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Date : 5 APRIL 2012
Students’ Readiness and Perceptions towards Mobile Learning and their Acceptance in Adopting Mobile Learning Platform as Learning Tool and Communication Tool

SOH PEA LING

A thesis submitted in fulfilment of the requirements for the award of the degree of Master of Education (Educational Technology)

UNIVERSITI TEKNOLOGI MALAYSIA

APRIL, 2012
I declare that this thesis entitled “Postgraduates’ Readiness and Perceptions towards Mobile Learning and their Acceptance in Adopting Mobile Learning Platform as Learning Tool and Communication Tool” is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature :...........................................
Name : SOH PEA LING
Date : 5 APRIL 2012
Specially dedicate to my beloved family
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ABSTRACT

Mobile Learning is the current technology that has become more and more popular nowadays. Mobile Learning is a type of learning across contexts and learning using small, portable and wireless computing devices like PDA (Personal Digital Assistance) and smartphone. The purpose of this research is to collect data from postgraduates about Mobile Learning and to develop a local context mobile accessible learning webpage. The first stage survey is to investigate the readiness and perceptions of postgraduates towards the Mobile Learning. This quantitative method was constructed by using a set of questionnaire which involves 63 respondents from Educational Technology Course, Faculty of Education. Results indicated that most of the postgraduates are ready to use mobile device especially in searching information through the online browser (mean value = 4.43). Besides that, results also showed that they have a positive perceptions towards Mobile Learning especially when they agree that learners can get the latest information through it (mean value = 4.44). A Mobile Learning environment (Mobile Moodle) which is connected with Learning Management System (LMS) was developed based on the postgraduates’ preferred activities. Second stage survey which is Mixed-Method survey was carried out to examine the postgraduates’ acceptance in adopting mobile learning as an additional learning tool and communication tool. A set of questionnaires and interview sheet were used in collecting data. The research’s results had signified that the acceptance among postgraduates are high especially on the benefit of Mobile Learning which allows learner to access lecture materials anywhere and anytime (mean value = 5.00). In addition, results also indicated that postgraduates prefer to carry out communication with lecturer by using Mobile Learning environment (mean value = 4.71). Lastly, refering to Technology Acceptance Model (TAM) the research results showed that Mobile Learning environment’s usefulness (mean value = 4.08) and the ease of use (mean value = 4.06) are the main concerns considered by postgraduates.
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<td>SD</td>
<td>Strongly Disagree</td>
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<td>Sd</td>
<td>Standard Deviation</td>
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<td>Slightly Agree</td>
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<td>SMS</td>
<td>Short Message Service</td>
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<td>SPSS</td>
<td>Statistical Program for Social Science</td>
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<td>TAM</td>
<td>Technology Acceptance Model</td>
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<td>UteM</td>
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CHAPTER 1

INTRODUCTION

1.1 Introduction

The rapid development of information and communication technologies (ICT) during the past two decades has placed new demands on expertise, and also leading to increase the use of information technology (IT) especially for instruction and learning process. The development of technology enables our country growing approach the flexibility in education field and hence meets the country’s drive to fulfil Vision 2020.

Our education curriculum had transformed and enhanced by the use of new media as tools. E-learning was introduced in Malaysia higher institutions since year 1998. The rapid growth of web-based technologies and the high usage of the internet had made teaching and learning via the internet more viable (Chai and Poh, 2009). E-learning provides the learning opportunities anytime and anywhere by using the interactive network technology and computers in computer lab to deliver the learning materials to learner. E-learning actually integrates all forms of online instructions using electronic devices.

Almost all the higher education institutions promote the life-long learning and the distance education. Distance education takes place when a teacher and students are separated by physical distance and usually technology is used for bridge the instructional gap. Technology supports on teaching and learning enable the flexible delivery of education anytime and anywhere. Hence, many universities in Malaysia
provided an E-learning portal for a teaching medium purposely for long distance education and off-campus programs (Khalid, 2006; Chai and Poh, 2009).

The E-learning environment also provides students a place for interaction electronically with each other or with instructor in some activities like forum, discussion board, email and chat rooms. This way of learning enable learner to express their idea or their new finding information from internet (Brandl, 2005; Bajahzer et al., 2008). Moodle (Modular Object Oriented Dynamic Learning Environment) is an open source Learning Management System (LMS) which is the number four famous product for E-learning. Moodle is confirmed able to increase student confidence before exam by connecting individual course together and sharing materials with each other. Besides that, it allows teacher to provide and share document, graded assignment, quizzes within this quality online course.

The earlier E-learning is restricted to computer lab’s computer and cabled internet services. However, since 2000, the advance in information technology and computing had provided another learning concept by using the portable PCs like notebook with wireless LANs. But now, education is being transformed by the use of wireless mobile technologies into Mobile Learning where this flexible method is unbounded by space and time.

1.2 Background of Problems

The rapid development of mobile devices in the information age matches with the trend where the information can be achieved at fingertips and independency of time and location. Mobile Learning (M-Learning) is emerging to be the next generation of E-learning.

