THEORETICAL IMPLEMENTATIONS OF VARIOUS MOBILE APPLICATIONS USED IN ENGLISH LANGUAGE LEARNING

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Abstract

This review of the theoretical framework for Mastery Learning Theory and Sense of Community theories is provided in conjunction with a review of the literature for mobile technology in relation to language learning. Although empirical research is minimal for mobile phone technology as an aid for language learning, the empirical research that exists positively points toward mobile phone technology as a tool that is becoming more widely used and accepted by second language teachers. A conceptual application of the theoretical frameworks is applied to the use of mobile phone technology as a teaching aid for language learners, with the conclusion that there is an overlap worth researching empirically.

Keywords: mobile phone technology, language learning, Mastery Learning Theory, Sense of Community

1. Introduction

Mobile technology continues to encompass a broader and broader area of accessibility from a single device in the palm of one's hand. This expansion includes, but is not limited to, social network technology, texting, the Internet, virtual realities and online learning tools through the use of various devices. The review of the literature includes a summary of many of these uses of technology as it pertains to certain theoretical frameworks, such as Mastery Learning Theory and Sense of Community Theory as they relate to learning a non-native language.

With the knowledge of mobile technology in relation to these learning theories, educators and learners can test these types of learning applications to aid in learning English as a Second Language. These learning tools can also be applied to other languages as desired. Knowing what tools exist can help learners to enhance and broaden their language acquisition.

2. Theoretical frameworks

There are three theoretical frameworks that build the foundation for utilizing mobile technology with language learners, namely Bloom's (1968) Mastery Learning Theory, McMillan's and Chavis' (1986) Sense of Community Theory, and Rovai's (2009) Online Sense of Community Theory. Each provides a segment of understanding for language learners and mobile technology. Explaining each theory and how it connects to mobile technology and language learning provides a greater understanding of the benefits of mobile technology with language learners.

2.1. Mastery Learning Theory

Bloom's (1968) Mastery Learning Theory "holds mastery constant and allows time to vary while traditional instruction holds time constant and allows mastery to vary" (Bei Zhang, 2010, p.91). Bloom believed that over 90% of students can master content given the right context and learning tools for their learning style, even with a learning difficulty or disability present (Bei Zhang, 2010). In applied Mastery Learning Theory, students are provided with a variety of instructional procedures utilizing varied forms of interaction, learning and instruction. Teachers are expected to cater for a variety of students' learning styles, rather than students catering for teachers' teaching styles.

This was a shift in educational thinking and practice in the 1960s because teachers had been all providing the same type of teaching style and assignment and assessment requirements for students in the same time allotment (Bei Zhang, 2010). Students who did not master the material had been thought to be either lacking effort or incompetent in their learning abilities. The fault or responsibility had rarely been placed on the teacher at that point.

2.2. Sense of Community Theory

Sense of Community was originally conceptualized by McMillan and Chavis (1986) and was developed to empirically-based research by Chavis (1986). McMillan and Chavis (1986) defined community as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). They also determined the vitality of community to a person's very being. "Each of us needs connections to others so that we have a setting and an audience to express unique aspects of our personality" (McMillan, 1996, p.1). According to McMillan and

Chavis (1986), Sense of Community is a basic need of every person and does not exclude the classroom or a learning environment. There is also a spirit of belonging together, an authority that can be trusted, an awareness that trade and benefits come from being together, and sharing experiences becomes an art (McMillan, 1996).

2.3. Online Sense of Community (Rovai, 2009)

Sense of Community is a necessary component not only of humanity (McMillan & Chavis, 1986), but also of the world of education in the virtual sense (Rovai, 2009). Rovai (2009) has applied this theory with his Classroom Community Likert scale measurement tool that has been implemented into empirical research for various qualitative and quantitative studies with virtual learners. Rovai's findings (2009) suggest it makes a difference in a student's perception of involvement in the learning experience and can ultimately impact the learning achievement outcome and satisfaction of students taking a particular course online (Rovai, 2009). The need for a sense of community does not exempt any ethnicity, gender, or age group, and is also valid with English Language Learners in the classroom, and is desired in an online community.

Rovai (2009) has also implemented his Classroom Community Likert Scale into Distance Education and the virtual learning classroom. Many researchers and theorists in the world of education are trying to create methodologies, criteria, and curriculum guidelines for fostering a sense of community in the virtual classroom, because a sense of community affects performance, satisfaction and retention in virtual programs. However, the question that arises after a literature review is whether traditional classrooms also need a virtual sense of community. Rather than solely researching how to create a sense of community into the virtual classrooms, how does bringing a virtual sense of community aid in performance, perceived sense of community, and retention in the traditional classroom, specifically for language learners?

