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Mobile Learning Readiness among Malaysian Students at Higher Learning Institutes

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Abstract

Learning today is beyond the four walls and the Internet environment. The advancement of mobile technology has opened up a myriad of learning opportunities for students in Higher Learning Institutions who need to cope with a complex and demanding learning environment. With this increasing number of mobile phone owners, especially among the student population in Malaysia, educators should look into the possibility of integrating mobile learning into the academic programmes at Institutions of Higher Learning. This paper focuses on basic readiness, skills readiness, psychological readiness and budget readiness of students at two different universities in relation to mobile learning. An online questionnaire survey was used to collect data for this study. The findings revealed that the students are highly familiar with computing skills and they welcome the integration of mobile learning in education. The study also revealed that the students were uncertain as to how much money they needed to spend for the telephone line and Internet line apart from the software and hardware requirements. A discussion on the implications of the findings will also be presented.

Keywords: mobile learning, readiness, higher learning institutes, mobile education

1. Introduction

The fast growth of new generation of mobile devices such as mobile phones, tablets as well as progression in wireless technology has intensified the great potential of mobile learning in becoming an effective tool for learning. Thus, according to (Wagner, 2005: 45) ‘‘the value of deploying mobile technologies in the service of learning and teaching seems to be both self-evident and unavoidable.’’ In Malaysia, mobile learning or m-learning is being explored by many individual educators and researchers. However, Traxler (2007) believes that the concept of mobile education is still emerging and still unclear. According to Kukulska-Hulmefv (2007) mobile learning is proving to be a fertile ground for innovation, but it is important to realise that the success of mobile learning will depend on human factors in the use of the new mobile and wireless technologies. It is only now that the challenges of mobile learning on a larger scale, and with diverse populations of students, are beginning to be understood.

Malaysian Communication and Multimedia Commission (MCMC) reported in a survey in 2008 that the main users of the mobile phone range in age group from of 20 to 49 years. More than half (56.4%) of the 28,000 respondents were males and the rest (43.6%) were females. Another report by Digital Media across Asia shows that in 2009, there were 100.8 mobile phones per 100 Malaysians. This indicates that each Malaysian may own more than one mobile phone. Malaysian 3G subscriptions also grew tremendously from a mere 427 in 2006, to a massive 4366 in 2008. With this increasing number of mobile phone owners, it is especially necessary for educators to look into the possibility of integrating m-learning into the university academic programmes.

2. Mobile Phones in M-Learning

Among the other mobile devices like PDAs, tablets, mobile phones have become the most popular device. Undoubtedly, mobile phones are the most popular types of technology that are popular and commonly owned by students. This worldwide phenomenon is also true in Malaysia. According to Malaysian Communication and Multimedia Commission (MCMC) in its 2008 survey reported that the main users of the mobile phones were those ranging in age of 20 to 49 years. In addition to this, MCMC also reported that in the second quarter of 2011,

there are 35,273,000 cellular telephone subscribers which bring the ratio of 123.5 mobile phones per 100 inhabitants. Apart from this, there are 2,307,400 wireless broadband subscribers in 2011 compared to 1,982,400 in 2010 recording an increase of 16.4%. Among the interesting findings in relation to m-learning and Malaysia as reported by The Ambient Insight Comprehensive Report (2011) is that globally, for the duration of 2010-2015, Malaysia is ranked the 9th highest Mobile Learning Five-year Growth Rates.

Despite this, m-learning is still in its infancy as the focus in most projects or studies are still lingering on the idea of establishing foundation, theory, design, type of m-learning and activities supported by mobile technologies. (Pollara, et al., 2011). After almost a decade since mobile technology first made its appearance in the area of English language learning worldwide as well as in Malaysian higher learning institutes (HLIs), little is known about the pedagogical effects of integrating the m-learning in ESL courses especially in Malaysia.