“State of the internet…… Mobile will be bigger than Desktop Internet in 5 years”

(Morgan, 2010)
Morgan (2010) believes that more users will be likely to connect to internet via mobile devices than desktop devices within 5 years. Hence, researcher should start to explore the potential in mobile device and using the advantages of mobile device in creating a portable and affordable learning for all learners.

Actually, Mobile Learning is a part of learning technologies which combine mobile technologies and E-learning, it delivers E-learning materials and provide learning environment on mobile devices such as mobile phone, PDA (Personal Digital Assistant) and other devices (Mariam and John, 2008). Mobile Learning can offer small and consumable learning contents which can be delivered through wireless network to all mobile devices (Saipunidzam et al., 2010).

Nowadays, the use of mobile phones and handheld device among students in western country has dramatically increased. Mobile technologies offer capabilities that can support SMS based system and some advance mobile wireless device can support web based system. There have been a number of systems developed by western country where the mobile device is used in supporting the classroom interaction between teacher and learner. One example is the computer science program at the University of Minnesota, Duluth where it had already picked the pocket PC platform to support two functions: reference materials and exercises for students. Students can use the device as portable textbooks and easily offering information usually contained within bulkier, more expensive book forms (Alexander, 2004).

According to New Media Consortium and Educase (2006), teachers in higher education in the United Kingdom have made use of SMS (Short Messaging Service) as prompts for course requirements, polling classes and pop quizzes with some universities experimenting with phone exams where the users’ voice print identifies them as the test taker. Similarly, mobile phones used as support mechanisms to remind students about assignment submissions and course enrolments (Gayeski, 2007; Herrington, 2007).
The Mobile Learning in Malaysia is still consider new trend and not yet widely used in higher education. In Malaysia, LTT Global Communication which is a private company at Petaling Jaya establishes its own business product which is based on mobile E-learning English language. LTT Global Communication has built up a case for using mobile phone in education where they applied it in teaching and learning English language. This product’s name is **SMS-ME-ENGLISH**, which work over SMS and students will receive text messages that can help them in learning the language. This application can be classified as a learning application for adult learners (Kashminder, 2007; Poon and Koo, 2008).

Another mobile application produced by Universiti Teknikal Malaysia Melaka (UTeM) is Mobile Learning Notes for SPM Sejarah “Islam Di Asia Tenggara”. This learning application needs to be installed in mobile device and it enables learning everywhere because mobile phones are carried by anyone everywhere (Abd Wahab, 2008). Besides that, UTeM also produced another Mobile Learning application which enables 8-10 years old children learn mathematics using mobile phone. The content of the project is to teach the student on how to memorise the times table using accelerated learning techniques (Hashim, 2008).

M-learning advances than E-learning in term of accessing learning content anytime and anywhere. The Learning Management System (LMS) used for E-learning will become better if integrated with mobile service for mobile device. Moodle is one of the Open Source Software (OSS) which almost free to download, to use, modify and even distribute under the terms of licence. This free open software was widely adopted by universities and educational institution for E-learning purpose. Teachers can provide and share documents, quizzes, discussion forums to students (Dougiamas, 2007; Bajahzer et al., 2008). According to a research done by Houser and Kinjo (2005) the Moodle usually designed for large screen desktop and laptop is perfectly used by learner. But a lightweight version of Moodle with small screen has not yet been developed for helping students access to learning materials in lecture classes.
Meisenberger and Nischelwitzer (2004) stated that traditional E-learning with their Personal Computer (PC), notebook or laptop cannot give a real independency of time and space because it is hard for everyone to bring their notebook or their Personal Computer (PC) with them all the time. The real independency in time and location according to Sharples et al. (2005) is that the process of learning is regardless of time (whenever) and place (wherever) where a learner can access to his learning materials.

Besides the independency problem, nowadays many universities are implementing some technologies that allow students to access learning course materials on wireless devices. But most of the learning materials or lectures note can be accessed by using E-learning methods. Mode of delivery should shift to M-learning (Georgieva and Trifonova, 2006). He also stated that students’ usage of E-learning will increase their interest to M-learning. Hence, Mobile Learning applications together with learning platforms are required so that student has a chance to access learning course by using mobile device.

Although learner can access for their own necessary information or interact with their lecturer by using laptop computer or desktop computer; a small, handy, always with the user and able to connect to internet mobile device will replace those immobile devices. For now, not all the activities and teaching materials used in E-learning system are suitable for mobile delivery. There still lack of some online learning platforms for mobile device user since the percentages of mobile device holder become higher and higher.

One of the advantages of E-learning is students are able to communicate with their instructors and each other, access learning materials and submit assignments using the power of internet (Paulus, 2009). Interactivity and communication between lecturer and students in a classroom are very important. The learning process is achieved when there are a lot of active involvements between students and their lecturer (Krause & Effelsberg, 2003; E Costa et al., 2008). Actually, lecturer-student contact in and out of the classroom is very important in building student’s motivation and involvement in class. But, sometime because of time constraints,
some lecturers do not encourage interaction between students and lecturer. Besides
that, some students feel shy to ask question in front of a large audience and cause the
communication fail to occur.

