A STUDY ON LEARNER READINESS FOR MOBILE LEARNING AT OPEN UNIVERSITY MALAYSIA

Zoraini Wati Abas, Ed.D.
Institute of Quality, Research and Innovation
Open University Malaysia, Kuala Lumpur, Malaysia

Chng Loi Peng
Faculty of Science and Technology
Open University Malaysia, Kuala Lumpur, Malaysia

Norziati Mansor
Institute of Quality, Research and Innovation
Open University Malaysia, Kuala Lumpur, Malaysia

ABSTRACT

Prior to embarking on mobile learning, a study was conducted to determine the readiness of learners at the Open University Malaysia (OUM), Malaysia's first open and distance learning university. The study conducted in the last quarter of 2008 attempted to determine, among others, the extent of ownership of a mobile phone, readiness to be a mobile learner as indicated by questions such as willingness to buy a new mobile device and preparedness to subscribe to additional mobile services, types of materials they would like to receive and their perceptions about m-learning. Out of a total of 6,000 questionnaires distributed, 2,837 were returned. The respondents were from 31 learning centres from all parts of the country. Most of the respondents were between 31 and 35 years old and were largely undergraduates. The findings indicate that almost all (98.91 percent) learners at OUM have a mobile phone and that 82.84 percent of the respondents can imagine themselves learning through mobile devices. When further questioned, 47.98 percent of the learners stated they would be ready for m-learning within six months and another 15.73 percent believed they will be ready within 6 to 12 months. In other words, 63.71 percent of students are ready for m-learning within the next 12 months. The paper highlights the findings and implications to the m-learning project at the university.

KEYWORDS

Readiness, m-learning, distance learning, learners

1. INTRODUCTION

Mobile learning or m-learning is set to be the next big wave in education. It offers enormous potential as a tool to be used in situations where learners are geographically dispersed, to promote collaborative learning, to engage learners with content, as an alternative to books or computers, as an alternative to attending campus lectures and for 'just-in-time' delivery of information. Once limited to making and receiving calls, mobile phones today are evolving into educational platforms for information access and learning. With mobile technology, we can "push" and "pull" information and deliver learning to any one at any time and at any place. It provides learning on-the-go or just-in-time learning. The potential of mobile devices in enhancing learning is enormous and many higher education institutions are expected to embrace m-learning soon.

1.1 m-Learning in Malaysia

It was estimated that 90 percent of the population of 27 million Malaysians subscribe to mobile phone services, compared to 16 percent having fixed lines (Karimuddin, 2008). Malaysia has the second largest mobile penetration in South East Asia, behind Singapore. Almost every learner in higher education can be

seen to have a mobile phone. Most Malaysians consider mobile phones a necessity. It can be further observed that mobile phone service providers are continuously trying to gain increasing market share by offering very competitive rates for calls and short text messages or short message service (SMS) in order to get customers to switch from one mobile phone operator to another. It was also reported that 10 billion text messages were sent during 2006.

It is interesting to note that the Malaysian government expects to see a growth in m-learning among its 20-23 million mobile users in the nation. The growth of mobile content development in Malaysia is also encouraging. The Malaysian Communications and Multimedia Commission in partnership with one of the country's largest mobile service providers organizes an annual mobile content challenge, a national competition to encourage creation of innovative mobile content and applications. The event awards the best entries with cash rewards and provides opportunities for all winners to become technopreneurs. It is also expected that several of the country's higher education institutions will soon embark on m-learning. One of the first to do so in a systematic way is the Open University Malaysia. Recently, a proposal to establish the Association of Malaysian Mobile Learning was lauded by a group of academicians from more than twenty institutions in Malaysia in November 2008. The latter marks the beginning of a concerted effort to move m-learning into the forefront and to help spearhead collaborative efforts by experts from various institutions in Malaysia.

