

Issues Pertaining to Mobile Assisted Language Learning in the Classroom

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Abstract

This paper functions primarily as a review of the ten principles suggested by Stockwell and Hubbard (2013) in a paper commissioned by The International Research Foundation for English Language Education. The ten principles (Stockwell & Hubbard, 2013) are suggestions made by the researchers regarding Mobile Assisted Language Learning (MALL) and its use in the classroom. The current author seeks to find support in language teaching and MALL literature for the ten principles. After the investigation it was found that the literature mostly supports the ten principles asserted in Stockwell and Hubbard (2013). However, the author found insufficient evidence to support principle seven which recommends that activities and tasks specifically utilizing MALL should be short in duration. Overall, the ten principles serve as a good guideline for language teachers wishing to apply MALL to their classroom situations.

Keywords: *Mobile Assisted Language Learning, CALL, technology*

Introduction

In an age of ubiquitous use of mobile devices encompassing many facets of work and daily life as well as the increasing connectivity possible between

people made available through the internet, the field of TESOL has often struggled with the presence and use of technology in the classroom. Japan, in particular, is often touted as one of the most technologically advanced and mobile friendly countries in the world. In one study surveying 162 university students at a private university in Japan, it was found that 100% of students attending an English class owned a mobile phone with 85% of those students owning a smartphone as of 2012 (White & Mills, 2014). Despite this, there has been relatively little research on the effects of mobile devices in the classroom (Burston, 2013).

In practice, Mobile Assisted Language Learning (MALL) can be defined as the utilization of handheld, portable, or wearable instruments with the intention of learning language (McCarty, Sato, & Obari, 2017). Thus MALL covers a broad range of methods and technological systems used for a variety of learning purposes both inside and outside of the classroom. MALL has been utilized for many purposes including but not limited to target vocabulary acquisition, the reading and tracking of graded readers, mobile website building, pronunciation exercises, and listening exercises (McCarty et al., 2017). Devices used in MALL can range from clickers and software used for online polling to mobile devices, tablets, ipads, and laptops. These can be provided by the institution or they can be devices belonging to the students themselves.

The need for guidelines

All considered, there are many different applications and usages for the devices and practices falling under MALL. That said, MALL is a relatively new field and there is still debate about how it can be instituted in learning

environments. A 2012 survey of 162 students studying at a university in Japan found that 78% of students believed smartphones to be helpful or very helpful in learning English (White & Mills, 2014). However, in the same survey, just 7% of students reported using their devices for educational purposes. Although students and educators alike recognize the great potential in MALL, they often don't engage in or don't know how to engage in MALL. Perhaps even more worrying is the tendency for institutions to implement mobile devices into curricula without adequate research, trials, or training.

Therefore, it can be useful to abide by a set of principles and guidelines when deciding how to implement MALL into an educational program or classroom. One such set of principles was proposed by Stockwell and Hubbard (2013) in a paper commissioned by The International Research Foundation for English Language Education. This paper proposed ten principles for educators seeking to use mobile devices in education. The purpose of the current paper is to review research related to the ten principles suggested by Stockwell and Hubbard. It is hoped that this research will allow educators to weigh the evidence regarding Stockwell and Hubbard's principles and adopt similar principles in their own classrooms and curricula.

Principle one

Stockwell and Hubbard's first principle indicates that educators need to be aware of the limitations inherent to using certain technology. Educators must then consider how to implement the technology given the restrictions of the environment it will be used in. One area of concern about MALL is the

relatively small screen size and keyboard input size. This physical limitation has the potential to cause challenges in inputting characters particularly when those characters being used are not typically used in the learner's L1 (Stockwell & Hubbard, 2013).

In one particular study, it was found that students of a Japanese university faced some technical challenges in typing messages in English (McCarty et al., 2017). In this case study seven students engaged in English messaging through the social networking application LINE. The students were instructed to choose a topic every few days and then share messages, opinions, and photos about the topic using English. Findings indicated that the students were not accustomed to using a QWERTY keyboard and instead often wrote messages by flicking the English characters in a manner adapted from Japanese mobile device input. This may have contributed to some students' hesitation to participate in messaging and therefore lower their chances for language learning.

