Intercultural Understanding in the New Mobile Learning Environment

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Abstract. The proliferation of mobile learning technologies, wireless devices and cloud-based applications had been attracting a school of researchers and educators worldwide in developing new programs or extending their current programs. This growing phenomenon can be explained as part of many higher education institutions' strategy to meet the growing demand from offshore students who domicile in another country, speak another language and have a different culture. A desk based study into recent academic research in mobile learning and distance learning has been conducted with particular emphasis in evaluating competence in intercultural understanding. It is in this context that we review the current practices by higher education which is by and large still using teacher-led pedagogical model with their own cultural orientation, values and actions of how they perceive as beneficial for the learners and whether specific design strategy can be used to enhance intercultural understanding and competence for both the institution and learners alike.

 Keywords: Intercultural understanding, mobile learning, cultural competence, transnational education.

Introduction

A promotional video posted in YouTube (YouTube, 2015) with the presenter prompting "Have you ever imagined a university program in which learning takes place at your own backyard ?" and the scene shows an Asian man holding a tablet computer in the comfortable setting of a backyard (Informatics Education, 2012). As mobile technologies advance, many educational institutes attempt to take advantage of the extra reach and the new access to global learners with mobile learning technologies as an addition to their existing portfolio of learning technologies. In this case, the higher educational institute is called Informatics Education, a private concern in Singapore that offers UK degree programs in regional Asia with the use of mobile and e-learning platform called Global Campus. Meanwhile back in United Kingdom, Middlesex University had led a research effort back in 2004, which by coincidence is also called the Global Campus project - had received funding from the European Commission to study the use of m-learning in higher education in Southeast Asian nations (Murphy, 2004). Besides the above two chosen cases, which was

carefully selected to stage the phenomenon, there is an increasing body of evidence that educational enterprises are all gravitating towards the use of mobile learning technologies. There are amongst these institutions some well-established universities based in the west and higher educational (HE) enterprises based in the east and provides local recruitment and tutoring support. All of these enterprises are tapping the use of latest mobile technologies, learning management system and its applications to support its organizational goals in growing the student enrolments (Clothey, 2010) and adoption of its degree-awarding curriculum programs whether these are local classroom and tutor supported, distance learning (Spronk, 2004) or blended online e-learning (Latchem & Jung, 2010). From reviewing various literatures, it is found that the current body of knowledge in the use of the mobile learning studies have been mostly focusing in the effectiveness and system design of projects and very much falls into the state described by Pachler et al (2010) as "technological fetishisation" and very few cover the social-cultural and cultural dimensions of learning and the impact of the intercultural understanding with the current state of the art in mobile learning.

Objectives of the Study

This study intends to evaluate the current state of intercultural understanding in mobile learning research projects and formulate suggestions for its progression for mobile learning researchers.

Methodology of the Study

In this study, a desk-based study of existing literature in mobile learning projects was carried out. In particular two major studies by Frohberg et al (2009) and Wu et al (2012) was compared and this covers a large body of literature related to mobile learning projects conducted in primary, secondary, higher education and informal learning.

Theories of mobile learning and intercultural understanding

For the purpose of our study, this section will explain the theoretical framework of our research questions, defining the meaning of various terms that is used in this study and the implications it has as a desk-based research on the current body of knowledge.

Mobile learning as an extension of online education and e-learning

Mobile Learning was identified early on as an extension to e-learning that can be realized by the use of mobile computing devices (Quin, 2000). Today, this definition is still supported by many. Traxler (2009) simply refers mobile learning as "mobile e-learning" and is not adjoining of the two buzz words "mobile" and "learning". The field of studying mobile learning is still nascent and will continue to develop itself into newer identity (Traxler, 2009), which is similarly described as only an evolutionary phase (Kukulska-Hulme, 2009). Traxler (2009) further supported the notion that mobile learning still has a blurred definition, one which may differ across different geographies, culture

and in particular amongst the two distinct groups of "developed" and "developing" countries. The concepts of mobile learning therefore can be elucidated based on culture and affordances of mobile technologies. In this paper, the focus is on the use of mobile learning technologies as a means to extend the reach of otherwise traditional classroom-based, face-to-face, or tethered e-learning pedagogy in higher education.

While many mobile learning projects, research and articles had evaluated the success based on technology and pedagogy, Traxler (2009) supports the argument that implementing mobile learning should put more attention to social, cultural and organizational attributes in order to gain sustainability within higher education. Mobile learning solution by its technical definition (Traxler, 2009) could expand the learner's ability to participate at will, with more ways to make contact and with little geographical limitation or time space constraints.