1.2 m-Learning at the Open University Malaysia

Open University Malaysia (OUM) was established in August 2001 to respond to the country's need to democratize education and to offer opportunities for higher education to the country's working adults. It is the pioneer in the open and distance learning (ODL) education in Malaysia. OUM adopts the motto "University for All" which believes education should be made available to all, regardless of time, place, age and social economic background. The university offers a blend of pedagogies for delivery of instruction for its learners. This includes self-managed learning, face-to-face tutorials and collaborative online learning. It leverages on various ICT technologies, particularly the Internet to reach out to learners no matter where they are geographically and no matter what age they are. Hence, OUM reaches out to learners who live or work as far away as the interiors of dense tropical jungles that are accessible only by boat. To date, the university has produced almost 14,000 graduates out of an enrolment of over 75,000 learners. Internationally, it has learners in Bahrain, Yemen, Maldives, Indonesia and Singapore.

It recently decided that although it has been successful with its e-learning implementation, it was now time for the university to embark on m-learning for academic purposes. The primary objective is to enrich the learning environment and to offer greater flexibility in learning to OUM learners. It had, since 2004, implemented the use of text-based short messaging system for administrative announcements such as reminders, announcements and alerts which are pushed to the learners at various points during the year. As OUM embarks on m-learning for academic purposes, it is important that the project starts on the right footing. A research team on m-learning was established in 2008 to spearhead the innovation in a systematic way. Comprising academicians or those involved with tutoring of courses at OUM, the team comprises members whose first task is to look into aspects of readiness and considerations for technology and pedagogy. The team believes in being able to make informed decisions during the project so as to optimize the learning opportunities provided to learners and hence, will conduct studies related to readiness of learners, technologically and psychologically for m-learning. In addition, the team will conduct impact studies during implementation. As Wagner stated, technology, no matter how good, in and of itself may not guarantee better learning. But, when effectively deployed, technology can help focus attention while attracting and maintaining a learner's interest. What is more important is to make the learning experience compelling and the results highly interactive (Wagner, 2005).

2. REVIEW OF LITERATURE

It has been suggested that m-learning can tackle issues of democratic participation and social inclusion (Tétard, Patokorpi & Carlsson, 2008). Mobile devices are cheaper than a personal computer and are used by many because the devices are more affordable and in the case of mobile phones, is almost a necessity to

have. Hence, e-inclusion is made more possible through use of mobile phones for information downloads or for learning purposes. Recent developments in the mobile and wireless technologies have facilitated this new mode of learning – m-learning. Based on reviews of m-learning (Goh & Kinshuk, 2006), it can be concluded that m-learning can significantly complement e-learning by creating an additional channel of access for users of mobile devices such as handphones, PDAs, MP3 and MP4 players.

According to Yamaguchi (2005), m-learning is a form learning which leverages on the mobile device's portability and affordability. m-learning is considered as a form of teaching and learning that occurs through mobile devices such as mobile phones, Personal Digital Assistants (PDA), and others. m-learning allows learners to access computer-based learning anytime, anywhere and as stated by Traxler (2007), and m-learning overcomes poor internet connectivity, frequent power disruptions and low PC support and availability, especially in remote and rural areas and is strengthened by the vigour and talent of the mobile phone networks.

Based on information gathered from visiting several top university Web sites, projects such as iTunes University have incorporated over 50,000 educational audio and video files from these top universities, museums and public media organizations from around the world, offering them as podcasts to learners. Learners can use iTunes to download them and listen or view them through their MP3 or MP4 players, respectively, which are increasingly being incorporated in some of the latest mobile phones. Other projects include Duke University's Duke Digital Initiative (DDI) through which learners can use mobile devices such as Apple iPods and mobile phones to listen to class podcasts and receive text alerts through SMS. OUM is also currently setting up an "iTunes" page for learners to download over 100 podcasts, largely comprising learning segments from its previous iRadio (internet radio) webcasts.

As Wagner (2005) stated, the use of technology alone is insufficient to ensure success in learning. Other important factors are to be considered includes the technological readiness, and the attitude and acceptance by the end-users. Technology readiness can be defined as "people's propensity to embrace and use new technologies for accomplishing goals in home life and at work". The index for technology readiness comprising four dimensions, namely, optimism, innovativeness, discomfort, and insecurity was developed by Parasuraman and Colby (2001). Other similar readiness measures include applying the Technology Acceptance Model (Davis, 1989) which could be used when implementing m-learning or the Concerns-Based Adoption Model (Hord, Rutherford, Huling-Austin, & Hall, 1987) to investigate whether changes are supported when implementing new modes of learning.

