



## AN OVERVIEW OF MOBILE APPLICATION IN LEARNING FOR STUDENT OF KOLEJ POLY-TECH MARA (KPTM) BY USING MOBILE PHONE

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### ABSTRACT

*Mobile communication provides us with access to the outside world without borders. It is helpful in education and provides comfort to the students in the teaching and learning in which information and knowledge can be accessed by students and educators. This paper presents the introduction of mobile learning technology among students at the Kolej Poly-Tech MARA (KPTM) especially by using a mobile phone. Mobile Learning (M- Learning) is a new concept in the learning process which emphasizes the ability to facilitate the learning process without being tied to a physical location of learning process. It can be done anywhere by using mobile phones, laptops or netbooks, tablet PCs and smart phones. In Malaysia, the method of mobile learning is still at the early stage and several studies was carried out and proved the acceptance and high tendency shown by the students based on the results of the study. Applying the learning method M-Learning can improve students' interest, focus their learning and the student performance can be improved. Mobile technology-based occurs in places that do not rely on the network, going online independently, and can be accessed regardless of time and place. The use of mobile phones increase the access to education and facilitates changes in the methods of teaching and learning which support a large number of learning processes. This facility allows students to apply the knowledge they have learned from one situation to a different situation. The teaching and learning scenario at KPTM is more to the concept of talk and chalk. The application of mobile learning has not been implemented in any branch of KPTM and will become a benchmark to a new learning method at KPTM. From the results of a study, students are willing to use the mobile technology in learning process and they have a positive perception and awareness to mobile technologies and will use the elements in mobile technology in learning process to improve their performance and interest in learning.*

**Keywords:** Education, Mobile technology, Mobile learning, Teaching and Learning

## INTRODUCTION

Information technology has brought dynamic changes in the world of education. Education has been accepted as a cornerstone of economic development of the new millennium as it was seen as a catalyst for the knowledge society and morality. Education is a process that involves teaching and learning. Students also have individual differences in the learning process. Therefore, education will constantly improving the teaching process in order to produce a teaching and learning environment that adapts each student. The latest technological developments, especially in information technology have a great impact on our way of life, including in the educational area.

Latest information technology helps lecturers and students in teaching and learning. Indirectly, computer technology has played a big role in the development of education in Malaysia. Recently, drastic developments in mobile technologies have produced a new revolution in education. Mobile technology growing rapidly in which a total of 4 billion mobile phone users around the world have been recorded in mid-2011. According to [DigitalBuzz. \(2011\)](#), 57% of the global population or 1.08 billion users have a personal digital assistant (PDA).

## OVERVIEW OF MOBILE LEARNING

Mobile Learning or M- Learning is a new concept in the learning process. It emphasizes the ability to facilitate the learning process without being tied to a physical location ([Kukulska and Traxler, 2005](#)). In other words, the learning process can be done at anywhere and not only in the classroom. As a student in higher education institutions, particularly in Malaysia, mobile phones, laptops and smart phones are gadgets that are affordable. With the availability of technology, we have the opportunity to change the form of learning method: to create broad learning community, to connect people on the real-time and virtual world, to provide the necessary expertise and support lifelong learning ([Sharple, 2007](#)).

M-Learning is a computer aided learning style which using the latest mobile devices such as PDAs, cell phones, laptops and tablet PCs ([Prensky, 2001](#)). However, M-Learning is not a solely learning approach through mobile phone or learning using wireless internet but M-Learning is an evolution of e-learning, which is complete the deficiencies in previous e-learning ([Mostakhdemin-Hosseini and Tuimala, 2005](#)). It also associated with e-learning and distance learning. If M-Learning is associated with the internet and wireless, it is not dissimilar to the original concept of e-learning ([Parsons, 2011](#)). Therefore, the ability of a learning occurred even where the student is, or to wherever their destination regardless of the direction of time is an advantage of the M-Learning. M-Learning can be divided into three main types such as formal, informal and well-directed or self-directed ([Brink, 2011](#)). Normal learning covers learning manageable triggered by notifications and reminders such as short messaging system. Software is also categorized as formal learning. Informal learning strategy will encompass a two-way message exchange, an interactive relationship

and get data or feedback. Among the best examples are Facebook, blogs and Twitter. Self- directed learning will use reference and media-based materials such as videos and podcasts.