Learning is a process whereby a learner is expected to achieve an intended learning outcome within a given time frame. This learning outcome has to be measured in order to ensure that the learning has taken place. With teachers as guides or facilitators, in addition to learning resources like books, class notes, journals, learning materials, and communication tools, the learning process will become more interesting and meaningful, and even productive. The letter "m-" , which refers to "mobile" in m-learning, is only a mode of learning, and a mobile phone or tablet PC is only a tool to enhance the learning process. The major focus of m-learning is the learning itself rather than the technology represented by the mobile phones. Having a mobile phone for m-learning does not necessarily guarantee that learning will take place but how the learning process is conducted will determine the effectiveness of learning. With the presence of mobile tools like smart phones, learning in a mobile environment will become more interesting. Smart phones have not only communication facilities but also computing facilities which allow the users to communicate with other people but also to create documents, read data files, and access the Internet. Besides smart phones, recent innovative technology like tablet PCs or iPAD and the like allow integrated applications including computing and communication. These technologies provide a more convenient way of computing and of communicating with people. Users can receive emails, instant messages in text forms or multimedia formats, lecture notes, and audio and video files in 3G formats. They can also search for information in the Internet, synthesize the complied information, and reconstruct the information to make it a meaningful piece of knowledge for them. In other words, the learning process is no longer limited to the four walls of the classroom or the Internet environment.

3. Pedagogical Implications of Mobile Learning

In order to understand how people learn, the progression of behaviorism, cognitive science and constructivism serves as the foundation in guiding the migration of implementing technologies in learning, and hence mobile learning too. According to Thomas (2007), mobile learning could be adapted to the following types of learning by the instructors:

> **Behaviorism** – This propounds feedback and reinforcement. Mobile devices can facilitate these when faculty and students are using the devices in tandem.
>
> **Constructivism** – This demands rich media, simulations and immersive environments. Simulations, visualization and gaming environments could be provided through mobile devices at the convenience of students.
>
> **Informal or situated learning** – This talk of using education in "context aware" environments is relevant to the field of study. Mobile devices allow content portability into "context aware" environments.
>
> **Collaborative learning** – This propagates recording and sharing instantly. With the handy and portable mobile devices, there are many possibilities of creating and sharing student and teacher authored resources.

It is true that there is a developing trend in information technologies that provide interactive mechanism among the learners, instructors and the learning material. However, effective learning could happen only when the learner decides to engage himself actively and cognitively in the learning activities.

4. Related Studies

Studies that examined attitudes and achievement associated with mobile learning in a variety of contexts were selected for this literature review. In Malaysia, a study conducted by Jacob and Isaac (2008) carried out a study on the perception towards mobile learning revealed the mobile device usage among university students as a means to make the subject interesting and an effective learning supplement. Zoraini Wati Abas et al. (2009) concluded that through the formative evaluation of the Open University Malaysia (OUM) mobile learning

initiative, the use of SMSes was generally accepted by its students. It is also reported that mobile learning has great potential to be integrated in the existing blend of pedagogies at OUM. Mobile learning definitely contributes to the flexibility of learning in open and distance learning institutions. Norazah Nordin et al. (2010:1) reported that 120 post-graduate students at Universiti Kebangsaan Malaysia, who participated in a survey, agreed that "mobile phones had successfully enhanced the teaching and learning process. The findings also revealed that mobile-learning activities are effective ways to motivate students and to foster interaction."

This is further supported by Issham Ismail et al. (2010a) in a survey found most of the respondents were satisfied with mobile learning. Higher satisfaction was related to the study material, important notes, reminder that could reach them daily. Also, they highly agreed that mobile learning has helped them to pace their studies in distance learning courses. However, the study reveals that the respondents were not satisfied with the cost of communication with the tutor and other students in mobile learning courses. Another study conducted by Issham Ismail et al. (2010b) indicated by using mobile learning, learners could easily get any information that they need at any time anywhere. They also found that learners expressed desire to take another mobile learning assisted course if the courses are relevant to their learning needs. They claimed that the SMS of educational contents received through their mobile phone are easily remembered by them.

In a different study involving 105 respondents, Issham Ismail et al (2010c) through the Rasch Model Analysis, concluded that the use of SMSes managed to be effective in assisting the respondents with their studies. Respondents also agree that '...SMS-learning is safe, easy, effective and useful to help them study.' However, Issham (2010c) also revealed that it was difficult for the respondents to endorse that their interaction with the lecturer via mobile learning is clear and understandable.

