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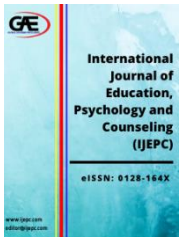

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STUDENT'S PERCEPTION ON MOBILE LEARNING: THE INFLUENCING FACTORS

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Abstract:

Mobile learning has become the most popular way of transporting information and the number of users has been rapidly increasing all over the world. Most importantly, students, these days can be defined as members of the digital native or network generation, born in the digital era while interacting with digital technology since childhood. Mobile devices have gradually become more popular around the world. Due to their popularity, the education sector has considered mobile learning (M-learning) technologies as pedagogical tools for users to be able to use their devices for self-learning anytime and anywhere. Therefore, this study examines the factors affecting students' perception of mobile learning. Several types of research show University professors are adopting mobile learning for discussion meetings in order to help students in academic learning and through effective connection and collaboration inside and outside the classroom. The theoretical foundations for this study are the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). A total of 200 respondents from a private university in Malaysia participated in this research. Samples were selected using convenience sampling and the respondents answered the questionnaire via Google form and paper and pencil method. A nominal scale and Five-point Likert scale was used to design the questions in the questionnaire. Data analysis methods used in this research were Descriptive Analysis, Reliability Analysis, and Multiple Regression Analysis. The data collected and also information in this research are highly beneficial and valuable to students, supervisors, academics, researchers, learning institutions, and the government as we are able to gauge and understand the factors influencing students' perception of mobile learning. However, there are some limitations as this research does not reflect the actual student population in tertiary education in Malaysia and it only focuses on four variables i.e. performance expectancy, effort expectancy,

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social influence, and quality of service. There are several possibilities for future researches whereby one can focus more on other influencing factors such as pervasive technology usage, tech-savvy future generations, convenience, and many more.

Keywords:

Mobile Learning, Performance, Perception

Introduction

Mobile technology has become an important part of our daily lives. With rapid growth of mobile technology, the advantages of mobile devices can be leveraged by developing the appropriate learning and educational methods through mobile devices. What more, with the recent pandemic worldwide, mobile learning has become an easier way to enable students to access their learning materials by using their mobile devices. Students must be able to keep up with the changing technologies. Using universal devices for mobile learning will be an effective method these days as the devices such as PDAs, tablets, smartphones are more attractive to students due to reasons like their performance expectancy, effort expectancy, social influence, quality of service and perceived enjoyment. The e-learning frameworks had extended its advantages to the mobile learning (Motiwalla, 2007) by providing students access to the information and learning materials (Nassuora, 2012), and the students can obtain assessments and feedback from their lecturers (Crawford, 2007). Uzunboylu & F.Ozdamli (2011); Hu, Lu, & Tzeng (2014) states that these mobile technologies also help to design new teaching methods that help students stay creative in the learning process.

Literature Review

Research found that through third generation of mobile communication (3G) technology, TAM was useful to comprehend factors affecting students' perception on mobile learning (Davis, 1989). According to Legris, Ingham, & Collerette (2003), TAM model describes the attitude of behavioural intentions toward use, external variables, internal beliefs and actual system use. The TAM model is determined by perceived ease of use and perceived usefulness. Perceived ease of use means that the use of a particular system is considered effortlessly. Perceived usefulness indicates that someone thinks that their work performance will improve when using a system (Davis, 1989).

