*. Available at:

http://www.docstoc.com/docs/40115316/WR08-Existing-EU-Projects-review.

Pollara, P., & Broussard, K. K. (2011, March). Student perceptions of mobile learning: A review of current research. In *Society for information technology & teacher education international conference* (pp. 1643-1650). Association for the Advancement of Computing in Education (AACE).

Ragosta, M. (1983). Computer-Assisted Instruction and Compensatory Education: A Longitudinal Analysis. *Machine-Mediated Learning*, *1*(1), 97-127.

Reddy, N. M., & Zhao, L. (1990). International technology transfer: A review. *Research policy*, *19*(4), 285-307.

Roschelle, J. (2003). Keynote paper: Unlocking the learning value of wireless mobile devices. *Journal of computer assisted learning*, *19*(3), 260-272.

Roschelle, J. M., Pea, R. D., Hoadley, C. M., Gordin, D. N., & Means, B. M. (2000). Changing how and what children learn in school with computer-based technologies. *The future of children*, 10(2), 76-101.

Rosell-Aguilar, F. (2007). Top of the pods-in search of podcasting "pedagogy" for language learning. *Computer Assisted Language Learning, 20*(5), 471- 492.

Şad, S. N., & Göktaş, Ö. (2014). Preservice teachers' perceptions about using mobile phones and laptops in education as mobile learning tools. *British Journal of Educational Technology*, *45*(4), 606-618. http://dx.doi.org/10.1111/bjet.12064

Sánchez, R. C., Pérez, A. S., & Gómez, P. C. (2010). An attempt to elaborate a construct to measure the degree of explicitness and implicitness in ELT materials. *International Journal of English Studies*, *10*(1), 103-129.

Sahal, D. (1982). *The transfer and utilization of technical knowledge*. Free Press. http://dx.doi.org/10.1016/0048-7333(81)90008-1

Serin, O. (2012). Mobile Learning Perceptions of the Prospective Teachers (Turkish Republic of Northern Cyprus Sampling). *Turkish Online*

Journal of Educational Technology-TOJET, 11(3), 222-233.

Sharples, M. (2000). The design of personal mobile technologies for lifelong learning. *Computers & Education*, *34*(3-4), 177-193.

Squire, K., & Dikkers, S. (2012). Amplifications of learning: Use of mobile media devices among youth. *Convergence*, *18*(4), 445-464.

Squire, K., Jan, M., & Mathews, J. (2007). The design and use of simulation computer games in education. In B.E. Shelton and D.A. Wiley (eds.), *The design and use of simulation computer games in education* (pp. 264-296). Rotterdam, the Netherlands: Sense Publishers.

Tai, Y., & Ting, Y. L. (2011). Adoption of mobile technology for language learning: Teacher attitudes and challenges. *The JALT CALL Journal, 7*(1), 3-18.

Tayebinik, M., & Puteh, M. (2012). The significance of self-esteem in computer assisted language learning (CALL) environment. *Procedia-Social and Behavioral Sciences*, *66*, 499-506.

Traxler, J. (2007). Defining, Discussing and Evaluating Mobile Learning: The moving finger writes and having writ.... *The International Review of Research in Open and Distributed Learning*, *8*(2), 1-13.

Traxler, J. (2005). MLearning: it's here but what is it? Interactions. *University of Warwick Centre for Academic Practice*, *25*(9), 1-6.

Trifonova, A., Knapp, J., Ronchetti, M., & Gamper, J. (2004). *Mobile ELDIT: Challenges in the Transition from an e-Learning to an m-Learning System*. University of Trento.

Uzunboylu, H., & Ozdamli, F. (2011). Teacher perception for m learning: scale development and teachers' perceptions. *Journal of Computer Assisted Learning, 27*(6), 544-556

Viberg, O., & Grönlund, Å. (2013). Cross-cultural analysis of users' attitudes toward the use of mobile devices in second and foreign language learning in higher education: A case from Sweden and China. *Computers & Education*, *69*, 169-180. http://dx.doi.org/10.1016/j.compedu.2013.07.014

Wang, Y. S., Wu, M. C., & Wang, H. Y. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British journal of educational technology*, *40*(1), 92-118 .http://dx.doi.org/10.1111/j.1467-8535.2007.00809.x