Three university instructors from both public and private institutions were interviewed in another study (Gikas & Grant, 2013). Next, between two and four students who underwent mobile assisted instruction in the classes of each instructor were also interviewed. The interviews aimed to investigate students' perceptions and experiences with using mobile devices for language learning. One noted area of frustration for participants was the small keyboards. These made writing out long responses laborious. These technical issues were echoed in Begum's (2011) study of 100 English L2 learners in a Bangladeshi university. In addition, technical difficulties were encountered in using some applications on the mobile devices. However, most technical difficulties were solved through collaboration between teachers and students or simply using another application.

A possible solution for the physical size issues related to MALL is the use of tablets for collaboratively learning in the classroom. Tablets are large enough for easy viewing and sharing yet lightweight and small enough to be shared between multiple students (Rossing, Miller, Cecil, & Stamper, 2012). Interconnectivity also allows students to use individual tablets for learning (Rossing et al., 2012). Some scholars recommend iPad tablets as the ideal tool for informal learning, and that educators should encourage their use in the classroom to promote autonomy in combining formal and informal learning (Godwin-Jones, 2011).

Hashim, Yunis, and Embi (2018) surveyed 194 polytechnic students in Malaysia about the advantages and challenges of using mobile technology for English learning. One of the primary concerns expressed by the students was limited access and sometimes inability to access the internet even at their schools. Although it was reported that mobile devices retained some functionality even without the internet, language learning was sometimes hindered by the lack of internet access (Hashim et al., 2018).

Principle two

Stockwell and Hubbard's second principle advises restricting multitasking and distractions in the environment. This is due to higher stress levels, more errors, and lower general productivity due to multitasking attempts (Stockwell & Hubbard, 2013). Stockwell and Hubbard advise learners to avoid multitasking in both classrooms and the workplace as it inhibits both intentional and incidental language learning.

Qualitative evidence indicates that some students believe that mobile technology can serve as a distraction during classroom instruction while

other students found that mobile technology can increase opportunities for learning through augmented social interaction (Gikas & Grant, 2013). Some interviewees suggested that while mobile devices could be distracting, students could quickly return to the activity at hand, although this contradicts Stockwell and Hubbard's suggestions about multitasking.

Other studies suggest that while mobile devices offer many advantages, they also tend to come with disadvantages in the form of distraction (Begum, 2011; Dahlstrom, Brooks, Grajek, & Reeves, 2015; Hashim et al., 2018; Hismanoglu, Ersan, & Colak, 2017; Zhang, Song, & Burston, 2011). An online survey of 50,000 students studying in America distributed between 162 institutions found that 37% of students used mobile devices for activities not related to the class while in class. This is in spite of 41% of respondents finding this practice to be distracting for themselves, 49% finding it distracting for other students, and 54% finding it distracting for the instructor (Dahlstrom et al., 2015).

Teacher interviews from teachers in Bangladeshi and Turkish classrooms indicated that students sometimes used their devices for gaming or sending messages not related to classroom activities (Begum, 2011; Hismanoglu et al., 2017). They also expressed concern that students may use mobile devices for cheating. However, another teacher interview study conducted by Waldren (2019) showed mixed results. In this study, 36% of teachers agreed or strongly agreed, 33% of teachers disagreed or strongly disagreed, and 30% of teachers were neutral when answering a question about whether it was difficult to manage or discipline students using mobile devices in the classroom.

Even using SMS to send vocabulary review items proved distracting for some students (Zhang et al., 2011). Although, the experimental group which

received the vocabulary through SMS scored better than the control group which received vocabulary through paper, the results were not durable and students quickly forgot many items (Zhang et al., 2011).

Principle three

The third principle of Stockwell and Hubbard concerns the push mechanism, which is a form of inducing action on the part of the learner through mobile device notifications (Stockwell and Hubbard, 2013). Stockwell and Hubbard recommend judicious use of the push mechanism while respecting and maintaining the privacy of learners.