According to Valk, Ahmed Rashid, and Elder (2010), the role of mobile phone-facilitated m-learning in contributing to improved educational outcomes in the developing countries of Asia by exploring the results of six m-learning pilot projects that took place in the Philippines, Mongolia, Thailand, India, and Bangladesh. Analysis of the projects indicates that while there is important evidence of mobile phones facilitating increased access, much less evidence exists as to how mobiles promote new learning. On the other hand, Naji Shukri Alzaza and Abdul Razak Yaakub (2011) investigated students' awareness and requirements of mobile learning services among Malaysian students in the higher education environment. The results indicate that the higher education environment has the required infrastructure to utilize m-learning services. Furthermore, the results show that the students have adequate knowledge and awareness to use such technology in their education environment. In another study, Ahmad Sobri Hashim, et al. (2011) conducted a study using Mobile System Analysis and Design (MOSAD) to investigate the satisfaction level towards mobile learning and the results indicated that the MOSAD application usability level was good and it could be a useful revision tool for the students of higher education.

In summary, the studies mentioned earlier which cover perceptions, awareness, readiness and satisfaction level towards mobile learning all showed positive results. Thus, this study will add to the plethora of mobile learning researches indicating students and faculty who already use mobile computing/communication devices will find ways to integrate them into all aspects of their lives - including the tasks of teaching and learning. Educators can assist students by making content more readily available and in formats that are easily accessible through popular mobile devices. As these devices become more powerful, they may coexist with or supplant other technologies to make learning more portable. We should prepare to take advantage of their benefits in higher education by planning how best to employ mobile devices in online and traditional classes.

5. Methodology

This study was conducted in the whole month of April 201 using an online survey. The questionnaire was uploaded at https://spreadsheets1.google.com/embeddedform?formkey=dEtjWFgyQUVwa240Q0ZmVnNRaG1EWmc6MQ. The self-report survey is divided into four sections namely: Section A: background information; Section B: hand phone facilities; Section C: internet access; and Section D: mobile learning**.** A five point Likert Scale with strongly disagree; disagree; agree; strongly agree and not applicable was used for main items. This approach is commonly employed in distance education research (Binar, 1993; Roberts, Irani, Telg & Lundy, 2005). Announcement was made in the Facebook and through email inviting undergraduate and post graduate students from local universities, namely University of Technology MARA and Universiti Kebangsaan Malaysia. A total of ninety-one students volunteered to answer the online questionnaire. The objective of this study is to explore the readiness of students in mobile learning from two local universities in Malaysia.

6. Findings

6.1 Demographic Information

Out of the 91 respondents, 56% of the respondents were undergraduate students and 44% were postgraduate students. Almost half of respondents were working adults (49%) and the other half are not (51%). Their year of study is fairly distributed as illustrated in Figure 1.

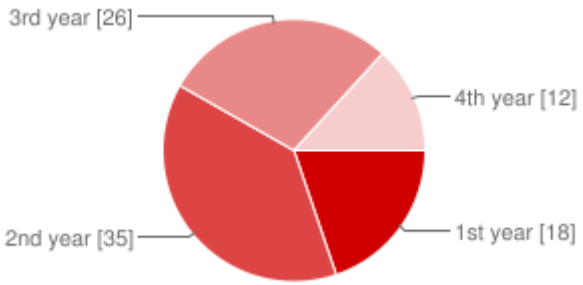

Figure 1. Respondents' year of study

The majority of them came from language discipline (57%) and education (21%). The Bumiputera respondents made up the largest ethnic group i.e., 63%, followed by Indian 15%, others (foreigners) 15%, and Chinese 7%. In terms of their age, 52% of the respondents were in the range of 20 to 25 years old, 24% between 26 to 30 years old, and the rest were above 30. Among the respondents, 70% were females and 30% were males.

6.2 Basic Readiness

The survey studied respondents' readiness to m-learning by looking at the mobile facilities they had**.** As shown in Table 1, all respondents own a mobile phone, 68% have a 3G service that was necessary to receive a 3G format for class notes, 88% MMS service that was required to read multimedia files, and 76% have Internet access via their mobile phone that was a pre-requisite for m-learning participation. In addition, the respondents indicated that their mobile phones are capable of reading audio, video, and graphic files, although these files require a bigger storage like a micro SD card. It seems that the majority of the respondents have already had the basic requirements to engage in m-learning. In general the findings indicate some positive move for both the universities to offer the m-learning to their students.