Readiness of learners in the other two aspects (attitude and acceptance) is also crucial. Readiness for change involves acceptance and in this example, it was felt necessary to determine how learners will accept m-learning as an additional learning mode during their study. It is with these in mind that a m-learning readiness survey was conducted among learners at the Open University Malaysia to determine how ready they were in terms of technology, readiness for a new learning innovation as well as when they would be ready and what kind of learning materials they would like to receive through their mobile devices.

3. THE STUDY, RESULTS AND DISCUSSIONS

A survey to determine the learner's readiness for m-learning was developed by the research team and administered to learners at 31 OUM learning centers during the September 2008 semester. A total of 6,000 questionnaires were distributed randomly to learners undertaking various programmes offered by OUM. From the 6,000 questionnaires, 2,837 questionnaires were received and this translates to a response rate of 47.28 percent.

3.1 Profile of Respondents

From the analysis of findings, respondents divided into six main geographical regions: the northern, eastern, southern, and central zones of Peninsular Malaysia as well as Sabah and Sarawak on the island of Borneo. The majority of respondents came from Sabah and Sarawak (31.76 percent) and the central zone of Peninsular Malaysia (26.01 percent). On the gender distribution, the number of female learners outweighed the number of male learners, representative of the actual gender distribution. A large portion of the learners were between ages of 26-35 years old, which are often the working young adults who need to upgrade their

academic qualification, in most cases, self financed (59.15 percent). Most of the sampled learners were from the Faculty of Business and Management (39.47 percent) and Faculty of Science and Technology (32.79 percent). The monthly household income was being determined and the results revealed that learners had a rather low household income, with 50.35 percent of the learners' earning a household income of between RM1,501 to RM3,500. Table 1 shows the summary of profile of respondents.

Table 1. Summary of profile of respondents

Profile of Respondents		Frequency (n)	Percentage (%)
Geographical Distribution	Peninsular Malaysia		
	Eastern zone	455	16.04
	Central zone	738	26.01
	Southern zone	375	13.22
	Northern zone	368	12.97
	Sabah and Sarawak	901	31.76
Gender Distribution	Female	1714	60.42
	Male	1123	39.58
Educational Funding	Scholarship	1156	40.85
	Self financed	1674	59.15

The respondents were given a scenario of mobile learning via a diagram (see Figure 1) and were asked, "Can you imagine yourself learning in the above scenario?" It depicts some of the capabilities of mobile learning; learning through mobile device, collaborating with peers, listening and/or watching video lecture, browsing the Internet and reading course content. 82.84 percent of the respondents stated they could imagine themselves learning through this scenario.

A large number of learners (98.91 percent) owned at least one mobile phone. The rapid developments in the mobile phone industry, advanced and sophisticated mobile phones are becoming more affordable. With the entry of various mobile phone brands in Malaysia, it was rather difficult to categorize specific models of each brands of mobile phone; hence, the preferred brand of mobile phone is reported. The preferred mobile phone brand is Nokia (63.20 percent), followed by Sony Ericsson (18.88 percent). The mobile phone owned were considered as recent models as 30.59 percent of the learners purchased in year 2007 and 21.07 percent purchased in year 2008. It was important to determine the year of purchase as recent mobile phones would have embedded with various multi-media features such as 3G, audio listening capability, external memory storage, and so on. From our observation, these features are usually embedded in most mobile phones available in Malaysia with prices ranging from RM600 onwards. In addition, carrying an advance and expensive mobile phone could be seen as a status quo and we suggest that this would also enrich their mobile social networking via the availability of video call, MMS, and Bluetooth technology; which enable learners to share files such as picture files. In our study, a large amount of learners purchased their mobile phone from RM500 onwards.