Intercultural Understanding and Competence

While many authors have written about intercultural issues, cultural diversity, cultural understanding in distance learning and e-learning programs, and a limited few actually have extended beyond online learning to mobile learning and explore extra dimension related to socio-cultural conditions (Pachler et al, 2010).

One of the widely used research framework in studying cross-cultural communications is from the original work by Hofstede (1986) who developed the four dimensions of cultural differences – Power Distance, Individualism – Collectivism, Uncertainty Avoidance and Masculinity. Liu et al (2010) recent paper titled "Cultural Differences in Online Learning : International Student Perceptions" is one that adopts Hofstede's model.

Intercultural contact (Leask, 2004) is often seen as one of the key driver to increase intercultural learning opportunities and competence in transnational education and individual higher education (HE) institute's desire to internationalize. Similar to the Singapore educational enterprise introduced earlier in the opening paragraph, many of these HE institutes in Canada, United States, United Kingdom , Australia, New Zealand, also referred to as settler countries (Spronk, 2004) are all expanding and promoting their courses and programs in Asia - often as distance learning programs, or blended learning programs with the support of local tutors. This "internationalization" effort in higher education is not unique (Leask, 2004; Mercando et al, 2004) and is observed in many Asian countries. The terms used in this sector such as offshore, transnational, transborder, distance learning are all very common. It is almost always assumed by the consumers at large that when any programs are offered in Asia by a local educational enterprise, it will have a partnership of some sort with a western university. Since 1990s, these western universities or higher educational institutes had been starting to develop these exportable programs and crossing the cultural barrier (Mason, 1998).

Global educators are perceived as the new colonizers (Mason, 1998) and often labeled as insensitive by the way they teach. Wang (2006) describes this discourse of online learning which emphasizes "individual development and student autonomy, active learning and mutual communications" and the "teacher-dominated, passive and silent way of learning" for Asian students.

According to Leask (2004), these global educators will face many risk factors when comes to developing the understanding of intercultural practices like "how the language and cultures influence their thoughts, values, actions and feelings".   It is clear that when any learning takes place, it can differ significantly from one country to another - Spronk (2004) describes this as "differ profoundly from one culture to another" and attributes these digital learner's culture into "hierarchy, style, orientation and language".

Indeed, researchers have found that language is the most common learning barrier to successful teaching and learning. According to the analysis from the ADEPT m-learning research project led by Middlesex University, 60% of the respondents cited that language problems was the key barrier inhibiting m-learning in cross cultural settings" while 36% of the respondents see non-language related communications problems as an inhibiting factor (Murhpy, 2006) suggesting that learners in these Asian countries receiving western education clearly indicates that there are cultural differences stemming from the use of language in communication and non-language communication. This set of statistics supports Spronk's view of an academic culture familiar to only the first language learners, and labeling other second language learners as aliens (Spronk, 2004)

It is often true that it is necessary to learn more about a culture through the lens of learning the new language (Kukulska, 2009). However, attaining better understanding of a culture is by no means the only outcome of learning a culture's own languages, values and actions; but often learning a language, gaining contact, with another culture can achieve this goal (Leask, 2004). Many cross-cultural studies have found many differences between eastern and western cultures. And for educational institutes in West to offer their program courseware in the East, it will be more than just recognizing the difference between the two distinct cultures. In the concept of teaching and learning, Wang (2006) posits that Asian students have a totally different understanding, beliefs and hence expectation of the learning culture from Western educational institutes. The roles of the teacher or tutor who furnished as the contact medium to the text instructions are also different from the viewpoint of Asian students; the type of "quiet" communication pattern inside a classroom, and also inside an online learning environment are observed.

Bélisle (2008) supports the viewpoint that intercultural competence as a capacity to understand more than just a words used in spoken or written form for a language, perhaps more to do with the actual process of communication and further proposed the "cultural embeddedness of e-learning environment" and she further supports the notion that intercultural competence is demanding – often requiring the teachers to come up with innovative pedagogical models to reach students irrespective of what medium used. Intercultural understanding

and intercultural competence can be obtained by provisioning more local support and more contacts according to Murphy (2004).

Mobile Learning – a new path to intercultural understanding and competence

In this study, I have conducted a review of two major literature that analyze the state of the mobile learning projects and a synthesis from various literatures in mobile learning and e-learning that incorporates the use of mobile computing devices to find out and ascertain if there is some knowledge gap. There are very few literatures that cover the interplay area of intercultural issues and mobile learning. Although referring to online transnational education in general, Liu et al (2010) points out that "the growth of cultural concerns in regards to online learning has not been accompanied by a growing number of studies in the field".