Table 1. Respondents' hand phone facilities

No.	Questions	Positive responses
1	Do you have a hand phone (mobile phone)?	**100%**
2	Does your hand phone have 3G service?	**68%**
3	Does your hand phone have 4G service?	5%
4	Does your hand phone have MMS service?	**88%**
5	Does your hand phone have a video call service?	**65%**
6	Have you ever used a video call?	58%
7	Does your hand phone have Internet access?	**76%**
8	Does your hand phone have a memory card that can store digital files?	**80%**
9	Can your hand phone read/open up the following files?	
	a. Word document	29%
	b. PDF document	25%
	c. Excel document	13%
	d. Power Point document	14%
	e. Video files	**84%**
	f. Audio files	**87%**
	g. Photos/graphics	**96%**

6.3 Skills Readiness

For m-learning to take place, having access to the Internet via mobile phones is an added advantage. It is true that respondents do not have Internet line in their mobile phones in order to receive a 3G file provided that their mobile phones have 3G services. Still a 3G phone usually has a WiFi facility. This study further explored respondents' Internet access. The results show that only 10% usually have access to the Internet. This means that respondents might have a monthly post-paid service bill which includes phone service and Internet service. Others might have subscribed to the Internet when needed, i.e., 37% because they could subscribe to the Internet on hourly or daily basis.

The following findings (Table 2) show their remarkable skills and experiences:

Table 2. Respondents' skills and experiences

No.	Statement	Positive responses
1.	sending/receiving e-mails via their mobile phones,	71%
2.	downloading files from the Internet using their phones,	73%
3.	sending 3G files to other people	77%
4.	receiving 3G files from others	76%
5.	opening up their 3G files	69%
6.	accessing social networking sites like Facebook, Friendster, Twitter	80%
7.	reading online news,	74%
8.	sharing their Internet connection from mobile phone to their computer	68%

These high percentages indicate that the respondents are familiar with the above activities, and therefore have the necessary skills to be engaged in m-learning, they might find m-learning activities as nothing new. In fact, they might find it convenient and comfortable to adopt m-learning. However, they were quite unsure how to convert files, like PowerPoint, into 3G format. Only 53%claimed to be sure of it.

D. Psychological readiness

To find out whether they are ready for m-learning, there was a need to find out the technical aspects. Besides it was crucial to investigate their perception of basic understanding of m-learning**.** Table 3 shows respondents' perceived readiness for mobile learning. For Statements 1, 2, 3, and 5, the high percentages reported in their responses depict positive perception of m-learning. 75% respondents agreed that they know about m-learning, 92% want to know more about e-learning, 84% want to be involved in m-learning, and 84% agreed that m-learning is good for working adults who are pursuing their higher education. In fact, 79% disagreed they did not know how to use 3G facility. Furthermore, their responses to Statements14-19 apparently indicate positive responses to m-learning, i.e. over 75% responded positively to the following:

- Mobile learning will save my learning time.
- Mobile learning is an alternative to web based learning.
- I need to learn how to use my handphone for mobile learning.
- I am looking forward to engage in mobile learning.
- I will upgrade my handphone if mobile learning is going to be implemented in my course.
- Mobile learning is an alternative to conventional learning.

When asked about the future of m-learning activities in Question 7, respondents showed mixed reactions. 74% disagreed with the statement that "Mobile learning will make my life difficult". Yet, the number of respondents who are ready for m-learning if the university implements this is below 50%.

Table 3. Respondents' perceived m-learning readiness

No.	Statements	1	2
		Disagree	Agree
1.	I know what mobile learning is all about.	23%	75%
2.	I want to know more about mobile learning.	5%	92%
3.	I don't think I want to be involved in mobile learning.	84%	15%
4.	I prefer conventional learning than mobile learning.	35%	63%
5.	I think mobile learning is good for working adults who are pursuing their higher education.	14%	84%
6.	I don't mind paying extra money for mobile learning.	53%	45%
7.	Mobile learning will make my life difficult.	74%	14%
8.	I am not ready for mobile learning if the university implements it now.	45%	44%
9.	I would like my lecturer to integrate mobile learning in my class in addition to face-to-face meetings in the class.	20%	79%
10.	I am afraid I will spend more money on my handphone bill because of mobile learning.	68%	31%
11.	I will be ready for mobile learning after 2 years.	43%	49%
12.	I don't know how to use 3G facility in my handphone.	79%	26%
13.	I would like my lecturer to integrate mobile learning in my class besides online forum in my course	21%	79%
14.	Mobile learning will save my learning time.	16%	76%
15.	Mobile learning is an alternative to web based learning.	10%	90%
16.	I need to learn how to use my handphone for mobile learning.	18%	78%
17.	I am looking forward to engage in mobile learning.	19%	76%
18.	I will upgrade my handphone if mobile learning is going to be implemented in my course.	21%	77%
19.	Mobile learning is an alternative to conventional learning.	16%	79%
20.	I think my university is not ready for mobile learning using handphone facility.	43%	46%
21.	Some of my lecturers are already integrating mobile learning in their teaching.	54%	38%