## NORMAL LEARNING STYLE VS MOBILE LEARNING

The following table shows some of the differences between normal learning styles and M-Learning (Devinder and Zaitun, 2006):

**Table-1.** Difference between Normal Learning and Mobile Learning

Normal Learning Style	Mobile Learning
Individual assessment, group projects, group discussions and project presentations will be done through quizzes and tutorials.	The use of multimedia elements in conveying information and receive online feedback.
Students will go to a class or lecture hall to attend the lecture.	The learning process can be done anywhere and at any time.
Students will interact face to face and allow them to communicate effectively.	Able to organize meetings and schedules of all team members at the same time.
Using chalk and talk method in delivering information	Students can get the lecture notes quickly without copying it from the board.

### Devices for Mobile Learning

There are a variety of mobile devices that can be used in the implementation of m-learning. Each device has the function of wireless technologies and has different capabilities. Among the devices used in the implementation of m-learning are:

- Mobile phones - the user can communicate with each other and can communicate through text and graphics.
- Notebook and Netbook - physically small and lightweight and capable of operating like a PC. It also supports wireless technology.
- PDA - a small device that serves as a small-sized personal digital assistant.
- Smart phones - combine mobile phones and PDA functionality and support mobile software applications including Internet access and multimedia applications.

### Mobile Learning in Malaysia

M- Learning technology has been absorbed into the education scenario in Malaysia but it still at the early stage. The study was carried out at a number of universities and colleges in Malaysia and proved that the acceptance and high tendency shown by the students of M-Learning based on the results of the study. Applying the learning method M-Learning can improve students' interest, focus their learning and student performances can be improved (Isham *et al.*, 2011), (Irwan and Norazah, 2011), (Issham *et al.*, 2010) as has been practiced in other countries such as the United States, Canada, Britain, Australia (Schmeckle, 2003) and Europe (Conole *et al.*, 2002) as well as

other Asian countries (Kaur and Ahmed, 2006). Continuous assessment by the lecturer to the students in a subject can be implemented accordingly. The use of mobile phones is very important in which information may be presented at any time and in any place (Hiramatsu *et al.*, 2012). Mobile phone is a device that helps in the process of teaching and learning in educational institutions. Community in Malaysia has begun to receive ideas on the use of mobile phones in education. There are some schools that have started using mobile phone in teaching and learning. Malaysia also has conducted a pilot study on the implementation through the study of "Use of I-Phone in Virtual Learning" (Utusan, 2011). This implies that most of Malaysian has a mobile phone and allows information to be obtained wirelessly which enable m-learning to be implemented.

Changes in education especially in the field of technical and vocational education in Malaysia are not easy as expected without any obstacles and challenges. It will take into account the economic, social and political scenarios which indirectly will affect the Malaysian education system. However, according to current economic conditions, the use of mobile phones dramatically increased among people in this country especially with the number of smart phones in the market that increased (Malaysian Communications and Multimedia Commission, 2012) gives a positive indication about the opportunity to implement m-learning in Malaysia.

## METHODOLOGY OF MOBILE LEARNING

Modern students are active and innovative in terms of learning because information is widely accessible through the Internet as well as a high level of technological literacy. They expect a quick response from the instructor to meet the needs of their learning process (Billings and Kowalski, 2004), (Johnson and Romanello, 2005). They want an interactive learning, student-centered, authentic, collaborative and on-demand. Effective learning is a fun learning as well as ICT has an important role in teaching and learning in schools. According to DePAN (2010), they tend to do the following:

- Independent and build their own information and knowledge.
- Able to work in collaborative way.
- Comfortable learning from a variety of sources of information.
- Able to learn in free space and always connected.
- Completing various tasks (multi-tasking) at once.
- Always search for information using equipment such as mobile phones and laptops.

A study was conducted to investigate the characteristics of effective practice learning in the 21st century that emphasizes the characteristics of innovative pedagogical practices of teachers (Law *et al.*, 2002). Studies have concluded that students showed more positive attitude in which they are able to think critically, learn information literacy skills by using the Internet, able to learn from their community with the idea of mutual respect for each other and learn from various sources.