And scanning the various literature on mobile learning, it is found that quite a large number of mobile learning projects discuss about a specific use or instance of adopting a wireless technology like the development of a SMS based system (So, 2009), and some offers a conceptual framework (Chun & Tsui, 2010) or a task model mobile learning theory (Sharples et al, 2006) or pedagogical framework (Khaddage et al, 2009; Laurillard, 2007) and some study the perceptions of the use of mobile learning (Al-Fahad, 2009)

The two studies by Frohberg et al (2009) and Wu et al (2012) provide an holistic view of type of mobile learning projects that researchers and practitioners had been focusing on thus far - effectiveness, system design, language learning initiatives - covering education initiatives from primary education to higher education and informal learning.
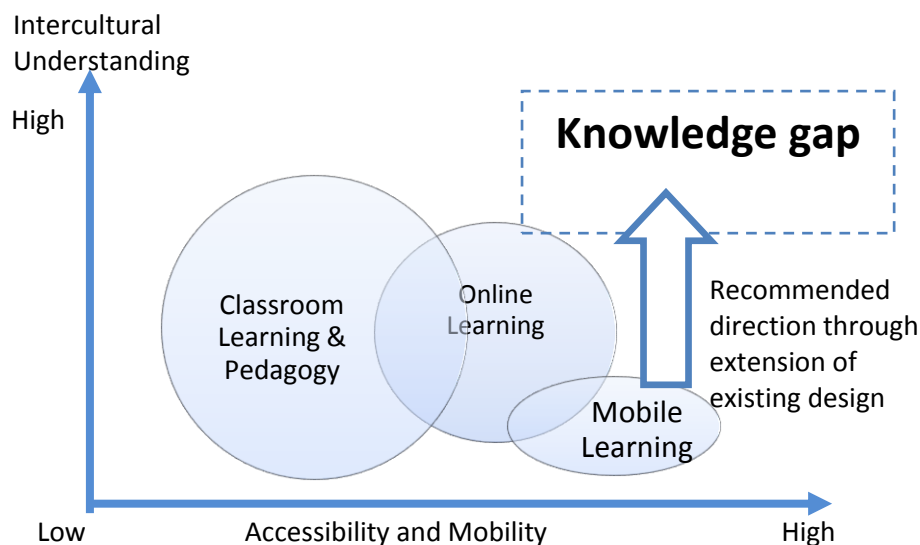
i)   *Mobile Learning projects – a critical analysis of the state of the art* (Frohberg et al, 2009) which covers 102 Mobile learning projects that were published before the end of 2007 out of the initial screening of 1468 publications. In this report, the selection is focused on six criteria – context, tools, control, communication, subject and objective. Although not directly related to cultural implications, the report recognizes that learning is not an exclusively individual process and the increased use of mobile technologies amongst learners can lead to more contact. There is no reported studies on the intercultural and social-cultural implications in this report.

ii)   *Review of trends from mobile learning studies: A meta-analysis* (Wu et al, 2012) provides a good synthesis of 164 studies between 2003-2010. In this report, the authors had been able to categorise the type of research by methodology, educational context by mobile device, academic disciplines, level of mobile learners. Particularly relevant to our interest in the context of higher education, the report shows 92 studies in the higher education sector representing 52%. 58% of the studies evaluates on effectiveness as the primary research aim and 32% focus on the mobile learning system design, with 86% of the studies showing positive

outcome. There is no reported studies on the subject of intercultural and social-cultural implications in this report.

Frohberg et al (2009) in his critical analysis paper has adopted a systematic framework to analyse many different kinds of mobile learning projects and by presenting the discussion according to the task models for analyzing mobile learning (Sharples et al, 2007) which analyse six key factors - context, tools, control, communication, subject and objectives of the mobile learning projects. Although the domain of intercultural understanding and cultural issues were not explicitly measured in the model itself, the area for which context and communication covers in the model in part relates to the common space for which the learning and the teaching cultures meet which Frohberg et al (2009) refers as "dialectic nature of the technological and pedagogical space" for educational processes. One of the factors measured is communication and in e-learning and mobile learning, participants and teachers are important to the learning process and mobile technologies could improve the communication and interaction and being an isolated learner or learners in loose pair are significantly different.