The type mobile phone operator, type of services subscribed and the average monthly bill were also investigated. There are four major mobile operators in Malaysia; Celcom, Digi, Maxis and U-Mobile; and Celcom is the preferred mobile operator followed by Maxis (see Table 2). Consumers in Malaysia are given a choice to subscribe to Postpaid or Prepaid services. The Prepaid service was clearly the choice among OUM learners. In the Prepaid service, consumers have control of their usage by purchasing a specific amount of credit in advance. The amount of prepaid credit purchased and the average monthly bill among OUM learners ranges between RM30 to RM59 (38.21 percent). The results could easily means that OUM learners are cost conscious.

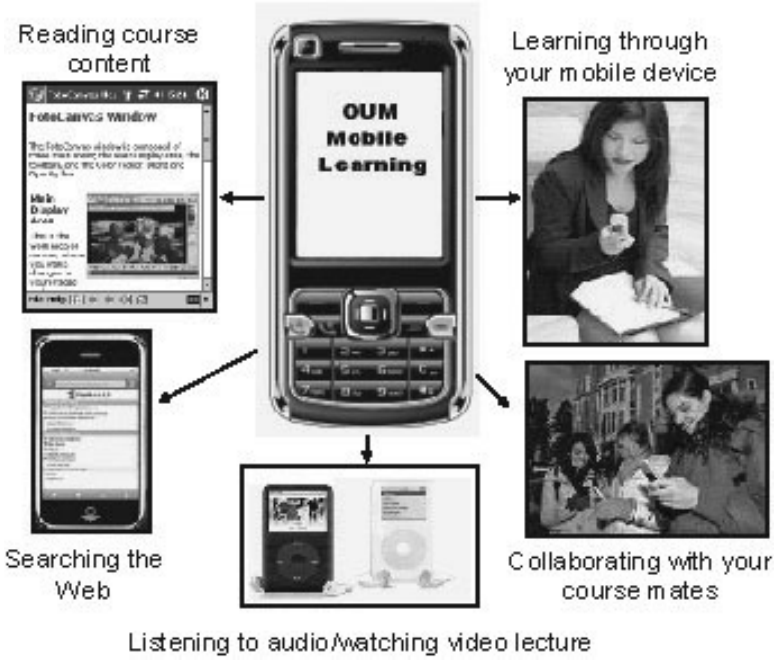

Figure 1. The scenario respondents were asked to respond to

Table 2. Summary of the mobile services subscribed by OUM learners

Mobile Services		Frequency (n)	Percentage (%)
Mobile Service Provider	Celcom	1491	52.95
	Maxis	918	32.60
	Digi	402	14.28
	U-Mobile	4	0.14
	Do not know	1	0.04
Type of mobile subscription	Postpaid	986	34.76
	Prepaid	1829	64.48
	Do not know	22	0.78

3.2 Mobile Learning Readiness

The study revealed that OUM learners are ready to embark on mobile learning. They are willing to spend to a certain degree to purchase a new device and to subscribe to services that would enable m-learning, and learn via mobile in the next 12 months. This study showed that learners expressed their willingness (65.95 percent) to purchase a new mobile device (mobile phone, Pocket Digital Assistance, mobile video player, etc), ranging from RM250 to RM1500 in order to embark onto m-learning. Learners also willing to spend between RM100 to RM500 to subscribe (55.91 percent) to relevant services offered by their mobile service providers. The subscription of relevant services is important to facilitate mobile learning. However, there were about 44.09 percent not willing to subscribe to additional services that enable m-learning. With the inclusion of affordable WiFi enabled mobile phones, and with the Malaysian government's initiative to provide free WiFi services, perhaps learners do not need to subscribe additional mobile services to enable m-learning.

On the preferred type of courses for m-learning, a high percentage of learners would like to learn non-technical courses compared to the programmes' core courses, which are usually technical. Besides this, learners would prefer to listen to the OUM print-based modules rather than reading them. This could be easily understood as most OUM learners are working adults, and they probably would like to utilize their time by listening to their modules while commuting and/or waiting for services to be rendered to them (e.g.

queuing in bank, post office). In addition, learners would also like to receive reminders on important events (submission dates of assignments, examination dates and venue, etc) and tips which would be helpful in their study. Table 3 summarizes the information about learners' preference on the preferred mobile learning materials.