There are cases in which learners feel negatively impacted by an excessive number of notifications (Zhang et al., 2011). In this study, some students remarked that over time it became time consuming to check each message, and earlier vocabulary sets were difficult to locate within the mobile devices due to the excessive number of messages.

A study conducted by Klimova (2019) studied the usefulness of a newly developed mobile application used for vocabulary review in a language course for Czech third year university students. The teacher, utilizing the application in their class, sent push notifications twice a week to students in order to encourage them to learn and review vocabulary items. In total, 16 notifications were sent. It was found that the application had a largely positive effect and despite the frequent notifications, students in the experimental group achieved significantly higher test scores than students in the control group. This study shows that push notifications used in conjunction with mobile app learning can be used to great effect in vocabulary acquisition when sent twice per week and seems to contrast with

the findings of Zhang (et al., 2011). However, the research does not make clear the optimal number of push notifications.

Giving time and opportunity for students to take appropriate action is advisable and learners might benefit from accessing information using existing social networks. Social networks often utilize push notification systems which can be opted in or out of by the user. However, the user may be more familiarized and able to access all of the push notifications on the same platform, enabling them to take action on the notification at a time of their convenience. Allowing students to express and share in knowledge creation via LINE groups or twitter hashtags at their own discretion proved useful for some students (Gikas & Grant, 2013; McCarty et al., 2017).

Principle four

Stockwell and Hubbard's fourth principle addresses the potential for inequity in learning opportunities. Students coming from families of higher socioeconomic status are shown to outperform students of lower socioeconomic status in terms of language learning through means of private tutoring, attending language schools, and parental involvement (Mattheoudakis & Alexiou, 2009). Despite this, the recent omnipresence of mobile devices with data plans in many countries, even among school children may have evened the playing field somewhat in recent years. Nevertheless, Stockwell and Hubbard articulate the importance of the educator's awareness of their pupils' mobile device ownership and propose that alternative instruments be provided where necessary.

One study comparing language learning between students of different socioeconomic statuses utilized mobile devices called the teachermate for

teaching Spanish literacy skills to 160 second grade Mexican children (Kim et al., 2011). Students from the higher income but rural school improved their literacy achievement scores to a higher degree than the students from the lower income but urban school. This study suggests that students of higher income families benefit from MALL to a greater degree than students from lower income families. Interestingly, students living in the urban area reported greater access to computers and technology in their daily lives than the rural but richer students (Kim et al., 2011). The effects of socioeconomic status and access to technology need to be researched further in order to determine what additional factors might contribute to learning differences.

Principle five

The fifth principle of Stockwell and Hubbard's guidelines for MALL addresses the need to be aware of and accommodate different learning styles which may be present in the classroom. Learning styles involve the categorization of learners into groups based on how a learner processes information from stimuli (Wong, Hsu, Sun, & Boticki, 2013). The differentiation between students who prefer learning in public or private settings also falls under this principle (Stockwell & Hubbard, 2013).

Evidence suggests that learners with different learning styles are impacted differently by MALL (Wong et al., 2013). A study of 31 Singaporean learners of Chinese engaged in learning orthography via a game involved collaboration and the use of mobile devices. It was found that learners with different learning styles such as active, reflective, intuitive, and sensing styles achieved differing language learning results. While active and

intuitive learners tended to take on a leadership role in finding the correct Chinese orthography, reflective and sensing learners tended to take on an invitee role. Though the reflective and sensing style learners achieved significantly better language learning outcomes, the researchers commented that the collaborative nature of the activity led to positive learning outcomes for all participants.

A study on the effect of anxiety derived from recording environment suggests that most students prefer to record their speech via MP3 player in a private setting rather than in a laboratory setting (Kessler, 2010). Kessler used a sample of 40 English L2 graduate students from a university in America with differing L1s. A preference for recording weekly audio journals in a private setting was expressed by 38 of the 40 students. Additionally, fluency scores as judged by two trained raters, found that private recordings scored higher in four fluency measures than laboratory recordings. However, the two students who expressed a preference for the laboratory setting did not speak significantly more fluently in their preferred learning environment. This study suggests that students have preferred learning environments and that efforts should be made to accommodate these preferences (Kessler, 2010).