Drawing from the findings from these two literature, and the lack of concrete evidence of research conducted in the area of intercultural implications with mobile learning, it can be argued that that the theory of mobile learning is indeed very nascent – it has not caught on with the amount of research emphasis on intercultural issues on traditional classroom and online learning. Mobile learning was suggested by many authors to be evolving and taking new shape (Traxler, 2009) and still evolving (Kukulska-Hulme, 2009). The following figure 1 shown below is synthesized from the present study that posit as new technologies are being introduced to the teaching and learning arena, it is generally intention is to gain more access as described by Mason (1998) as "global curriculum". On the vertical axis, it shows the level of understanding in intercultural issues, and on the horizontal axis, it shows the level of accessibility and mobility. Both axes shows a level of high and low level – as in high or low understanding, high or low mobility. There are quite a few authors and researchers investigating the topic of intercultural understanding in teaching and learning, distance education and online learning and these authors often making comparative studies (Robinson, 2007; Wang, 2006; Mercado et al, 2004; Liu et al, 2010) through the lens of various authorial sources such as the Hofstede's cultural dimensions theory (Hofstede, 1986). By providing more access and more mobility supported by technology environment, it is presented in this paper that the new technology as adopted lately by many projects to study and evaluate mobile learning, they have show a general lack of intercultural understanding and our review of various literature supports this argument.

Figure 1: Intercultural Understanding, Accessibility and Mobility

There are some parallels observed in many studies in online education' and studies in mobile learning, both of which have seen a large body of knowledge focusing mostly on technological and instructional aspects (Wang, 2006; Fronberg et al, 2009; Traxler, 2009; Cobcroft et al, 2006). This similarity can be explained that the advent of today's internet and mobile technologies probably share a similar pattern of trajectory growth. It is argued by many authors that mobile learning will become so popular that learning as an activity will be personal, situated and immersive to our everyday living environment, and therefore see no need to study further as a separate discipline. The growth of the use of mobile devices in learning had been traditionally with smaller handheld devices and this trend is clearly moving away with tablet PCs and the use of mobile learning is seen as inching closer to reach tipping point (Liu et al, 2010). However, this positive identification of the use of technology as applied learning has been criticized; Paliwal & Sharma (2009) believes mobile learning is not quite ready for the mainstream giving the lack of support from the universities.

Since many distance learning program, internationalization effort on the part of western higher education institutes have started way back before today's landscape of today's mobile learning pedagogy – from mail order study guide, CDs, computer-mediated learning courseware, many have also focused on the need for attaining intercultural understanding. Since then, many online learning and World Wide Web based learning design principles such as those presented by other authors (Collis, 1999; Lally et al 2006; Spronk, 2004; Latchem & Jung, 2010) have supported the need for course developers to look at the profound impact of intercultural competence of the host education institutes to design their courseware for a diversified cultural audience. Spronk (2004) called these "settler countries" naming Canada, United States, Australia and New Zealand.

She further posits that the advent of online learning seems to put the "neglect to cultural diversity" in distance education to an end (Spronk, 2004).

As discussed, gaining access to the global marketplace through the deployment of new educational technology is proven to be a trend as the cost of technology becomes affordable for mass consumption. Computer, internet and mobile technologies are the new high tech media that provides ubiquitous access and hence enabling D-Learning, E-learning and M-Learning at lower cost (Paliwal & Sharma, 2009) often providing "convenience, expediency and immediacy".

Despite the lack of interest from researchers to study the conjuncture of intercultural understanding with the new mobile learning environment, authors like Khadage et al (2009) believes that researchers should consider blending the mobile learning technologies into the existing use of blended learning, which already uses a mix of classroom, asynchronous and synchronous online learning to study and incorporate the existing knowledge related to intercultural understanding and cultural studies in blended learning. A review of literature in the mobile learning domain shows that despite that advancement in mobile technologies – user interfaces, devices and connectivity, it is still often seen as only an extension of the existing online learning environment (Traxler, 2009; Paliwal & Sharma, 2009) and hasn't deviate much from the original interpretation of mobile learning (Quin, 2000) of using mobile computational devices to connect to traditional online learning.

If the past history is a good indicator of what the future will hold; and in the case of the knowledge and understanding in intercultural issues in offering education to a global audience (Mason, 1998; Robinson, 1999) ; and also in using various online e-Learning pedagogies and design techniques encompassing WWW (Collis, 1999), it is quite clear that the use of advance mobile technologies will continue to extend the reach of e-Learning (Traxler, 2009) and therefore the level of intercultural understanding should increase over time as these new disruptive technologies becomes a settler and adopted by the mass.

Design implications for mobile learners

In our review of the state of mobile learning, despite being nascent and evolving nature of mobile learning as described by many authors (Traxler, 2009; Kukulska-Hulme,2009), the design principles and needs for intercultural understanding in mobile learning is still very much needed.

