

## Perception On The Readiness Of Application Mobile Learning In Digital Technology Education

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**Abstract:** Digital technologies are electronic tools, systems, devices and resources that process, generate and store data. Digital education is type of learning that is facilitated by digital technology that makes effective use of technology. Mobile Learning or "M-Learning", offers modern ways to support learning process through mobile devices, such as handheld and tablet computers, MP3 players, smart phones and mobile phones. This paper introduces the application of Mobile Learning as an innovation for digital technologies education purposes among students. The main purpose of this paper is to investigate lecturers' and students' perceptions concerning the effectiveness of using mobile devices for teaching and learning practices in digital technologies education. This study was conducted on a sample of 351 of lectures and students. The respondents were from Politeknik Tuanku Syed Sirajuddin (PTSS). A set of questionnaire was used as an instrument. Descriptive and correlation analysis was performed. Based on the unified theory of acceptance and use of technology (UTAUT) model, the results show that performance expectancy, effort expectancy, social influence, and mobile learning conditions are positively correlated with behavioural intention. The performance expectancy, effort expectancy, and mobile learning conditions significantly predict lecturers' and students' intention towards M-Learning. In this research finding, it concludes that lecturers and students in the institution had positive perceptions towards mobile learning and are therefore ready to embrace it.

**Key words:** *mobile learning, digital technology, education, perception*

### 1. INTRODUCTION

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.

Mobile learning or "M-Learning" is the integration of several types of learning, typically with the help of mobile devices connected to the Internet: life-long, formal and informal, learning in class, library, at home or while travelling, laboratory and field learning. It allows adaptive teaching and personalized learning. In other words, with the use of mobile devices, learners can learn anywhere and at any time [1].

According to Walker [2], M-Learning focuses on the mobility of the learner, interacting with portable technologies and learning that reflects a focus on how society and its institutions can accommodate and support an increasingly mobile population. This is because mobile devices have features and functionality for supporting learners. For example, podcasts of lectures can be made available for downloading. Learners are to expect to engage with these learning resources whilst away from the traditional learning spaces [3].

Over the past ten years mobile learning has grown from a minor research interest to a set of significant projects in schools, workplaces, museums, cities and rural areas around the world. The M-Learning community is still fragmented, with different national perspectives, differences between academia and industry, and between the school, higher education and lifelong learning sectors [4].

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In Malaysia, a study conducted by Jacob and Isaac [5] 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. [6] 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.

### *1.1 Problem Statement*

Technology creates a change in learning method with the challenges ahead. A hundred years ago, children came to schools to sit in line and be controlled by teachers. Today the situation is still the same. For a decade, will it be undergo transformation like the music industry [7]. These issues should be thought of by academics. Education challenges are increasingly significant when new technologies arise in everyday life. If we did not take the opportunity to change learning methods according to the technology, imagine how much we lose.

### *1.2 Objective*

The objective of this study is to identify the performance expectancy, effort expectancy, social influence and mobile learning conditions that influence the behavioural intention and usage behaviour of individuals towards readiness and apply of mobile technology in the polytechnic.

### *1.3 Significant*

From this study, it can be seen whether the lecturer and student have been ready to prepare for the challenge of using M-Learning besides being able to know M-Learning suitable or otherwise against the students as well as the level of student acceptance of M-Learning can also be shown. The results of this study are also expected to be used as reference materials by the parties specified as a reference so that M-Learning can be applied to other education institutions. In addition, the results of this study can be used as a guide to other researchers if they wish to develop this study on future.

## **2. LITERATURE REVIEW**

According to El-Hussein and Cronje [8], the definition for M-Learning is contains three key components; mobility of technology, mobility of learners and mobility of learning processes. Mobility of technology

is refers to the mobile nature of installed hardware and software that enable wireless Internet connection. Mobility of learners means learners are no longer physically attached to one or several learning sites and they can be mobile and learn at the same time as long as the mobile devices are around. Finally, mobility of learning is the result of mobility of both the technology and learners.

A number of studies have been conducted across the world which reveals that M-Learning is potentially viable in addressing various challenges of teaching and learning. This section reviews some studies which utilize the unified theory of acceptance and use of technology (UTAUT) to explain factors that influence acceptance and use of M-Learning in different contexts.