Another study conducted by Polakova and Klimova (2019) looked at the possibility of utilizing the mobile language learning app *Kahoots* for vocabulary acquisition among Central European vocational secondary school students. 20 second year gastronomy and tourism majors participated in quantitative and qualitative measures. Post tests showed that using the language learning app led to significantly higher vocabulary improvement compared to a control group. However, a qualitative survey indicated that students had varying opinions on the usefulness of the app. For example 40%

of experimental group participants strongly disagreed that the app had helped them to learn vocabulary better. In a question asking if the participants found using the application more enjoyable than methods used in the past 30% strongly agreed, 30% agreed, and 40% strongly disagreed with the statement. This study seems to indicate that students have diverse attitudes with regards to using MALL for learning new vocabulary, and it is important for teachers to accommodate the different learning preferences students may display.

Principle six

Stockwell and Hubbard's sixth principle states that learners may have differing expectations from educators about the role and appropriate use of mobile devices for learning. Some students may see mobile devices as an instrument meant for social and leisure activities rather than educational activities (Stockwell & Hubbard, 2013). It is suggested that new skills for certain applications may require instruction, however, activities analogous to learner perceptions for mobile device usage will be more readily accepted (Stockwell & Hubbard, 2013)..

A study of 45 students from seven different cultural backgrounds found that attitudinal differences toward the use of mobile devices for language learning purposes existed between different cultures (Hsu, 2013). However, after taking a course involving MALL, students from all cultural backgrounds reported confidence in knowing how to use MALL to improve English ability. Additionally, learners who engaged in the usage of social networking applications for collaborative learning in a manner consistent with the common usage of these applications reported positive educational

experiences (Gikas & Grant, 2013).

Although learners from certain cultural backgrounds may have favorable attitudes towards MALL, that does not mean that they tend to use mobile devices for educational purposes very frequently. For example, 78% of Japanese learners believed smartphones could be helpful or very helpful for learning English, despite just 7% of learners reporting doing so in surveys conducted in 2012 (White & Mills, 2014).

Principle seven

Stockwell and Hubbard's seventh principle states that activities used in conjunction with MALL should be short in duration. Longer activities can also be broken down into several shorter ones. One potential advantage of shorter activity times is the ability to return to assigned exercises as quickly as possible when interruptions and breakdowns in concentration occur (Stockwell & Hubbard, 2013).

In fact, there are few studies investigating the effects of different task lengths in MALL research. In one study which scrutinized the accessing of English language exercises by Japanese learners outside of the classroom, a 20-minute lesson was divided into question items which would take 20 to 30 seconds each to answer, and distributed online (Stockwell, 2013). This design was deliberate so that learners could take quick advantage of short openings of time available to them such as while in transit. Although many participants reported using mobile devices for learning purposes while in transit, in fact, records showed that most learners did not engage in use of their devices for learning while in transit. Instead, they preferred to use their mobile devices to study at home as evidenced by the recorded data

(Stockwell, 2013). The majority of students opted not to complete the exercises on their mobile devices and instead completed them on PCs, which can be interpreted to mean that students may not be able to concentrate during short periods of time such as while in transit. Instead, it might be beneficial for students to set aside longer periods of time for focused language study.

The evidence from this study seems to suggest that shorter activity time does not lead to increased engagement in learning activities in MALL, at least outside of the classroom. However, more empirical research is needed in order to further develop theories about activity duration and student engagement specifically for MALL classroom situations.

Principle eight

Stockwell and Hubbard's eighth principle addresses finding tasks which fit both the technology and environment used for language learning. Indeed, there are opportunities to learn language both inside and outside of the classroom. Using appropriate technology suited to the environment is vital for successful learning. In fact, there is evidence suggesting that MALL can be equally effective in both formal and informal settings (Sung, Yang, & Lee, 2017).

