LANGUAGE LEARNING FOR VISUALLY CHALLENGED STUDENTS THROUGH ASSISTIVE TECHNOLOGY

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ABSTRACT

This paper focuses on how visually challenged students learns English through Assistive Technology in their daily life. Learning a foreign language is important for everybody, particularly if one's mother tongue is not very widespread and given the demands for communication skills in modern society, including the use Internet Language learning is even more important for visually impaired people, in order to reduce the gap caused by lack of sight or by severe visual impairment. At present only a small minority of visually impaired people are proficient in Braille reading. This is due to the fact that the majority of them suffer from loss of sight when they are young, or adult, that is too late in order to master the Braille reading method, which is based on the sense of touch. Learning a foreign language in the traditional way, that is by combining spoken and written words, becomes very difficult or impossible, owing to the fact that the individual can no longer rely on his ability to manipulate written words (reading/writing). The use of technology in education has closely mirrored the development of the personal computer. Since their introduction in the late seventies, personal computers have developed in speed, power and ease of use. Many early innovations in educational technology grew out of a desire to help students with various physical and learning disabilities overcome barriers to success in school and how Assistive Technology gives a space to benefit the students with a broad spectrum of learning needs, including English Language Learners.
Keywords: Learning English, Visually Challenged, Use of Mobility, Internet, and Assistive Technology.

INTRODUCTION

In language learning, the features of mobile technologies such as Texting, voice and video recording, access to the Internet and cameras, enable the learners to enhance their communicative skills. Nowadays, Clay tablets, scrolls, then much later printed books were the first technologies employed to meet this challenge. In the latter part of the 20th century desktop computers, laptops, note books, and web-based applications greatly facilitated flexible access to language learning materials. The advent of hand-held computer-based devices gave rise to Mobile-Assisted Language Learning (MALL) as we know it today. Since the mid-1990s, MALL has focused on the exploitation of mobile technologies: pocket electronic dictionaries, personal digital assistants (PDAs), mobile phones, MP3 players, and most recently ultra-portable tablet PCs. In fact, it was a challenging affair to cover learning tasks by a mobile phone. Mobile devices have rapidly developed to become tools for learning the languages. There are some factors having key roles in the use of mobile devices in learning environments. Physical characteristics of a mobile phone such as its size and weight as well as input and output capabilities such as keypad vs. touchpad and screen size and audio functions are among the factors which should be assessed in this respect. The learner skills and his/her prior knowledge and experience with mobile devices for learning, as well as the learner's attitude towards the learning through mobile phone play a crucial role in the output quality of such a mobile-based tasks Teachers and students are getting used to this environment to make education as ubiquitous as possible. Furthermore, the rising of internet made open and distance learning a means of receiving education from all over the world. In a short period, the attractiveness of distance learning led to the realization that various mobile devices provide effective resource for teaching and learning (Miangah & Nezarat; 2012).

Benefits and Challenges

Mobile technologies clearly offer numerous practical uses in language learning. In many cases, they are readily available. Even in cases where they must be acquired, mobile technologies are typically less expensive than standard equipment, such as PCs. Two main characteristics of mobile devices are portability and connectivity. As for connectivity, designing the mobile system must have capability of being connected and communicated with the learning website using the wireless network of the device to access learning material ubiquitously including short message service (SMS) and mobile e-mail. The portability of mobile media is another benefit. They can be just as easily utilized outside of the classroom as they can in it; learners can study or practice manageable chunks of information in any place on their own time, thereby taking advantage of their convenience. Ultimately, what these benefits indicate is the potential MALL has in expanding social inclusion in language learning. Notwithstanding its benefits, MALL also poses related challenges. For instance,