UTAUT model explains factors affecting students' perception on mobile learning. Performance expectancy, effort expectancy, social influence and facilitating conditions are included in the UTAUT model that explains user's acceptance behaviour in the research. To comprehend the characteristics of user groups, the moderating variables are included such as gender, age, experience and voluntariness of use. The specific impact of students' perception on mobile learning can be reflected through this UTAUT model framework (Pedersen and Ling, 2003). Pedersen and Ling (2003) and Wang et al. (2009) states that facilitating conditions is a construct in UTAUT model and it has been overlooked from this study, and they have supported the omission in the studies. In this study, the model extended the two additional constructs related to mobile learning context that is quality of service and perceived enjoyment

Mobile learning has been explained in the literature as it is a moderately new and advancing concept. It means combination of mobile devices and wireless network technologies to improve learning outcomes that enabling students to obtain learning materials that is not limited by time

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and location (O'bannon & Thomas, 2014). Bidin and Ziden (2013); Ozdamli and Cavus (2011) states that cutting-edge technique with using of mobile devices for learning can help students' learning process more effectively and make it simpler for them to obtain their learning material is the meaning of the mobile learning. Chan (2006) saw using mobile devices is a new phrase of learning methods. The students can use the personal devices as a tool to obtain the information and learning contents by learning alone or in a group.

Performance expectancy is a person's belief that using mobile learning can help them improve their performance (Venkatesh et al., 2003; Al-Gahtani, Hubonna, and Wang, 2007). More specifically, when people think that using new technology will help them do their work more effectively and efficiently, they will be more willing to use it. According to Wang et al. (2009), students found that they will beneficial from the mobile learning since they are able to complete learning activities efficiently.

Venkatesh et al. (2003) states that effort expectancy is the degree of ease related to the use of mobile learning. Alsheikh & Bojei (2012) states that ease of use for this situation implies that people do not need too much effort or specialized information to run the technology they used. According to Ghalandari (2012), effort expectancy is also based on the relationships between the effort put at work, the results obtained from the effort, and the rewards gained from the effort. Davis (1993) assumes that a system that is considered simple to use can induce students' perception on mobile learning.

Social influence means that a person using mobile learning is persuaded by family members, close friends or even lecturers (Venkatesh et al., 2003). Students' perception on mobile learning will greatly be affected by social influence when students use mobile learning in their learning process. Social influence is a combination of three concepts that are social factor, image and subjective norm. Thompson et al. (1991) states that the social factor is the core structure of the MPCU. Image means that the extent to which an individual's image or position can be improved by using a technology (Moore & Benbasat, 1991). Subjective norm is the person's view of how others think about him or her (Fishbein & Ajzen, 1975).

Quality of service is about student's perception and contentment with the services provided such as reliability and responsiveness, content quality and security or privacy (Kuan, Vathanophas, & ock, 2003; Delon & McLean, 1992). Quality of service means that the extent to which the user perception and expectation of overall services quality from the information system (Kim et al., 2008).

Perceived enjoyment refers to an individual's feel of interesting and enjoyable while using mobile learning (Davis et al., 1992). According to Padilla-Melendez, Aguila-Obra and Garrido-Moreno (2013); Kang et al. (2015), studies have demonstrated that students' acceptance of mobile learning mostly come from hedonic motivation. Furthermore, Huang (2015) states that perceived enjoyment is regarded as motivation to use technology toward mobile learning.