## Mobile Learning's Framework

Mobile learning in education provides many benefits to the following aspects (Chen and Kinshuk, 2005):

- High learning needs.
- Own initiative in search of information.
- Mobile learning infrastructure.
- Interactive learning process.
- Determine the activities of the explanation.
- Integrated learning information.

Mobile technology-based education requires a distinctive design and model. In a traditional learning environment, all activities such as lectures, assignments, discussions and performances place at the time and fixed places. Desktop-based education occurs in a place with network facilities. Mobile technology-based education also occurs in places that do not rely on the network and going online independently. This is the first step for students to determine their own learning time and provide a new approach to lifelong learning. The change from a desktop computer-based learning to mobile technology-based learning provides new opportunities for students to determine their own learning activities and improve the efficiency of information exchange between students and teaching staff. According to Chen and Kinshuk (2005), an educational service based on mobile technologies is a mobile learning resource and can be accessed by students regardless of time and place.

To make mobile technology-based learning environments are dynamic, the information provided should be ready to be released regardless of time and place (Chen and Kinshuk, 2005). The learning system must also be designed in which the information provided to students can be chosen by the students according to their needs. The system should also be established to provide for the students the information according to their needs, for example students can easily change modules during the learning process (Chen and Kinshuk, 2005). The design of mobile technology-based education must be dynamic, easily scalable and can be applied at all times and places. In conclusion, the design of mobile technology-based education can be adapted by the user at all times and circumstances.

## The Role of Mobile Phone in Learning

In daily life, mobile phones are used for various matters, including in the field of education. Benefits of mobile phones are not limited to increased access to education but also it facilitates changes in the methods of teaching and learning. M-Learning is seen as a continuation of traditional learning methods and also as an alternative to the methods of effective learning. There is a general opinion states that the use of mobile phones can facilitate self-learning process in which students will reflex to the diversity in learning styles. M-Learning approach helps in designing learning activities, particularly in distance education, outside of the classroom and outside of class

hour. M-Learning also helps in constructing problem-based learning as well as any related assignments and projects that meet the students' interest (Kukulka and Traxler, 2005).

The mobile phones can support a large number of learning processes in daily life activities. This facility allows students to apply the knowledge they have learned from one situation to a different situation (Kukulka and Traxler, 2005). In other words, they can use the skills to analyze and then solve the problem. Generally, mobile phones allow student-centered learning in which students are able to modify the access and transfer of information to strengthen the knowledge and skills of students and to meet their educational goals (Sharples *et al.*, 2007). In the other words, the use of mobile phones in M-Learning will make students more active and the mastermind in the learning process than simply fed information by their lecturers. Compared with traditional methods of learning, M-learning will encourage students to actively collaborate to make the learning process as a constructive process and not to the instruction process (Pena-Bandalaria, 2007).

## MOBILE LEARNING APPROACH AT KPTM

The teaching and learning scenario at Kolej Poly-Tech MARA (KPTM) is more to the concept of talk and chalk. The traditional teaching method is centered on lectures and the teaching aids often being used are reference books, notes and supporting materials such as handouts. Such teaching methods result in the delivery of instruction to be boring. This environment will result in more students are not able to develop their interest in education. Current technology has created a revolution on learning methods (Kamal and Tasir, 2008). With the availability of technology in the classroom, students are able to experience an experience that cannot be provided by traditional teaching and learning methods. Now, the class room is no longer a static but dynamic and can be in any place. Today, electronic technology has flourished, leading to the use of mobile technology and wireless. The development of wireless technology and mobile communication devices has also contributed to the use of mobile devices in education (Ally, 2004).

The application of mobile learning will become a benchmark to a new learning method at KPTM. From the observation, this method has not been implemented in any branch of KPTM. There are several problems in the teaching and learning environment to trigger a proposed application of mobile learning. First, the timetable of lecturers and students are compact. A relatively limited time among students can reflect to their concentration in class because they had to rush to attend classes. For the lecturers, they face the lack of time to prepare for class. Time constraints will cause both sides have problems making class replacement if the existing classes canceled due to an emergency.