inherent in the portability of mobile media are reduced screen sizes, limited audiovisual quality, virtual keyboarding and one-finger data entry, and limited power. Further, their availability can be limited. . Although learning service through mobile devices has some advantages, it has its own constraints as small screen, reading difficulty on such a screen, data storage and multimedia limitations, and the like. Many of the mobile phones are not designed for educational purposes. That is, it is difficult for the learners to use them for the task given by the teachers to be carried out. This is partly due to the initial design of such devices, and partly due to non-existence of such developed mobile phones. While cell phone ownership may be almost universal for college-aged individuals, this is not true for other populations or media. The costs to educational institutions of purchasing them en masse could be staggering. Nevertheless, Gilgen (2004) has demonstrated the possibilities of developing mobile labs for schools with limited funding. Other potential drawbacks include limited nonverbal communications, limited message lengths, a lack of cultural context, and potentially limited social interaction. While mobile technologies are advancing, their output is quickly moving from verbal to visual, a clear disadvantage for language learning (Colpaert, 2004). Connection problems are also a concern: web-based language learners might choose to limit their online connection times, or they may not have access at all. Still, as a result of this issue, Trifanova, Knapp, Ronchetti, and Gamper (2004) are developing a program which allows learners of web-based German and Italian courses to hoard online content—a process similar to planned caching so that it can be used during periods of disconnection.

Mobile Assisted Language Learning

Mobile learning as an emerging discipline has evolved as a result of the maturity of other related disciplines. Distance learning (d-learning), as an umbrella term for both electronic learning (e-learning) and mobile learning (m-learning). The technological revolution of 20th century gave a boost to the process when learning could cross borders of television, radio, audio and video tapes, etc. leading to the emergence of e-learning. The process kept evolving until mobile phones and tablets became widely recognized as learning tools. With the development of technologies and related learning platforms, Man came to realize that the learning process may occur in contexts other than the traditional classroom. Learning, as a life-long process which incorporates exploration, exchange and collaboration, cannot be confined by the illusion of stability context (Sharples et al. 2009). These interpersonal mechanisms of learning require openness to other people, groups and experiences that are not sharing the same physical space with us. This participatory model of learning shared between learners of different linguistic and cultural backgrounds across the seas, can help both educators and learners leap over the old paradigm of learning with time and space constraints (Chun 2015). Now that the factors that hindered effective communication between learners such as expensive licenses, connectivity issues, etc. are eliminated, open source platforms,

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free Wi-Fi and free content websites will increase chances of communication, interaction and participation in the learning process (Chun 2015).

Assistive Technology

Assistive Technology as described by Lancioni et al. (2012) refers to Ba variety of devices (and services related to their use) aimed at helping persons with disabilities and special education/rehabilitation needs to function better within their daily context and achieve a higher quality of life. It refers to all technological devices that can help people with physical overcome the hardship they may get through when they need to depend on their own physical capabilities at schools or in real life situations. The definition implies that the term involves hardware devices in addition to the operating software and applications used by people with special needs. The technological development during the 1970s and 1980s and the inclination of legislators all over the world to adopt policies that promote the use of Information and Communication Technologies (ICTs) for disabled people, Assistive Technology (AT) was introduced in Canada and the USA and different parts of the world with Personal Computers (Hollier and Murray 2006). It actually revolutionized the inclusion of students with certain impairments within the world of knowledge. Laptop computers and tablet devices are beneficial for students with learning disabilities because they are portable and lightweight. For students with handwriting difficulties, being able to take notes on a laptop or computerized device (such as an iPad) can improve the quantity and quality of the notes (Vaughn & Bos, 2009). Using a word processor can help students to complete work that is more organized and includes less spelling errors than handwritten work (Hetzroni & Shrieber, 2004). In addition, students may identify and correct more errors when using spell check than when editing by hand (MacArthur, Graham, Haynes, & De La Paz, 1996; McNaughton, Hughes, & Ofiesh, 1997). However, obtaining personal access to laptops and computerized devices does not ensure engagement and increased academic success (Donovan, Green, & Hartley, 2010). For many students, laptop computers and computerized devices can be also distracting. Teachers and students need to be trained in how to meaningfully integrate technology into academic contexts so that the devices don't detract from learning (Dell, Newton, & Petroff, 2012).

Assistive technology can improve the writing skills of students with learning disabilities (Batorowicz, Missiuna, & Pollock, 2012). Assistive technology can help students to bypass the mechanical aspects of writing. Using spell check and grammar features can help students focus on communicating their ideas and students can write with confidence knowing that they can easily make changes.). In addition, students may identify and correct more errors when using spell check than when editing by hand (MacArthur, Graham, Haynes, & De La Paz, 1996; McNaughton, Hughes, & Ofiesh, 1997). And being able to submit a final assignment

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that is neater and better organized supports positive self-esteem. Text-to-speech (e.g., Kurzweil 3000), speech-to-text (e.g., Dragon Naturally Speaking), word prediction (e.g., WordQ) and graphic organizers (e.g., Inspiration) are four useful software functions for students who struggle with language-based learning disabilities.

