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Mobile Assisted Language Learning: A Literature Review

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I. INTRODUCTION

Technology has become increasingly important in various fields, not the least of which is education. Students arrive in class already familiar with all types of technology and they use them daily especially mobile devices, which are always on the palm of their hands.Smart phones such as IPhones orAndroidshaveledthelearning environment towards mobilelearning.Mobileshave the advantage of expanding language learners' exposure to the target language and allow more flexibility to both teachers and learners. They are popular in languagelearning in the sense of providing students with the opportunity to continue learning outside the classroom in an authentic environment. Research studiesexplored the effectiveness of mobile assisted language learning (MALL) in natural and informal learning environments (Mildren, 2010; Bahrani, 2011; Kurtz, 2012; Tagg, 2012; Xiao-Bin, 2013).Other studies investigated the use of mobiles in formal language classrooms as theydeliver instructional and pedagogical contents to language learners (Amer, 2014; Felicello, 2011; Rinehart, 2012; TabatabaeiandGoojani, 2012; AlemiandLari 2012). To explore the current state of research on MALL, this present paperreviews the past studies on the use of MALLin terms of research methods and findings. Thecurrentbody of literature includes twomain research approaches: content-basedMALLstudies,and design-basedMALL studies (Kukulska-Hulmeand Shield, 2008). But first, the following section will explain MALL and how mobile devices operate for language learning.

II. MALL IN ACTION

In order to implement MALL in a language classroom, one must understand the technical use of mobile devices. When MALL is in action, one of two main techniques is operating;the service of mobile apps (applications),andthetext-messaging service.

2.1. Mobile Apps

Whitney (2010) defined mobile apps as small programs downloaded from an application store either via a computer with internet connection, or from the mobile device itself. These apps can only be viewed via mobile devices. Apps are used for different purposes such as education, social networking, or entertainment, etc. Godwin-Jones (2011) introduced two famous app stores nowadays, Apple App Store and Google Android store. The Apple App Store, integrated into the iTunes Store (http://www.apple.com/itunes), distributes new apps via IPhone and IPad devices. Godwin-Jones (2011) stated that the Apple App Store is wildly successful, with more than 400,000 apps to date. Google Android store, (https://play.google.com/store), has also gained a highly significant number of users and apps (Godwin-Jones, 2011). Educational mobile apps can be useful for language learning.Althoughsome studies have discouragedtheiruse(Felicello, 2011; Moroz, 2013), other studies have promotedit(Amer, 2014; Whitney, 2010; Godwin- Jones, 2011; Rinehart, 2012; Tai, 2012). In addition,Godwin- Jones (2011) explored the state of language learning apps, the devices they run on, and how they are developed. Moreover, Whitney (2010) introduced enjoyable apps such as picture book and story apps for language teachers and young learners.

2.2. Text-messaging

The text-messaging service is available in all types of mobile devices. Text-messages can be delivered throughInstant Messaging (IM), Short Messaging Services (SMS), Enhanced Messaging Services (EMS), and Multimedia Messaging Services (MMS). Text messaging is simply the act of typing and sending electronic messages between two or more mobile devices over a phone network or a wirelessnetwork.Mobile assisted language learning can operate through text-messages. Language learners may benefit from text-messaging as it enhances their language skills. However, there has been a great debate concerning the influence of text-messaging on language; while some studies have proven the negative effects (Rankin, 2010), other studies have suggested the positive ones. (Tagg, 2012)

III. MALL RESEARCH APPROACHES: CONTENT OR DESIGN-BASED?

Research studies on MALL were either concentrated on content or design. A content-based study focuses on formal educational contexts ofmobile-assisted language learning. It mainly concentrates on academic learning and how a pedagogical content is delivered via mobiles to influences learners' language performance and attitudes. On the other hand, a design-based study is concerned with independent mobile-assisted language learningininformallearning environments. It generally focuses on how learners acquire the language casually and by themselves with the use of mobile services (Kukulska-Hulmeand Shield, 2008).