3. Mobile-Assisted Language Learning (MALL) – from mobile phones to tablets

In addition to mobile phones, there are other mobile devices that can be utilized for language learning in many of the same ways that phones are used. Mobile-Assisted Language Learning (MALL) is defined as "formal or informal learning mediated via handheld devices which are potentially available for use anytime, anywhere (Kukulska-Hulme & Shield, 2008). These devices can include phones, tablets, electronic dictionaries, MP3 players, and gaming devices

(Kukulska-Hulme & Shield, 2008). The devices also offer connectivity which helps in the areas of language acquisition and community (Xiao-Bin, 2013). Studies show that MALL devices foster self-study, which in turn increases the acquisition of the English language. Language learners who study individually outside the classroom expand such language skills and areas as listening, reading, vocabulary, and grammar (Kukulska-Hulme & Shield, 2008).

The literature suggests that the initial debate in the use of mobile phones for language learning had to do with preference, availability and usability of mobile phones (Stockwell, 2008; Melor & Chen, 2012). Some arguments claiming that mobile phone technology is not the most desired form of technology for language learning versus a PC desktop computer concerned the small size of the screen, the cost of using the mobile phone for every assignment based on Internet usage and mobile Internet plans, as well as the fact that the PC could be used in a quieter environment (Stockwell, 2008). Soome other reasons why language learners preferred the use of a mobile phone for language learning were that the material can be accessed and completed anytime and anywhere, as well as that it was faster to use the mobile device as a language learning tool, because there was no time delay in waiting for the computer to boot up for usage (Stockwell, 2008).

However, as time has progressed, more specific uses aside from the Internet are becoming evident with a mobile phone in association with language learning enhancement. Now SMS texting and video recording are utilized in addition to social networking opportunities that can all be engaged through a mobile device. According to a Pew Institute Research Study (2012), “92% of teen smartphone owners have gone online in the past 30 days on a cell phone” (pewinternet.org).

Tablets are another growing area of MALL devices that can enhance English language learning (Xiao-Bin, 2013). Studies show that language learners typically favor tablet devices in the English language acquisition process (Xiao-Bin, 2013). Tablets can provide many applications for learning English. However, while mobile phone ownership is mostly universal, the percentages of students that own tablets is much smaller. In one particular study testing the usage of tablets to learn English, only one student in a classroom owned a tablet, while every student had a mobile phone (Xiao-Bin, 2013).

4. Selected MALL applications in language learning

4.1. Social networks

According to a survey taken by comScore (2011), nearly 1 in every 5 minutes spent online is on a social networking site. Social networking sites now reach 82% of the world's online population, representing 1.2 billion users around the world (comScore.com, 2011). Social Networking ranked as the most popular content category in worldwide engagement (comScore.com, 2011). According to Harrison and Thomas' (2009) article on Social Networking Sites (SNS), shortly after SNSs first came on the scene in 2005, Boyd and Ellison (2007) provided the following definition of this new phenomenon:

> We define social network sites as web-based services that allow individuals to:
>
> 1. construct a public or semi-public profile within a bounded system,
> 2. articulate a list of other users with whom they share a connection, and
> 3. view and traverse their list of connections and those made by others within the system
>
> (Boyd & Ellison 2007, p210)

Some of these networks that are being utilized as educational tools inside and outside the classroom include *Twitter, Facebook, LiveMocha* and blogs.

Twitter is a social networking tool that allows subscribed users to post and receive messages, or read others' messages called "tweets". These tweets allow for only 140 characters per message transmitted (Lomicka & Lord, 2011). *Twitter* has been utilized as a teaching tool to help students with writing skills by creating mini blogs with *Twitter* accounts. With the number of tweets averaging around a billion a week now, *Twitter* is becoming a language educational tool to foster community and provide language practice outside the classroom (Lomicka & Lord, 2011). The National Education Association (2009) recommends that *Twitter* can be used to help students "crystallize thoughts, focus attention and make connections" (p.12). There are few empirical studies published regarding *Twitter* and its educational benefits, but of those empirical studies that are published, findings point to the fact that *Twitter* can enable students to engage with each other and their professors, while improving their overall grades and language abilities.

Social presence is a theory serving as "the basis for building successful communities of inquiry and the other dimensions of cognitive and teaching presence" (Lomicka & Lord, 2011, p.51). Empirical research showed that "generally speaking, students' attitudes were favorable and they seemed enthusiastic about the opportunity for additional communication outside of the

classroom to continue to improve their language study" (Lomicka & Lord, 2011, p. 57). The findings also revealed that students were very willing to use the *Twitter* technology and share their thoughts and life activities with friends through the *Twitter* platform (Lomicka & Lord, 2011).