Jairak, Praneetpolgrang and Mekhabunchakij [9] have assessed the intention of higher education students in Thailand towards accepting M-Learning, introducing attitude as a mediating variable. They established that effort expectancy, social influence, facilitating conditions and attitude significantly influence behavioural intention, while performance expectancy, effort expectancy and social influence significantly influence attitude. Their results further indicated that social influence is the greatest predictor of behavioural intention, while performance expectancy is the greatest predictor of attitude.

This study is supported by a modified version of the UTAUT [10] model. The theory holds that four constructs (independent variables) – performance expectancy, effort expectancy, social influence and facilitating conditions – influence the behavioural intention and usage behaviour of individuals towards acceptance and use of technology in organisations.

However, there have been many variant applications of the UTAUT model, based on the application context. As justified by Venkatesh et al. [11], facilitating conditions in the original UTAUT focused on the organisational environment, rather than the individual environment. Therefore, since this study deals with M-Learning, which is more about individualised rather than organisational learning, the facilitating conditions in this case represent more of the M-Learning conditions, which vary from individual to individual. Therefore, this study renames facilitation conditions in the UTAUT model as M-Learning conditions. Similarly, based on the nature of the research questions, the moderating variables have been dropped, as shown in Figure 1.

## **3. METHODOLOGY**

This study is involved two groups of respondents (students and lecturers). This paper reports their readiness towards mobile learning, possible factors that could affect the acceptance of mobile learning and the viability of mobile learning of teaching and learning in

digital technology education in Politeknik Tuanku Syed Sirajuddin. The study adopts a quantitative research approach. The quantitative approach was found to be most effective in gathering data from the respondent.

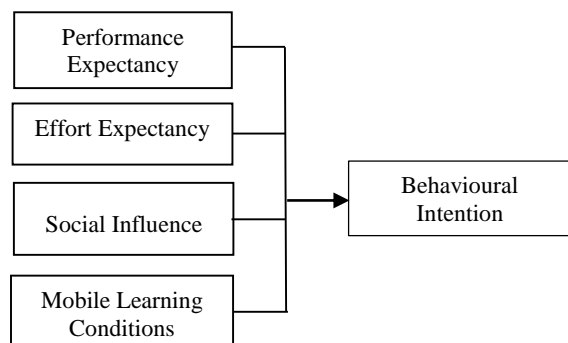


Figure 1: UTAUT model, modified from Venkatesh et al. [10]

Based on the size of the target population, a sample of 351 respondents was drawn, which is considered representative of the population, according to Krejcie and Morgan [12] sample size table. A mixed and multistage sampling strategy was adopted in sampling the study population [13]. A stratified proportionate sampling technique was used to estimate the number of students to include from each of the department in the polytechnic.

The questionnaire was made up of two sections, demographic information and perceptions of respondents of M-Learning. The second part (perceptions) consisted of 18 items measured on a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree.

The five constructs (variables) used were based on an existing and validated theory (UTAUT). The UTAUT aims to explain user intentions to use an information system and subsequent usage behavior. Reliability of the instrument, specifically internal consistency, was measured using Cronbach's alpha for the constructs, which is presented in Table 1. The approximate value of alpha cronbach ( $\alpha$ ) coefficient with 1.0 then the consistency value of internal reliability and values between 0.6 to 0.7 is acceptable and the high value of 0.8 can be considered well [14].

Table 1: Reliability of Scale Used Reliability Statistics

Construct	Cronbach's Alpha	N of Items
Performance Expectancy	.714	5
Effort Expectancy	.625	2
Social Influence	.728	2
Mobile Learning Conditions	.634	4
Behavioural Intention	.786	5

## 4. RESULT AND DISCUSSION

### 4.1 Data Analysis

Data was analysed using the Statistical Package for the Social Sciences (SPSS) version 21. The colleration analysis was used to ascertain the extent to which all factors (the constructs of independent variables, performance expectancy, effort expectancy, social influence and mobile learning conditions) contribute to readiness of participants towards M-Learning (behavioural intention).