Table 3. Summary of the preferred mobile learning materials

Mobile Learning Materials		Frequency (n)	Percentage (%)
Courses	OUMH*	1501	52.90
	Information Technology	397	13.99
	Mathematics	248	8.74
	Science	218	7.68
	Social Science	64	2.26
	Others	118	4.16
	No response	291	10.26
Audio version of the print based modules	Yes	1701	59.96
	No	1124	39.62
	No response	12	0.42
Receivable learning contents via mobile device (multiple responses were allowed)	Reminder	1531	53.97
	Tips	1382	48.71
	Online tutorial (audio)	1165	41.06
	Online tutorial (video)	1127	39.73
	Quizzes	1115	39.30
	Main concepts	1067	37.61
	Graphical simulations	1068	37.66
	None	440	15.51

* OUMH = University courses

3.3 Perception on Mobile Learning

The perception on mobile learning was also being examined. From the findings, it can be conclude that learners, generally, viewed mobile learning as beneficial. In term of time management, learners have the opinion that m-learning will better assist them in managing their time (42.38 percent) as well as to focus on their learning (41.64 percent). The learners also agreed that m-learning will motivate (43.15 percent) and attract their interest in learning (45.06 percent). The motivation factor, we believe, could derive from the sense of belonging as learners have minimal face-to-face interaction with their peers and tutors. A large percentage of the learners felt that m-learning would make learning even more flexible (49.98 percent). The addition of mobile learning would definitely bring a new learning experience to the learners, and complement OUM's blended learning pedagogy.

3.4 Implementation of m-learning

Before implementation of m-learning, we felt that it is important that a guide to be developed for our m-learning content developers. We are currently devising a guideline for m-learning content developers. The guideline will consist of an overview of learners' background, course outline and learning outcomes, suggestion of appropriate pedagogy, guide to types media format, and certainly, copyright issues. The content developers should be the subject-matter-experts who are able to identify the difficult and/or abstract concepts of a particular course. They would then create the mobile learning objects along with the instructional designers.

While one team delves into the guideline, another team has built a prototype web page that enables m-learning which enable learners to view using their mobile phones and contains downloadable materials. Technical issues such as the size of the media file and compatibility of the media file on different mobile phone models and the cost of downloading are some of the issues currently faced. Rigorous testing and evaluation will be conducted.

4. CONCLUSION

Technological advancements have brought many positive changes in the way we learn. With technological innovations and affordability, learning can take place through mobile devices. The sampled learners in OUM are ready for m-learning as 82.84 percent of the learners imagine themselves learning through their mobile devices. From the sample obtained, 98.91 percent of the learners have at least a mobile phone purchased within the last two years, which costs them RM500 onwards and their mobile phone models were mostly from Nokia and Sony Ericsson. Most learners subscribe to the prepaid plan (64.48 percent) offered by two of the largest mobile service providers, Celcom (52.95 percent) and Maxis (32.60 percent). Learners in OUM expressed their readiness to learn courses which are reading in nature and would like to listen to the narrated version of the OUM print based modules. Learners also like to receive mobile contents such as reminders, tips and audio files.

From the sampled learners, almost half, that is, 47.98 percent learners are ready to learn through mobile devices within the next 6 months and another 15.73 percent expect to be ready within 7 to 12 months. In order to enable m-learning, 65.95 percent learners also expressed their willingness to purchase a new mobile device and 55.91 percent are willing subscribe to additional mobile services.

With the learners readily to embark into m-learning, it is important that institution of higher education form a smart-partnership with industry players such as mobile telecommunication operators, manufacturers of mobile devices and programmers who have interest in developing the m-learning. The smart-partnerships are expected to bring richer and more meaningful learning opportunities to learners and resolve technical issues as well. Establishment of such smart partnerships is expected to contribute positively to the teaching and learning environment. Meanwhile, OUM will ensure that its m-learning will be interwoven with daily activities and blend with its current pedagogies to offer significant and more meaningful learning experiences that learners will find useful.

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