Secondly, students and lecturers often face problems the number of classes or lecture hall is limited or inadequate. The numbers of students are increased rather than the classroom or lecture hall

facilities available. Furthermore, the learning process will usually end in the class and it is hard to make a discussion and evaluation of outside class time.

Thirdly, most students often complain for their textbook or reference a bit thick and cumbersome. The problem persisted over the years and has a negative impact on the students and the learning process. Students will be lazy to refer to this reference material and will cause them to not be able to completely follow the learning process. The current scenario has seen a progress in the field of information technology and cyber security. The students are not left behind to follow current technology, but also the desire and inclination to own a mobile device such as 3G mobile phones or smartphones are high. Based on this phenomenon, it is an advantage to conduct mobile learning because this concept using the gadgets and devices such as PDAs, smart phones, tablet PC and 3G phone.

## **THE ADVANTAGES OF MOBILE TECHNOLOGY IN EDUCATION**

M-Learning has been proved to be effective in other countries and now has started to introduce in Malaysia. There are a number of higher education institutions that have integrated the mobile technology in their teaching curriculum. The notes can be shared with the availability of mobile devices such as mobile phones and smart phones among students. They do not have to sit in front of a personal computer to download the notes. It can be done by using internet provided by mobile phone service provider subscription or using the wireless infrastructure that provided by such faculties or departments. As such, download the notes can be done anywhere and at any time. Previously, the quizzes can only be done in the class, but now students can take their quizzes at any time. Lecturers can simply enter questions and set the time taken for the quiz. Students can obtain their scores in real time. Software for this quiz can be found easily and can also be produced by the lecturer using a simple programming technique. The requirements in this new learning environment should be considered so that the learning process is not confined to traditional methods. Through M-Learning, flexibility and control is given to the students. Students are given the flexibility to submit an assignment, quiz, download notes, discuss and perform learning activities according to their needs and time requirements.

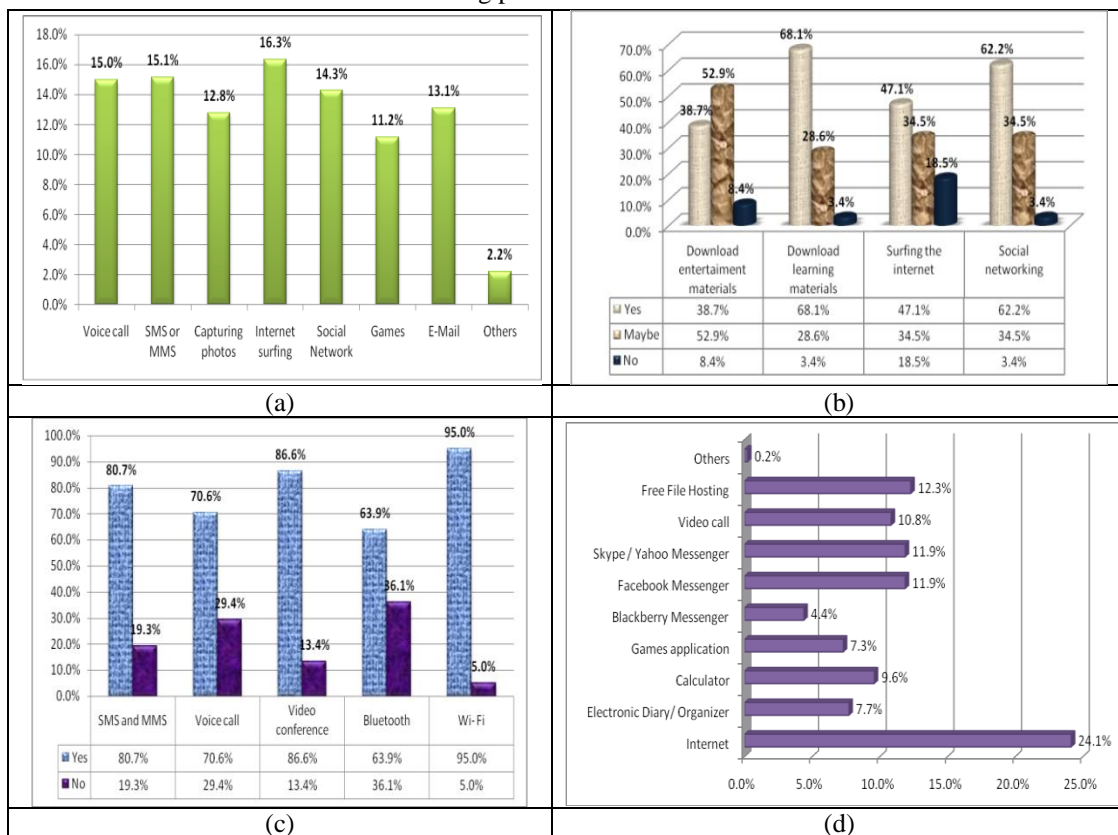
The study was conducted by Triantafillou *et al.* (2006) for tests and examinations carried out through mobile devices in education and found that the evaluation made by the M-Learning is more effective and efficient. This is because the test is carried out with M-Learning is more cost effective rather than the test is carried out with paper and pencil. Items that are answered by the students make the scoring process more accurate and precise. These positive effects can be applied in learning environments in higher education institutions in Malaysia. It can enhance the performance of a student in all aspects. In addition, they are also able to see and use this mobile technology with a wider perspective. Since each student has a different potential, M-Learning is the motivation for them to develop and improve their educational performance continuously. Short messaging service