Perceptions were measured by ascertaining the level of agreement or disagreement of respondents on the items that were used to measure each construct, namely performance expectancy, effort expectancy, social influence and mobile learning conditions.

Table 2: Sample of Respondents by Gender

Gender	F	%
Male	122	34.8
Female	229	65.2
Total	351	100.0

Table 3: Sample of Respondents by Age

Age	F	%
18 - 29	292	83.2
30 - 39	47	13.4
40 - 49	10	2.8
50 - 59	2	0.6
Total	351	100.0

Table 2 shows the percentage of respondent's gender. It indicates that percentage of male is 34.8 and female is 65.2. Meanwhile, Table 3 shows the percentage of respondent's age. It is shows that the percentage of range age between 18 – 29 is 83.2, 30 – 39 is 13.4, 40 – 49 is 2.8 and 50 – 59 is 0.6.

Table 4: Correlation Matrix of the Independent Variables and the Dependent Variables

	Correlations	PE	EE	SI	MLC	BI
PE	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	348				
EE	Pearson Correlation	0.396**	1			
	Sig. (2-tailed)	0.000				
	N	348	348			
SI	Pearson Correlation	0.313**	0.236**	1		
	Sig. (2-tailed)	0.000	0.000			
	N	346	346	349		
MLC	Pearson Correlation	0.366**	0.264**	0.493**	1	
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	346	346	349	349	
BI	Pearson Correlation	0.368**	0.404**	0.381**	0.553**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	346	346	349	349	349

#### 4.2 Readiness towards M-Learning

The process of ascertaining the extent to which the independent variables predicted the intention of respondents to use M-Learning, the relationship between each independent variable and intention to use M-Learning was first ascertained, the results of which are presented in Table 4.

From Table 4, it can be established that moderate positive relationships exist: between performance expectancy and students' intention to use M-Learning ( $r = 0.368$ ,  $n = 346$ ,  $p < 0.0001$ ); between effort expectancy and students' intention to use M-Learning ( $r = 0.404$ ,  $n = 346$ ,  $p < 0.0001$ ); and between social influence and behavioural intention ( $r = 0.381$ ,  $n = 349$ ,  $p < 0.0001$ ). It is interesting to note that the table indicates that a strong positive relationship exists between mobile learning conditions and intention of students towards mobile learning ( $r = 0.553$ ,  $n = 349$ ,  $p < 0.0001$ ).

The analysis is apparent that all four independent variables have positive relationships with intention. This implies that the level of readiness of respondents towards M-Learning increases moderately, the more they perceive that M-Learning is useful to them. Similarly, their level of readiness towards accepting M-Learning increase moderately the more they perceive that the technology is easy to use. The same situation plays out the more students perceive that their friends and significant others are in support of their use of M-Learning.

The results obtained align with the objectives of the study. The results, which ascertained the readiness of students towards mobile learning, it revealed that all four independent variables were positively correlated with behavioural intention, providing an indication of students' readiness towards accepting M-Learning. However, while performance expectancy, effort expectancy and social influence had moderate association with behavioural intention, the results indicate that mobile learning conditions had strong correlation with behavioural intention.

On the other hand, the level of readiness of students towards accepting M-Learning increases very strongly the more students perceive that mobile learning conditions are favourable for M-Learning. By implication, the more favourable the mobile learning conditions are, the stronger the readiness of students. This means that the level of readiness of students increases more with an increase in mobile learning conditions, as compared to corresponding increases in performance expectancy, effort expectancy and social influence.

#### CONCLUSION

Application of mobile learning in digital education is the most important of required technologies to provide main goals in distance education. It offers learning and data access opportunities to learner notwithstanding time and place. Many various technologies are developed for mobile environments in terms of redounding opportunities of data transfer, data protection and online communication. The fact that mobile technologies progress and it meets people's needs faster has increased the interests in mobile technologies and their usage. Moreover, by solving scanning problems faced in accessions to education environments and servers by mobile devices, online accessions opportunities are provided from all mobile technologies.

In conclusion, the development of mobile technologies and their ongoing progress have raised the interests of mobile learning and have contributed much to every field of education.

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