3.1. Content-based MALL studies

Content-based MALL studies are concerned with language learning activities and materials in formal instructivesettings. These studies use mobile devicesas means of delivering educational content to learners (Kukulska-Hulmeand Shield, 2008). One content-based MALL study was conducted by Amer (2014). Amer (2014) developed a mobile software application for English learners in order to learn idiomatic expressions and collocations. The experiment was conducted on 45participantsfor a period of one week. From questionnaires and interviews, data was collected and analyzed. Results indicated learners' positive attitudes towards MALL; learnersfeltthat the application helped them learn more idioms and collocations even in a short period of time (Amer, 2014). However, another study byFelicello (2011) showed contradictory findings. Unlike the previous study, the experimental period lasted for ten weeks. The quasi-experimental study was conductedto investigate and compare the effectiveness of two types of language instruction; one traditional and another with the use of IPod Touch's apps as teaching resources. Fifth grade students were divided into experimental and control groups. As the experimental group learned through apps, the other control group received traditional instruction. The t-test results showed no significant difference between the performances of both groups. The students' responses to the survey indicate neutral or negative attitudes towards the use of apple apps in language classrooms. The researcher concluded that it is important to study thenew technological tools to determine which tool is effective and worth the financial investment. Therefore, Godwin- Jones (2011) provided language educators with practical ideas concerning various language learning apps and how they are developed to meet the learners needs.However, a language learning mobile app was implemented in a study by Rinehart (2012). The study explored the effectiveness of using ane-flash cardsappto students' vocabulary comprehension. The study's participants were divided into two groups; one group used an e-flash cards app, and another used paper flash cards. From quantitative and qualitative data analysis via t-tests and interviews, findings showed no significant difference between the groups comprehension performance. As for the students' attitudes towards the use of mobile apps, they were highly positive at first, but their enthusiasm decreased as the one month study went on. Rinehart (2012) suggested further studies to focus on novelty and new techniques of MALL to keep students' enthusiasm going. Accordingly,Tai (2012) aimed to demonstrate a MALL design in order to motivate students and enrich language learning. The researcher conducted a small-scale study to evaluate the effects of task-based contextualized MALL practice. The communicative aspect of the mobile device was applied to create a motivating task within authentic contexts to support and engage students in language learning and practice.Thestudy's results suggest that this practice can improve language learning and learners' attitudes. Not only language learners' attitudeswere measured, but also their self-efficacy was explored in another study by Walters (2012). Walters (2012) explored the relationship between mobile learning and English language learners' self-efficacy in reading. Through surveys and interviews, students' beliefs about reading were analyzed. Findings show a significant high level of self-efficacy in reading for the experimental group due to mobile learning.

Another approach to MALL was simply via text-messaging. TabatabaeiandGoojani (2012) investigated the effectiveness of text-messaging on vocabulary learning of EFL learners. The study's participants were sixtyIranian high school students. They were divided into two equal groups of experimental and control. Six to seven words were introduced and taught to these students each session. Both groups were required to write sentences about each word, but each used a different method. The experimental group sent the researcher text-messages of the required sentences, while the control group wrote the sentences on paper and submitted it in the next session. From t-test analysis, findings indicated that the experimental group outperformed the control group. TabatabaeiandGoojani (2012) concluded that text-messaging is an effective and flexible learning tool in language classrooms. One more study by AlemiandLari (2012) used a similar approach to promote reading comprehension with the use of SMS as a vocabulary learning tool. Their (2012) study was conducted on 45 college students who were divided into experimental and control groups. Both groups took pretests on vocabulary and reading comprehension. Forsixteenweeks, the experimental group was taught 320 new words via SMS. The control group learned them by using a dictionary. AlemiandLari (2012) concluded that the post-tests' results indicate thatboth groups improved in reading comprehension, but the experimental group outperformed the control group in the post-test. As for the participants' attitudes towards SMS vocabulary learning, theyexpressed favorable attitudes towards this approach.They (2012) promoted MALL in language classrooms

and recommended the use of the text-messaging service as a vocabulary learning tool to enhance reading comprehension skills.

The reviewed studies in this section were content-related; they were concerned with how content was delivered to language learners and how effective the process was on their language performance and attitudes. Some contents were delivered through mobile apps such as e-flash cards; other contents were transmitted through text-messages. There were positive and negative findings regarding the effect of MALL on learners' language performance and attitudes. However, most of the reviewed studies promote MALL in language classrooms.

3.2. Design-based MALL studies

Design-based MALL studies deal with design issues and learner needs. They concentrate on how learners acquire the target language in informal natural settings.Bahrani (2011) stated that anyone can learn English language even if he/she cannot go to language classes. Therefore, Bahrani (2011) reviewed the literature on MALL in informal language learning setting, and suggested technology-besed design considerations for language learners who want to learn by themselves. Another study by Kurtz (2012) explored how language learnersusesmartphones daily for language learning. The participants of the study were three non-native speakers of English. They were interviewed over a six-week period in order to understand their attitudesand habits regarding their smartphone use. The study concluded that these learners have positive attitudes towards MALL, and they use their smartphonesregularlyfor dictionaries, educational apps, and communicationpurposes. Concerning educators' attitudes towards MALL, they were investigated in eight European countries by Demirbilek (2010). The participantsofDemirbilek's (2010) study were educators of adult learners (the term adult is used to mean older than traditional college students). To explore the educators' attitudes and perceptions towards the use of mobile games in education, 113 surveys were conducted in eight European countries.The results of this study showed that adult educators use puzzles, quizzes, matching and simulation mobile gamesfor language education. Moreover, findings revealed that 76% of adult educators from all the eight countries expressed favorable attitudes towards MALL. As for the students' attitudes towards MALL, another study by Humble-Thaden (2011) was conducted toinvestigatehigh school junior and senior students' perception of their school policies of banned mobile usage, and their perception of cell phones as possibleeducational learning tools. Findings revealed students favorable attitudes towards the use of mobiles within the classroom as possible learning tools. However, contradictory attitudes were found in Moroz's (2013)study results. Moroz (2013) explored whether students and teachers were aware of Japanese language learning apps. Findings showed that most students were not aware of these apps, and that very few teachers introduced these apps to their students. Participants of the study explained that they didn't find a language learning app that fulfills their learning needs. Nevertheless, these educational apps are available and effective for language learning. Apple tablets apps were explored by Xiao-Bin (2013), who investigated how students used these tablets to learn English in informal settings outside of classroom. The researcher concluded that tablets are ideal tools for independent language learning. Xiao-Bin's (2013) results showed students' favorable attitude towards language learning apps and recommended language educators to look into these apps for effective language education.