In terms of the class activities in m-learning environment, respondents are quite consistent with their responses. Although they still preferred conventional learning (84%) over m-learning (14%) as indicated in Statement 4, 79% agreed that they would like their lecturers to hold online forum and m-learning, in addition to face-to-face meetings as shown in both Statements 9 and 13. These results might have been influenced by uncertainties as they have never had any experience in m-learning.

Finally, their perception of institutional readiness to m-learning is moderate as indicated in Statements 20 and 21. Only 46% agreed that their university is ready for m-learning and only 38% of their lecturers are already integrating m-learning in the teaching.

E. Budget readiness

Any new technology integration in education will incur some cost to students. Responses to Statement 6 indicate that respondents are uncertain to spend extra money for m-learning (53% disagreed and 45% agreed). Yet, in another question i.e., Statement 10, 68% disagreed that they are afraid to pay more money for their phone bill due to m-learning engagement. In other words, when it comes to financial issues, they are uncertain as to how much it would cost them if they were to adopt m-learning. The same scenario we observed at the beginning stage of computer integration in education that students had to spend some money not only to buy hardware and software but pay for the maintenance of the hardware. Likewise, in m-learning, they have to pay for the phone line and Internet line beside software and hardware requirements.

As a whole, what is obvious about their m-learning readiness is when they responded to Statement 9: "I am not

ready for m-learning if the university implements it now." 45% disagreed with such statement, while 44% agreed with the statement. This is further supported by their responses to Q. 11 that 43% agreed they will be ready for m-learning in the next two years and 49% disagreed. In other words, they are not sure that they are ready for m-learning at this moment of time, although they welcomed m-learning.

7. Discussion

Having discussed the findings of the survey, we are convinced that Malaysian university students who participated in this study are highly familiar with computing and communicating activities using their mobile phone. However, a half of the sample population expressed they were not ready for m-learning at the time when this small scale study was conducted but would be ready to adopt m-learning after two years. Still, we can basically say that the respondents welcome the integration of m-learning in education. As m-learning is still at the early stage in Malaysia, respondents are not certain as how best to engage in m-learning. They also perceived that blended learning which involves face-to-face, web-learning and m-learning should be maintained in the courses at this moment.

The findings of this study do not represent a whole picture of m-learning readiness among Malaysian university students. In any research on readiness, it is rather incomplete to look into one group of respondents that is the student group. There are two other important groups i.e., administrators and educators or teachers, whose responses need to be studied too. Each group is interdependent of one another. Administrators have to be ready with a strong support system which provides infrastructure and mobile phone gadgets, human resource training for educators or teachers, annual budget for m-learning, and incentives to promote a greater success in the implementation of m-learning at the universities. Educators too should be ready in terms of pedagogical techniques which offer innovative but appropriate way of using the mobile phone in their teaching for m-learning mode and also new sets of work culture or work ethics that may shape the way they communicate and manage time effectively in m-learning environment. In brief, students might seem to be ready for m-learning in this study but the administrators and teachers might not; therefore it is too early to make a blanket claim that Malaysian Institutions of Higher Learning are ready for m-learning.

8. Conclusion

This paper has presented findings of a preliminary study of mobile learning readiness among Malaysian students from two public universities. The responses for three areas of readiness i.e., skills, psychological, and budget were analysed and interpreted. On the whole, respondents welcomed the idea of integrating m-learning into future courses as they were already familiar with computing and communication activities that m-learning may require. However, they were quite reserved when it comes to financial issues. More research with a larger sample from similar institutions of higher learning will provide a better and clearer insight into the issue of readiness of using mobile learning approaches. Besides the faculty members and administrators should be part of the study to complement findings of the study.

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