facility that provided with mobile devices will make teaching and learning easier because all the information related to appointments with members of the group and lecturers can be implemented in real time. This facility is able to save time and facilitate a student and lecturers to set their daily schedules without bound at certain times

### STUDENT’S AWARENESS AND READINESS FOR MOBILE LEARNING

A study has been carried out to find out the awareness and the readiness of KPTM’s student for applying the mobile technology in learning process. The participant of the study is 200 students.

**Figure-1.** (a) Awareness of the mobile gadget usage. (b) Student's reactions if they have mobile gadgets with the internet or wi-fi connection. (c) Readiness to use elements in learning process. (d) Alternative elements to be used in learning process.



The perception on mobile learning was being examined. From the findings in Figure 1 (a) and (b), it can be conclude that students will use the mobile gadgets for voice call (15.0%), SMS or MMS (15.1%), capturing photos (12.8%), Internet surfing (16.3%), social network (14.3%), games (11.2%), e-mail (13.1%) and others (2.2%). This study also carried out that if they have the mobile devices with the internet or Wi-Fi connection, they tend to download learning materials (68.1%), surfing the internet (47.1%) and social networking (62.2%) rather than download entertainment



materials (38.7%). According to the result in Figure 1 (c) and (d), students are ready to use SMS and MMS (80.7%), voice call (70.6%), video conference (86.6%), Bluetooth (63.9%) and Wi- Fi (95.0%) as mediums in learning. In the other hands, they also willing to use the alternative mediums such as Internet (24.1%), electronic diary/ organizer (7.7%), calculator (9.6%), games application as well as messengers like Blackberry Messenger, Facebook Messenger and Skype / Yahoo Messenger (28.1%), video call (10.8%), free file hosting (12.3%) and others (0.2%).

As a result, this study shows that students are willing to use the mobile technology in learning process. At the same time, they have a positive perception and awareness of mobile technology and will use the elements in mobile technology in learning process.

## CONCLUSION

M-learning has begun to play an important role in learning. The existence of wireless mobile technology has made it a reality. Flexibility for students to learn and acquire information to make the m-learning is very popular. With advanced technology and affordability of mobile devices, m-learning is not difficult to implement in KPTM. Thus, it was shown that m-learning is ideal for implementation in KPTM while seizing opportunities to produce students who are competitive and able to capture the generic skills in the students as early as at school. As for students of KPTM, they have the awareness to mobile technologies in learning process and ready to implement m-learning. The benefits that can be obtained with the use of m-learning can be used as motivation in the success of this new teaching method. It is the key to success that need to be taken into account for the realization of teaching and learning methods M-Learning. In Malaysia, we should grab the opportunities available in the M-Learning technology to produce students who are competitive and able to master the generic skills that should be available in the students.

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