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Methodology

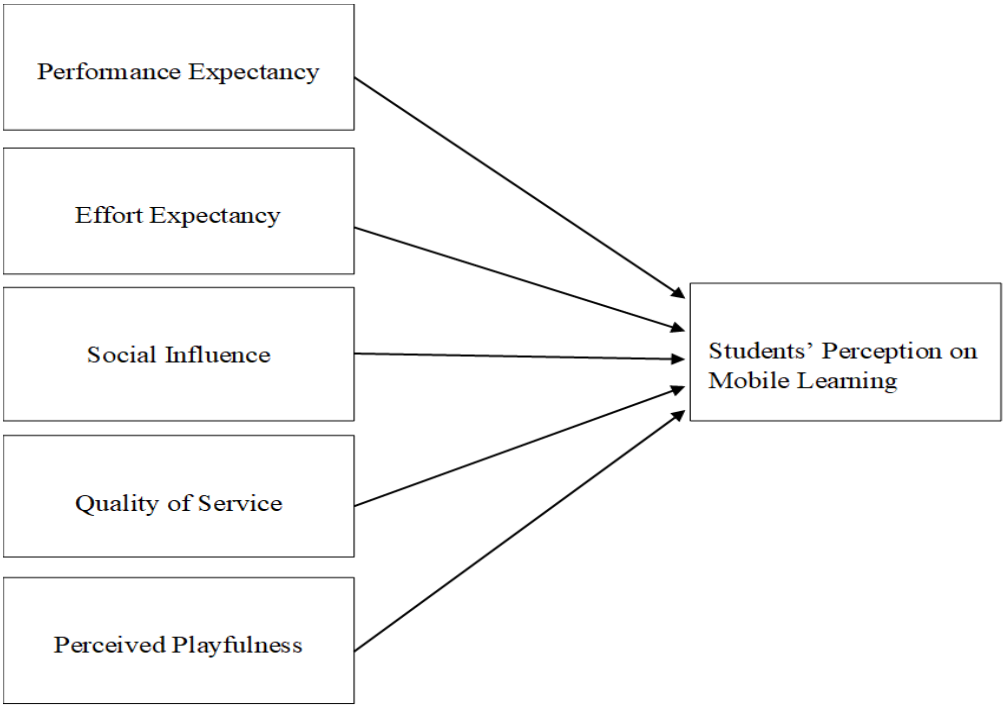

Figure 1: Research Framework (Developed for This Research)

Research framework is the structure that supports the research theories and it is the most significant aspects in the research process. The dependent and independent variables provided in Figure 1 shows the relationship between these two variables. Research framework has been set up based on the relationships between students' perception on mobile learning as dependent variable and performance expectancy, effort expectancy, social influence, quality of service and perceived enjoyment as independent variables. The independent variables are used as intermediary variables to measure factors affecting students' perception on mobile learning.

Population is a determinable total interest base based on research by researchers. The population used in this study are a group of students from a Private Higher Learning Institution. The total number of respondents is 200 students. In this research, non-probability sampling was used, whereby the researchers selected samples based on the subjective judgment. Convenience sampling was used in the research. Its speed, cost effectiveness and sample availability are the reasons why this sampling method was chosen.

All the data information is collected by questionnaire. Questionnaires was distributed through face to face and electronic form, whereby students will answer the questions in the questionnaire online and their answers will be collected online too.

To analyse the demographic data, the concepts captured under this study and their relationships, Statistical Package for the Social Sciences (SPSS) is used in this study. SPSS is able to process a lot of information and all the analyses involved in this study can be carried out. SPSS was used in this research since it is associated with many of the other software packages for data analysis. The data analysis method used is shown in below.

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Findings and Discussion

The findings are presented in tables below to provide a clear understanding. The hypotheses developed have also been tested and summarized as following: -

Table 1: Demographic Information

Variables		Frequency	Percentage
Gender	Male	85	42.5
	Female	115	57.5
Age	18-20	74	37.0
	21-23	112	56.0
	24-26	10	5.0
	27 and above	4	2.0
Education level	Diploma	82	41.0
	Degree	116	58.0
	Master	1	0.5
	PHD	1	0.5
Course	Business	104	52.0
	Information Technology	36	18.0
	Engineering	32	16.0
	Law	28	14.0
Frequency of Mobile usage	Almost never	0	0
	Infrequently	7	3.5
	Sometimes	33	16.5
	Almost always	82	41
Place of Mobile Usage	Home	52	26%
	School	10	5.0
	In transit	11	5.5
	Home & School	55	27.5
	Home School & in Transit	49	24.5
	Home & In transit	15	7.5
	School and in transit	8	4.0

Table 1 summarises the demographic information collected for this research, with a total of 200 respondents who are students from a Private Higher Learning Institution.