Minimal empirical research exists regarding *Facebook* and language learning. However, *Facebook* has been utilized to create a learning community for classrooms that can be kept private (Harrison and Thomas, 2009). These learning communities provide the opportunity for students to discuss specific topics, or hold conversations with their classmates that can be interjected and moderated by the teacher to help guide the conversation and the grammar. Other studies primarily used *Facebook* as a community for finding and meeting other language learners and joining social groups working towards the same goals of language learning (Kabilan, Ahmad, and Abidin, 2010).

With the same concept as *Facebook*, but with technologies more specific to language learning, *LiveMocha* is rising as a potentially more useful resource for language learners. With 350,000 users from over 200 countries, *LiveMocha* is designed to specifically connect language learners to allow them to practice their language skills with other members of the social network (Harrison & Thomas, 2009). Special features of *LiveMocha* designed to assist language learners with practical language skills are as follows (Harrison & Thomas, 2009):

1. *Audio comments:* members can record voice messages and practice pronunciation;
2. *Peer review:* users can choose to allow other members to read, review and leave comments for other learners;
3. *Group chat sessions:* weekly meetings with tutors from *LiveMocha* to ask questions about language learning;
4. *Audio podcasts:* members receive audio lessons related to the language they are studying;
5. *Leaderboard feature:* members of the SNS can see their position vis-à-vis other students based on their performance on test scores, thus adding an increased motivational and competitive factor to the online community.

4.2. SMS texting

Seventy-five percent of all teenagers send texts using short message services (SMSs). They are more likely to send a text than talk on the phone, send an email, do instant messaging, or even

message on a social networking chat. In the world of education, and specifically language learning, empirical studies show that students are interested in learning vocabulary via SMS in order to digest small doses of vocabulary in a mobile location (Lu, 2008). The literature shows that students are able to learn by repeatedly looking at vocabulary lists on their phone that can be sent by the teacher during the week (Lu, 2008). Students can memorize spelling, practice iterating the meaning, and look up words in the dictionary when unsure, just using their mobile phone to verify correct information (Lu, 2008).

4.3. Videos

When watching videos, people experience feelings which enhance the learning capabilities. Videos trigger the senses at a heightened level, which provides a greater opportunity to retain more details from the experience. According to Berk (2009), learning outcomes of video learning can include the following:

1. Grab students' attention;
2. Focus students' concentration;
3. Generate interest in class;
4. Create a sense of anticipation;
5. Energize or relax students for learning exercise;
6. Draw on students' imagination;
7. Improve attitudes toward content and learning;
8. Build a connection with other students and instructor;
9. Increase memory of content;
10. Increase understanding;
11. Foster creativity;
12. Stimulate the flow of ideas;
13. Foster deeper learning;
14. Provide an opportunity for freedom of expression;
15. Serve as a vehicle for collaboration;
16. Inspire and motivate students;
17. Make learning fun;
18. Set an appropriate mood or tone;

19. Decrease anxiety and tension on scary topics; and
20. Create memorable visual images.

With these learning outcomes in mind, videos become a vital component to learning in and outside the classroom, with a specific impact on language learning outcomes. According to the literature, videos are processed using "core intelligences of verbal/linguistic, visual/spatial, musical/rhythmic, and emotional, left and right hemispheres, triune brain, brain wave frequencies, and video-brain conclusions" (Berk, 2009, p. 3). Students can utilize mobile devices to engage with videos on *YouTube*, or to record their own videos to play for classmates. *YouTube* videos can offer information to students, provide shortened lectures to practice listening skills in smaller segments, as well as tutorials that can aid in information variables for students (Berk, 2009).

4.4. Virtual worlds

Virtual worlds have been little researched in the field of education and language learning. However, the empirical research findings provide legitimacy to the fact that language learning can be enhanced through these environments (Peterson, 2010). Some of these conclusions point to the fact that virtual worlds provide anonymity, expedited community, feelings of immersion and emotional attachment (Peterson, 2010). This allows students to engage more freely and with greater confidence than with the inhibitions that would naturally be in effect when meeting in a traditional classroom setting in person and face-to-face.

The negative association with virtual worlds and language learning is the need for every participant to have an up-to-date computer and network, firewall problems, as well as enhanced computer skills. The virtual world programs have also been reported to record anti-social behaviors among virtual world participants (Peterson, 2010).

According to the literature, some additional positive aspects of virtual world programs that enhance language learning are that students can learn new words and expressions, improve their language skills and work at their own pace. The virtual environment holds the students' attention more than regular classes do, while having an avatar also makes students feel more involved (Peterson, 2010). Other research also shows that virtual networks offer interaction predominantly in the English language. Therefore it provides more exposure to the English

language, while opening a virtual location to practice English language skills (Kabilan et al., 2010).