In addition, to dedicate web content user agents, a wide range of assistive technologies are available to help people with computer accessibility. These technologies can greatly assist access to Web content for people with disabilities. Examples include:

1. Speech recognition software, which can be useful for those who have difficulty using a mouse or a keyboard.

2. Screen magnification software, which enlarges what is displayed on the computer monitor, making it easier to read for vision impaired users. Keyboard overlays which can make typing easier and more accurate for those who have motor control difficulties.

3. Screen reader software, which can read out, using synthesised speech, either selected elements of what is being displayed on the monitor (helpful for users with learning difficulties), or which can read out everything that is happening on the PC (used by blind and vision impaired users). Translation software to allow reading of websites in foreign languages especially for those who had been diagnosed to have a learning disability.

Learning Vocabulary

The type of activities focusing on vocabulary learning via mobile phone differs from one research project to another, depending on the level of language proficiency of the learners. Sending e-mail or SMS to students is a common way of learning new vocabulary based on the lessons covered in the classroom. In a study Kennedy and Levy gave the learners the option to receive messages covering known words in new contexts through SMS to their mobile phones amounting nine or ten messages per week. The results indicated that the messages were very helpful for learning vocabulary. Similarly, Thornton and Hiuser sent short mini-lessons for learning vocabulary through email to mobile phones of the students three times a day. They used new words in multiple contexts for the learners to infer the meaning. The results showed an improved range of scores on post-tests which were very encouraging. There are other strategies for learning vocabulary via mobile phones. Learners can be provided with some tailored vocabulary practices based on activities performed in the classroom. They are, then, asked to complete them on their mobile phones and send them back to their instructors. Learning vocabulary can also be accompanied by the pictorial

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annotation shown on learners' mobile devices for better understanding of new words. In a study conducted by Chen, et al., learners were provided with verbal as well as pictorial annotation for learning English vocabulary. Results of a post-test showed that the pictorial annotation assisted learners with lower verbal and higher visual ability to retain vocabulary.

Listening Comprehension

Listening exercises may be considered the first stage in learning a second language. With the advent of the second generation of mobile phones, it is now possible to design a mobile multimedia system for learning listening skills through listening exercises. International Journal of Distributed and Parallel Systems (IJDPS) Vol.3, No.1, January 2012 314 Huang and Sun designed a system composing of two subsystems. A multimedia materials website that uploaded and maintained video materials, and a set of multimedia English listening exercise on the mobile phone for the learners to repeat exercises in English listening in a ubiquitous learning environment. They attempted to implement the mobile multimedia English listening practice system based on capabilities of the mobile technology providing learners download multimedia sound contents from mobile devices, register the learning website, order mobile learning courses and activate reception of learning courses. According to Huang and Sun, mobile multimedia English listening exercise system can enhance learner's English listening abilities to a high degree. It is also possible to design a platform in which learners listen to a text by vocal service on their mobile phones, followed by a listening comprehension quiz based on the text. Learning Grammar Grammatical points can be learnt through a specifically designed program installed on mobile devices, in which grammatical rules are taught, followed by multiple-choice activities where learners select the correct answer from the given alternatives. Grammatical exercises can be in the form of 'true-false' or 'fill-in the blanks' which are to be responded by the learners. Grammatical explanations may also be presented to learners via vocal service or short message service. Pronunciation the second generation of mobile devices enable their users to access multimedia functions including listening and speaking ones. A good m-learning service should consist of speech facilities for transmitting voice. Having such facilities, the learners may download dictionaries on the PDA1 with sound functions so that they can learn the correct pronunciation of unfamiliar or new words to be able to fulfill their learning needs. Mobile devices with multimedia function give the learners the opportunity to record their own voice. Then, teachers are able to make a better assessment of the students' weaknesses in pronunciation. This way, by enhancing various functions of the system like providing a dictionary for looking up unfamiliar words and their correct phonetic form, the pronunciation as well as speaking skills of the learners can be well improved. The Praxis learning podcast line is a platform providing a context-driven, social-based, and software-enhanced website for learning foreign languages. It has recently been working to release mobile language