In addition to mobile apps, a different mobile service contributes to language learning that is text-messaging. Mildren (2010) examined habitual text-messaging among high school students and its' impact on their language performance. The study's results indicated that higher use of text messaging can have a positive impact on students' writing performance. Moreover, Sweeny (2010)suggested that text-messaging can make writing more meaningful and engaging for students of the digital era. However,Rankin(2010)suggested the negative influence of text-messaging on students' academic writing performance. Rankin (2010) stated thatthestudents' academic writing assignments include the language shortcuts used in text-messages.Rankin's (2010) qualitative study was conducted to determine if the use of shortcuts has a negative impact on students' spelling and grammar skills. Data was collected from 25students' interviews and graded compositions. Findings suggest that the participants' academic writing assignmentsincluded the language shortcutsusedin their frequent text-messages. As for the students' responses in the interviews, they agreed that language shortcuts have negatively influenced their spelling skills and caused academic deficiencies. Yet, Tagg (2012) saw the language of text-messages from a different point of view. Tagg(2012) explained text-messaging as a creative practice. A corpus of almost 11,000 text messages was collected by Tagg (2012) for three years for analysis. Tagg's (2012) findings illustrated various examples of creativity such as idiom manipulation, wordplay, and punning. Tagg's (2012) study suggested that research into the effects of text-messaging on literacy should be extended to take into account these forms of creativity.Tagg's (2012) large-scale study is considered a revolutionary one among all MALL research studies.

This section reviewed design-related MALL studies that focus on how language learners acquired the language naturally with the use of mobiles and how effective that was on their language performance and attitudes. Some independent learners used mobile apps for language learning such as dictionaries; others were influenced from the use of text-messaging in terms of writing skills. There were positive and negative findings

regarding learners' language performance and attitudes. However, most of the reviewed studies here promote MALL for independent language learning.

IV. CONCLUSION

Recently, mobile technology has become important in language education. The students' frequent use of mobile devices, such as IPhones or Androids, has drawn the attention of educators towards MALL. MALL introduced various definitions of learning; mobile learning, independent learning, and authentic learning. The use of mobiles is flexible to language teachers and learners regarding the time and place of learning. In addition, mobile devices are currently full of interesting and attractive gadgets that would contribute to transforming the learning environment into a fun atmosphere.

The current paper's aim and findings concur with the literature review on MALL reported by VibergandGrönlund (2012). Although this current study reviewed studies that are different from the ones mentioned in VibergandGrönlund's (2012)study, both came to the same conclusion regarding MALL's research approaches, methods, and findings. VibergandGrönlund (2012)reviewed the literature on MALL during the period 2007 - 2012. VibergandGrönlund's (2012)findings show that MALL studies suggest the positive effect of mobile technology on learners' second language acquisition. VibergandGrönlund's (2012)results also show that most of the reviewed studies were experimental, small-scale, and conducted within a short period of time. As for the influenced linguistic knowledge and skills, VibergandGrönlund (2012)reviewedresearch studies investigated learners' vocabulary acquisition and language acquisition in more general terms. Similarly, this current paper aimed to review the literature on MALL. The present paper found different MALL approaches; design-based studies of informal learning (Mildren, 2010; Bahrani, 2011; Kurtz, 2012; Tagg, 2012; Xiao-Bin, 2013), and the content-based studies of formal classroom learning (Amer, 2014; Felicello, 2011; Rinehart, 2012; TabatabaeiandGoojani, 2012; AlemiandLari 2012). The reviewed studiesusedeithermobile apps or text-messaging services to measure their effectiveness on students' attitudesandlanguage acquisition. Regarding the reviewed studies' methods in this present paper, they can be described the same wayVibergandGrönlund (2012) described them asshort-scale studies. The findings of these small-scale studies may not be reliable with the rapid advancement of mobile technology. Just as the results of some studiessuggestthe lack of language learning mobile apps,these apps would easily appear soon with thousands of apps showing up every second. Mobile devices such as smartphones and tablets are rapidly developing every couple of months. In order to keep track with the new advancements of mobile technology, further MALL studies on alarge-scaleexperimentwould bring out reliable and comprehensive findings. It would be beneficial to conduct experiments that test the effectiveness of mobile devices on all language skills and aspects.It would also be helpful if further studies were conducted on large groups of participants in a long period of time.FurtherMALL research studies are needed to be consistent with the rapid development of mobile technology for the sake of educating the new digital generation. Smart phones and tablets are the new and popular trends of the twenty first century that cannot be ignored by educators.

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