4.5. Voice recognition

Voice recognition software has been found to be a helpful tool in language learning, with software programs that can "listen" to language learners practicing pronunciation and repeat back correct pronunciation of words spoken by the learner (Godwin-Jones, 2009). Mobile phone technology utilizes minimal versions of this software to allow for voice recognition of placing calls, texts, giving commands, or asking questions. The iPhone has been the leader in mobile phone technology providing "Siri" with the launch of the iPhone 4s. The iPhone Siri software allows a person to speak into the phone and ask questions or give commands associated with the phone. This includes acquiring trivia, directions, and authorizing commands to the phone to call or text contacts listed in the iPhone (apple.com). Android software-based mobile devices also offer a version of voice command technology. Mobile phone technology is expected to increase in voice recognition ability and offerings to support a more extended version of voice recognition software and provide greater assistance to language learners using their mobile devices (Godwin-Jones, 2009).

4.6. *Blackboard* virtual learning software

Discussion boards offer a collaborative learning environment, which can put the acquired language knowledge into practice (Bei Zhang, 2010). Homework assignments can be posted and offered to students indefinitely, with no opportunity to miss them. Grades can be provided privately and not violate in-school regulations for students. Reading and writing can be improved as students can learn by practicing their writing schools and reading their peers' posts in discussion board forums (Bei Zhang, 2010).

Voice memoing provides the option for students to listen to the professor or other native speakers to hear correct consonant, vowel, syllable, and total word pronunciation. Video tutorials and lectures can be offered in *Blackboard* to enhance the learning environment for students (Bei Zhang, 2010). As mentioned before, videos engage the senses at a deeper level, allowing for deeper understanding, as well as enhance information retention on the part of the student (Godwin-Jones, 2009).

5. Application of MALL in the light of selected theoretical frameworks

While looking at various theoretical frameworks identified to justify the use of mobile technologies to aid language learning, there is an opportunity to apply the concepts of the paradigms identified in this literature review. Various usages of mobile devices aid learners in mastering the language concepts and practices. The ability to read, write, learn vocabulary, practice speaking and pronunciation, and engage multiple senses aids in deeper learning and mastery of learning and practice. Mastery Learning Theory has been utilized to empirically provide evidence that various teaching methods applied to a student's needs can aid in deeper, sustained memorization in language learning (Berk, 2009). Looking at how Mastery Learning Theory offers various teaching methods to accommodate various learning needs of students would in theory be well applied to mobile technology use because so many different learning styles can be accommodated on a mobile phone. However, this theory has not been applied to other aspects of mobile technology that would help fit the theoretical framework, such as *LiveMocha*.

Sense of Community has been found to increase performance and satisfaction in online learning environments such as *Blackboard* (Rovai, 2009). Engaging other language learners in social communities such as *Facebook*, *Twitter*, and *LiveMocha* offers the opportunity to build a sense of community online. However, there is not enough data in existence to validate all of the mobile phone technologies available that are being utilized to help with language learning. Therefore, more research would need to be executed in order to provide justification for the already growing practice of mobile phone technology with language learners.

The advantages of applying MALL education practices in learning English include the opportunities for learning anytime, anywhere, in a self-study mode and in a learning community. Students can learn anytime and anywhere, because mobile devices are portable and offer connectivity in any location beyond the classroom. Self-study increases, because language-learning tools are offered to the student, empowering learners to engage in the process of language acquisition without the teacher present. A learning community is available because of the various applications offered with mobile devices such as *Blackboard*, *Facebook* and *LiveMocha*.

The disadvantages include the continued engagement required by teachers to format applications to coincide with classroom learning and the fact that not all students have access to

every type of mobile device that can be utilized to enhance the language learning process. Also, it is important to be open to step outside the traditional language learning practices that are simply put on the Internet, rather than learning and engaging in new applications available for incorporation into the English classroom. Teachers can, however, focus on mobile phone technology as ownership of those devices is more universal.

6. Conclusion

In conclusion, further studies should be implemented to empirically apply the theories of Bloom's Mastery Learning Theory (1968) and McMillan and Chavis' (1986) and Rovai's (2009) Sense of Community Theories. Existing empirical research shows the aspects of mobile technologies that can foster deeper learning and mastery of language learning. Studying these theories should allow one to validate not just the claim that mobile technologies aid in language learning, but to explore the aspects of its rationale.

However, usage of mobile technology is already proving to be a successful tool for language learning in many areas. Therefore, it is worthwhile exploring the various ways of how to utilize and implement mobile technology for language learning inside and outside the classroom. In the meantime, empirical research should be conducted by language educators to explore more areas of mobile technology usage in conjunction with language learning.

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