There are many advantages of applying Mobile Learning in higher education
and more and more universities start to implement the new technology. A research
was done by Jacob and Issac (2007) on students’ perception on Mobile Learning in
higher education campus. The finding shows that majority of student support that
wireless networks increase the flexibility of accessing to resources in learning by
using palmtop, mobile phones and PDAs.

Besides that, another advantage of Mobile Learning is it can be a new
educational tool. Douglas et al. (2008) carried out a survey about the effectiveness of
HotLava Software’s Learning Mobile Author in improving learning outcome. The
finding shows that this mobile phone application can make a significant in students
learning outcome and hence can be used as one new learning tool in education.

Because of the advantages of Mobile Learning, more and more research has
been carried out on the effectiveness and acceptance level of Mobile Learning among
students. Research done by Joseph and Maria (2007) is a survey on the students and
faculty’s readiness for Mobile Learning. A total of 94% of students indicated their
readiness for Mobile Learning because all of them own a cell phone or smart phone.
About 60% of faculty also affirmed their readiness for Mobile Learning. Researchers
also stated that faculty can implement Mobile Learning in their online course by
adding or making more learning content and information in the form of easily
accessible by using mobile phones.

There are many benefits of plugging mobile technology into E-learning
system as potential for increasing productivity within the scope of the new M-
learning paradigm (Wierzbicki 2002; Poon and Koo 2008). The educational field
changes its paradigm from teacher-centered learning to learner-centered learning
under informatics world. However, what are the perceptions among local university’s
students toward Mobile Learning? Are they ready to use their mobile devices for a space and time unbounded learning? Mobile Learning is a unique and special approach and hence a movement toward mobile age is a need.

1.3 Statement of Problems

The emergence of Mobile Learning is not to replace the E-learning method, but act as another learning method which is used to improve learners’ learning experience. The Mobile Learning scenario is still ‘young’ especially in the developing country like Malaysia. Learners still carry out their learning when there is a computer or laptop and internet service. They fail to learn at any time and everywhere they are. Mobile Learning can bring many benefits and thus there is a need to develop a Mobile Learning environment with Mobile Learning materials. Mobile Learning situation can firstly be implemented in local university and hence provides a higher level of support for learner to adopt the usage of mobile device as an additional learning tool and communication tool.

E-learning system can integrate into regular curriculum by using LMS and provide a communication platform between instructor and learner. Now, mobile can access to LMS like Moodle and provide extra special such as portability, social interactivity, context sensitivity and individuality. But the adoption of LMS by using mobile devices is still new and not much developed by instructor for learning purpose. Hence, there is a need to expand the capabilities of Moodle so that it can be served as Mobile Learning platform which can support online interactive learning and various activities.

This project aims to collect data about the readiness and perceptions of postgraduates in Higher Public Learning Institution (IPTA) toward the concept of Mobile Learning. Besides that, an online Mobile Learning environment or called as mobile Moodle will be developed in order to provide a series of learning materials to be accessed by mobile devices especially mobile phone. Lastly, a survey will be
carry out to survey the acceptance level among postgraduates in adopting Mobile Learning as an additional learning tool and communication tool for educational purpose. Technology Acceptance Model (TAM) will be used to collect data about the perceived usefulness and perceived ease of use towards mobile Moodle.

1.4 Objectives of the Research

The objectives of this research are:

(i) To study the postgraduates’ readiness towards the usage of Mobile Learning based on their preferred activities on mobile device.

(ii) To study the postgraduates’ perceptions from the aspect of their concepts about Mobile Learning.

(iii) To develop Mobile Learning environment (Mobile Moodle) which connect to a Learning Management System (LMS) based on postgraduates preferred activities.

(iv) To develop Mobile Interactive Learning Object (MILO) for Mobile Moodle.

(v) To evaluate postgraduates’ acceptance in adopting Mobile Learning as
   a. an additional learning tool
   b. a communication tool for learning purposes.

(vi) To examine the postgraduates’ intention to use Mobile Learning environment (Mobile Moodle) based on the main constructs of Technology Acceptance Model (TAM):
   a. Perceived Usefulness
   b. Perceived Ease of Use
1.5 Research Questions

The research questions of this research are:

(i) Are the postgraduates ready towards the usage of Mobile Learning based on their preferred activities on mobile device?

(ii) What are the postgraduates’ perceptions in term of their concepts towards the Mobile Learning?

(iii) What is the postgraduates’ acceptance in adopting Mobile Learning as an additional learning tool for learning purpose?

(iv) What is the postgraduates’ acceptance in adopting Mobile Learning as a communication tool for learning purpose?

(vi) Are the postgraduate’s intent to use Mobile Learning environment based on Perceived Usefulness and Perceived Ease of Use according to Technology Acceptance Model (TAM)?