One potential advantage of MALL is the ease of access afforded by a mobile device. Traditionally, the classroom has been seen as the center of learning and the location from which knowledge is created and distributed. However, the portable nature of mobile devices implies that learners do not have to suffer from the location based issues of fixed computers and can take advantage of direct interactions with real world artefacts (Kukulska-

Hulme & Shield, 2008). This allows learners to exercise their own autonomy and engage in language learning at their own discretion.

In a study of 30 English L2 learners in Korea, it was found that setting up a website and forum to facilitate discussion allowed for the learners to participate in listening activities at their own accord (Nah, White, & Sussex, 2008). The learners took part in a three phase listening activity outside of the classroom. Afterwards, surveys indicated that the learners found this type of autonomous listening activity to allow for increased comprehensible input, negotiation of meaning, and comprehensible output as opposed to listening activities inside of the classroom.

In a study conducted in Taiwan, 72 fifth grade students participated in a five week course investigating the effects of learning with a PDA outdoors (Liu, Tan, & Chu, 2009). The experimental group participants engaged in problem based learning through a series of outdoor activities related to wetland ecosystems via their PDAs. The control group participated in traditional learning activities indoors by readings books and filling in worksheets. Test scores and interviews indicated that the experimental group students attained higher levels of wetland ecosystem knowledge and displayed higher levels of motivation compared with the control group. In addition, learners who engaged in learning with the PDAs outside of the classroom were able to express themselves more creatively (Liu et al., 2009).

Principle nine

Stockwell and Hubbard's ninth principle asserts that learners need training and practice in order to use mobile devices for language learning purposes. Although learners may be cognizant of the usage of mobile

devices for private purposes, they need to receive guidance on how to partake in MALL effectively while avoiding the possible pitfalls such as environmental distractions and multitasking (Stockwell & Hubbard, 2013).

Some studies show that although students are often highly proficient in the use of technology, they might benefit from receiving further training in MALL (Abdous, Camarena, & Facer, 2009; Chen, 2013). One study consisted of 113 participating students receiving French, German, Spanish, Japanese, or English L2 instruction (Abdous et al., 2009). The learners participated in classes with podcasting integration or podcasting used as supplementary material. Students were then provided with information on where and how to access podcasts in their free time. Afterwards surveys indicated that 35% of students did not download any podcasts for their classes and 40% indicated downloading podcasts less than once a week. The researchers speculated that learners did not have the technical knowledge to download podcasts or at least lacked confidence or proficiency in using podcasts, stating that in-class training would be beneficial (Abdous et al., 2009).

In Chen's (2013) case study, ten L2 English university students in China were given free access to Android tablets for the duration of the four-week study. The purpose of the study was to investigate how learners would use the tablet outside of the classroom for language learning. The study consisted of two plan, action, and reflection cycles. After the first cycle, the students participated in a semi-structured group interview to reflect on their tablet usage and formulate new plans for tablet usage. Some students reported a lack of understanding and knowledge of technical functions. The researcher created and shared a question and answer document addressing and solving most of the technical issues. Students were also guided in using the tablets for more collaborative language learning functions such as social

networking and blogging. At the conclusion of the four week study students reported that the tablets were easy to use and were satisfied with their language learning. This case study demonstrates that students who are given tablets with little guidance and support may struggle with technical issues and ideas for how to use tablets for collaboration and communication (Chen, 2013). Therefore, guidance can be useful in showing students effective ways to engage in MALL.

Principle ten

Stockwell and Hubbard's tenth principle explains that training, support, and preparation should be provided to educators and other stakeholders involved with MALL. The positive and negative impact of MALL and resultant productivity should be carefully considered to ensure that MALL is effective (Stockwell & Hubbard, 2013).