Goodfellow et al (2009) pointed out that the research efforts focus in the cultural diversity in transnational online learning is growing and supporting the distance learners and what Hodgson (1997) described as "distributed telegraphic culture" in new technology-supported learning environment which also supports educational dialogue. Mercado et al (2004) also suggested almost ten years ago that there is future need for universities "to customize their online programs to satisfy cross-cultural needs" - for today's learners who are customers of transnational university education. Several authors had been

advocating the needs for pedagogical frameworks when extending the use of the new mobile learning environment. Specific design to support the process of self-awareness and critical reflection are also needed (Hodgson, 1997).

The new mobile learning environment will present itself as a great opportunity for educators in the next decade as the level of intercultural understanding amongst us as educators, as learners and as practitioners increase. Although it is a challenge to deal with a myriad of mobile learning capable devices, applications and connectivity options (Paliwal & Sharma, 2009), it is critical for educators to be fully aware of and make use of the current best practice in online learning and distance education when designing learning activities and courses, learning from the past experiences, critical reflections and knowledge.

Collis (1999) had proposed a set of design principles which is general enough to apply to the current state of the technology for e-learning as well as mobile learning as discussed in this paper. In summary, the course designer has to look for areas for which "cultural flexibility" can be applied and summarized in the following table.

Table 1. Intercultural design guidelines for WWW courses

Plan for flexibility
Design for a variety of roles for both instructors and learners
Do not assume the course-support site as the primary
Use the course-support site as supplementary
Make use of a variety of media and resources
Minimal technical levels
Test fixed on screen to a minimum
Deal with different communications
Different communication configuration / exam add
Be realistic of what instructors can and will do

Source: Collis, 1999. Designing for difference: cultural issues in the design of www-based course support sites.

The 'Global Campus' project led by MiddleSex University (Murphy, 2004) is of paramount importance as it clearly highlights the phenomenon that the teaching model of the western Socratic pedagogical model, and the learners being in Asia as Confucian - is indeed a form of cultural difference and fundamentally calls for recognition of design implications. Course designers, educators, learners as a result is encouraged to follow the proposed design principles that are recommended for online learning today (Collis, 1999; Lally et al 2006; Spronk, 2004; Latchem & Jung, 2010) as a starting point for any future mobile learning projects. It is also this paper finding that future mobile learning projects need to take a deeper and holistic approach to recognize intercultural understanding.

Limitation

As a desk based study, this report provides a selective snapshot of the most recent studies in mobile learning. In the review of the two major meta-analysis of existing mobile learning projects, some of these reports have pre-determined criteria for selection and a defined period in time (Wu et al, 2012; Fronberg et al, 2009) for selection and may therefore not able to provide coverage to all journals and papers related to the topic, and this study may also have overlooked studies and projects that may not have been easily found.

Discussion

With the proliferation of mobile technologies, new devices, high-speed connectivity and ubiquitous computing, cloud-based applications and web 2.0 technologies, educators in the higher education sector are upgrading their knowledge within their professional practice and deploying the use of mobile and Internet technologies in teaching and learning. What used to be seen as barriers to effective adoption of technology-supported learning environment such as slow or intermittent internet connectivity, expensive software licenses, device limitations and limited content can now all be eliminated by open source software (e.g. moodle), free software as a service (e.g. YouTube, Google document), free content (e.g. Wikipedia) and free Wi-Fi. In some cases, the learners are more sophisticated and use other web 2.0 technologies (del Val et al, 2010) to augment their learning, to demand better solution or they outgrow the technology supplied by the institution. In the HE sector, the competence of learners from different culture over time had acquired skills in using technology to communicate, to interact and to participate in the learning process with new mobile learning environment. As new disruptive innovation in educational technologies start to unfold in front of us (Christensen et al, 2011), both educators and learners will be led to leap over the old paradigm of learning with time and space constraints.

The level of intercultural understanding, related issues pertaining to the need itself, design implications in the context of mobile learning initiatives has been largely explored through reviewing existing mobile learning projects in this study. Through this study and literature review, it is argued and presented that very few mobile learning studies have focused on intercultural issues – competence, understanding, design by both the learning communities and the educational institutions. This gap in knowledge presents a tremendous opportunity for future studies for practitioners and new researchers. There is no doubt that there will be many challenges in designing effective technology-supported learning projects with an intercultural approach (Lally et al, 2007). This paper conclude with the findings and recommendations that when comes to designing future mobile learning initiatives and projects, practitioners and researchers should adopt the current design guidelines recommended by many authors and follow their existing best practice of e-learning and blended learning projects. This study also recommends that *a deep approach* is much needed for educators and researchers *to plan and reflect* on issues related to intercultural understanding and its implications when implementing mobile learning projects.

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