Table 2: Reliability Analysis

Variables	Number of Item	Cronbach's Alpha
Performance Expectancy (PE)	5	0.734
Effort Expectancy (EE)	5	0.707
Social Influence (SI)	5	0.731
Quality of Service (QoS)	5	0.704
Perceived Enjoyment (PCE)	5	0.729
Mobile Learning Intention	4	0.725

The Cronbach's Alpha for each variable is shown in Table 2. All the independent variables have same number of items which is 5 items. Dependent variable in this research has only 4 items. The result of Cronbach's Alpha showed all above 0.7 and means all the variables is acceptable in this study. The highest Cronbach's Alpha of independent variables is

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performance expectancy, which is 0.734, social influence is 0.731, perceived enjoyment is 0.729, effort expectancy is 0.707 and quality of service is 0.704. At the same time, the dependent variable of mobile learning intention showed value of Cronbach's Alpha is 0.725.

Table 3: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std.Error**	**Beta**	**t**	**Sig**
(Constant)	0.087	0.289		0.301	0.764
PE	0.308	0.071	0.286	4.344	0.000
EE	0.061	0.042	0.074	1.463	0.145
SI	0.041	0.070	0.039	0.590	0.556
QoS	0.091	0.067	0.088	1.348	0.179
PCE	0.471	0.079	0.417	5.951	0.000

Table 3 shows perceived enjoyment has the highest beta value in unstandardized coefficient of 0.471. This means perceived enjoyment is the strongest independent variable to influence students' perception on mobile learning. The lowest beta value in unstandardized coefficient is social influence which is 0.041. It also shows the result of coefficients analysed by SPSS. If the significant value (also known as p-value) does not exceed 0.05, the hypothesis is supported. According to the table above, 2 independent variables are significant among five independent variables. Performance expectancy (0.000) and perceived enjoyment (0.000) are significant in this research. While, effort expectancy (0.145), social influence (0.556) and quality of service (0.179) is insignificant in the research as it exceeds 0.05.

Table 4: Hypotheses Summary

Hypotheses	P-value	Findings
H1: There is a significant relationship between performance expectancy and students' perception on mobile learning	0.000	Supported
H2: There is a significant relationship between effort expectancy and students' perception on mobile learning	0.145	Not supported
H3: There is a significant relationship between social influence and students' perception on mobile learning	0.556	Not supported
H4: There is a significant relationship between quality of service and students' perception on mobile learning	0.179	Not supported
H5: There is a significant relationship between perceived enjoyment and students' perception on mobile learning	0.000	Supported

Table 4 shows the result of coefficients analysed by SPSS. If the significant value (also known as p-value) does not exceed 0.05, the hypothesis is supported. According to the table above, 2 independent variables are significant among five independent variables. Performance expectancy (0.000) and perceived enjoyment (0.000) are significant in this research. While,

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effort expectancy (0.145), social influence (0.556) and quality of service (0.179) is insignificant in the research as it exceeds 0.05.

Conclusion

This research was to investigate factors affecting students' perception on mobile learning. This research will be the future studies for mobile learning in Malaysia. The findings of the research could contribute to the development of mobile learning implementation in universities. This finding is useful to the administrators of university to introduce effective mobile learning for students.

There are some limitations that should be considered when conducting a research. Firstly, the sample size in this research was small with only 200 respondents. Therefore, the findings might not able to provide the perception on mobile learning across Malaysia's universities.

Secondly, the data cannot be collected smoothly in a short period of time. This is because most of the respondents are not willing or do not have time to fill up the questionnaire. This makes the data collection becomes difficult for researchers.

Further research is recommended to obtain a larger sample size from students which are from many universities in Malaysia. Larger sample size allows the researchers to draw a stronger conclusion about the relationship between the variables. The questionnaires should be distributed to more than one location to increase the accuracy of the data obtained.

In conclusion, students' perception on mobile learning are clearly shown in this research. Therefore, mobile learning developers can attract more users by developing better user-accepted mobile learning systems and promoting their benefits to the students.

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