One of the primary challenges cited in Begum (2011) and Gikas and Grant (2013) with regards to learning via mobile devices, was the tendency for some university instructors to be *anti-technology*. It was thought that some instructors found mobile devices to be distracting to students while others simply lacked the training and expertise to make use of applications and systems made available by their universities. Providing training and support for these instructors could aid them in augmenting their classes with mobile devices.

Waldren (2019) surveyed 267 teachers using a google forms survey and found that 66% of teachers agreed or strongly agreed with a statement indicating that they needed more training in using mobile devices for language learning purposes. In-service teacher training programs are one

way to enact training and support for teachers seeking to become more proficient in MALL (Kassem, 2018). Ten Saudi Arabian EFL teachers underwent a four week in-service teacher training program consisting of training in the utilization of four mobile applications. The applications *Quizlet*, *Digital Vocabulary Notebook*, *Digital Video Games*, and *Online Dictionaries* were demonstrated and practiced during the teacher training. In class observational surveys conducted by administrators indicated that the applications were used effectively and in line with the training provided to the teachers. Vocabulary posttests exhibited a clear improvement in vocabulary knowledge of the students. It could be concluded that in-service teacher training successfully aided teachers in becoming more adept in MALL (Kassem, 2018).

Discussion

There is still much research which must be done before solid conclusions can be made about the best practices and usages of mobile devices for language learning. In an age of ever increasing usage of mobile devices outside of the classroom, research about how to use mobile devices in the classroom remains sparse. This is rather surprising, considering that many educational programs and institutions have begun to implement and even require mobile devices to be used by students for language learning purposes both inside and outside of the classroom. It is important for educators to weigh the potential benefits and drawbacks of mobile device usage in the classroom. Guidelines such as Stockwell and Hubbard (2013) offer a great starting point going over a wide range of considerations important in deciding how to implement MALL into curricula and

classrooms. However, some issues regarding MALL remain poorly studied.

Activity duration of MALL activities lacks empirical research to suggest that shorter activities are beneficial and more likely to be completed during short pockets of time available to students. Research conducted by Stockwell (2013) seemed to suggest students preferred to set aside larger blocks of time in order to devote mental resources to the activity at hand while at home. In addition, the students preferred to use PCs at home rather than mobile devices while in transit to access the activities.

Another area of MALL which deserves further research is multitasking and distraction. Stockwell and Hubbard advocate the restriction of multitasking activities in the classroom and minimizing distraction for students. However, the existing research is mixed in regards to whether multitasking and distractions can inhibit classroom learning. Interviews and surveys examining the opinions of students find that about half of students believe that multitasking can be distracting for teachers or other students while half of students do not find multitasking on mobile devices to be distracting and in fact can be beneficial to learning (Dahlstrom, et al., 2015; Gikas & Grant 2013). Additionally, teachers find that mobile devices can lead to distractions such as playing mobile games in class, and many teachers advocate banning the usage of mobile devices in the classroom (Begum, 2011). Most research in this area remains qualitative so further research which implements statistical methodology is needed to determine the accuracy as well as the specifics on the effects of multitasking and distractions on students engaging in MALL.

Despite these two areas of concern, there is generally good support in the MALL literature for the remaining eight principles provided by Stockwell and Hubbard. The next step should be to test each of the principles more

rigorously using quantitative measures, control groups, and longer term studies. Finally, equipped with more in depth research and perhaps the inclusion of principles suggested by other scholars, a framework for MALL implementation could be created in the future.

Conclusion

Stockwell and Hubbard's ten principles offer a constructive set of guidelines that educators can consider in the implementation of MALL to their curricula. The principles cover a wide range of suggestions and potential issues that should be examined and evaluated before deciding on implementation policies concerning mobile devices. Despite this, there remains room for further investigation. In particular, there is little in the way of long-term studies using highly reliable statistical methodology in the realm of MALL research. After an extensive review of MALL literature published between 1994 and 2012, Burston (2013) claimed that the existing literature possessed few statistically valid measures of positive language learning despite widespread claims of success. It stands to reason that researchers should conduct more rigorous forms of research, and educators should take this research into account before implementing MALL into their institutions.

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