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learning features for PDAs, smart phones, etc., enabling learners to learn phonetics of a given language in an interaction way using multimedia functions on the mobile phones (Microsoft research program). The speech aspect of mobile learning is as significant as textual aspect of it, since it enables learners to comfortably speak with a system recording their voice and allowing them to listen back to themselves. Then, they can compare their voice with an ideal pronunciation and make an improvement in this skill. Reading Comprehension Reading practices help learners to enhance their vocabulary, and vocabulary knowledge, in turn, helps them to promote reading comprehension. Reading activities can be offered to learners either via a well-designed learning course installed on the mobile devices or through SMS sent 1-Personal Digital Assistant like a basic palmtop computer International Journal of Distributed and Parallel Systems (IJDPS) Vol.3, No.1, January 2012 315 to the learners. In either case upon finishing the reading activity, the learners are provided with a reading text function to evaluate their reading comprehension skill. To offer an effective and flexible learning environment for English learning, Chen and Hsu attempted to present a personalized intelligent mobile learning system known as PIM in which the learners were provided with English news articles based on their reading abilities evaluated by fuzzy item response theory. To promote the reading abilities of English news, the PIM system would automatically discover and retrieve unknown vocabularies of individual learners from the reading English news articles. The experimental results of the study indicated that English news reading learning along with unfamiliar vocabulary learning with self-assessing feedback response are very effective in prompting reading comprehension and reading abilities of the learners. Mobile learning programs in which reading function accompanied by text announcer pronunciation will be more helpful to promote at the same time both reading comprehension and listening comprehension.

Learning Grammar

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CONCLUSION

Yamaguchi (2005) recapitulates: "A computer is better than a mobile phone for handling various types of information such as visual, sound, and textual information, but mobile phone is superior to a computer in portability. And some students don't have their own computer". So, while m-learning in general George Chinnery Emerging Technologies: Going to the MALL Language Learning & Technology 14 and MALL in particular have clear challenges and limitations, the paucity of applications and formal research will indubitably proliferate. Colpaert (2004) observes that in the history of CALL, periods of professional development have been followed by periods of amateur development—coincident with periods of hype—by teachers and researchers, and further portends that "if this prevails, the mobile hype will burst out as soon as tools become available allowing teachers and researchers to develop their own mobile applications and tools". Still, humankind is not likely in the immediate future to reach the state of Salmon's (2003) Planet Nomadic, where "terrestrial universities and corporate training facilities have disappeared" and wearable devices "help to pace the learners…through their courses". But it does seem quickly headed for a world where m-learning is a fashionable channel for language study. Mobile-based learning or m-learning faces many challenges, but it has grown in exponentially in spite of all its problems to provide a better environment for language learning. Mobile learning technology, however, has a rapid pace of development from a teacher-learner text-based approach to a forthcoming multimedia supporting technology. Mobile technology gets learning away from the classroom environment with little or no access to the teacher, though the learning process can hardly be accomplished without a teacher's direction or guidance. As the demand for acquiring a foreign language increases and the people time for more formal, classroom-based, traditional language learning courses decreases, the need felt by busy users for learning a foreign language through MALL will inevitably increases. In other word, MALL can be considered an ideal solution to language learning barriers in terms of time and place.

REFERENCE

Eatty, K. (2003). Teaching and researching computer-assisted language learning. Essex, England: Pearson Education Limited.

Colpaert, J. (2004). From courseware to coursewear? Computer Assisted Language Learning, 17(3-4), 261-266.

Chen, C. M. & S.-H. Hsu. (2008). "Personalized Intelligent Mobile Learning System for Supporting Effective English Learning". Educational Technology & Society, 11 (3), pp. 153-180.

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(IMPACT FACTOR 3.02) INDEXED, PEER-REVIEWED / REFEREED INTERNATIONAL JOURNAL

Koole. M. (2009). "A model for framing mobile learning" . In M. Ally (Ed.), Mobile learning: Transforming the delivery of education & training, pp. 25–47. Athabasca: AU Press.

Kukulska-Hulme A. and L. Shield. (2008). "An Overview of Mobile Assisted Language Learning: Can Mobile Devices Support Collaborative Practice in Speaking and listening?" http://portal.acm.org/citation.cfm?id=1520087, accessed Jul. 2009.

Oxford R. and J. Oxford. (2009). "Second Language Teaching and Learning in the Next Generation", 2009. http://llt.msu.edu/vol14num1/review1.pdf, accessed Jul. 2010.

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

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