Applying Utaut to Evaluate the Acceptance of Mobile Learning in Higher Education in Iraq

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Abstract *Mobile learning (M-learning) has evolved in the recent years with the development of Smartphones. Studies in the field are still few. The purpose of this study to identify the factors that influence the acceptance of M-learning by students and lecturers in higher education in Iraq. Building on the literature, the study incorporated the variables of Unified theory of acceptance and use of technology (UTAUT) namely performance expectancy, effort expectancy, social influence, and facilitating conditions along with perceived playfulness and self-management of learning as independent variables that are proposed to influence the behavioral intention to use M-learning. The study has developed and tested empirically a model of M-learning based on (UTAUT). In addition, the study provides the decision makers with practical recommendation to enhance the acceptance of M-learning.*

Keywords: Mobile Learning , UTAUT, Acceptance, Higher Education, Iraq.

1. Introduction

Mobile learning (M-learning) is an advance stage in the improvement of Electronic learning (E-learning) and distance learning. It refers to any kind of learning that happens through wireless mobile devices such as Personal Digital Assistants (PDAs) and tablet personal computers (PCs) where these devices have the ability to carry along with the learners to permit learning anytime and anywhere[1],[2] With the increase of Smartphone (27% of mobiles are Smartphone in 2012) worldwide, M-learning is expected to dominate the learning environment [3]. The use of mobile learning has grown dramatically.

Mobile device internet browsing has increased to 300 percent from 2007 to 2011 and it projects a surpassing quantity of browsing in comparison to desktop usage for the year 2015 [4] .In 2015, out of the world's 4.5 billion mobile phones, 1.75 billion are Smartphones. With 83% of the internet usage through the mobile (Emarketer, 2015 [http://dazeinfo.com/2014/01/23/smartphone-users-growth-mobile-internet-2014-2017/]). This means that there are more than a billion devices that on average are constantly handling Geographical Positioning System (GPS) location, text messages, call logs and even banking information (Emarketer, 2015). Therefore, these phones also can be used as tools to access online courses. The spread of mobile devices and wireless networks within the university premises enables higher education to be a suitable place to integrate student-centered M- learning [5]. Mobile devices have become more powerful, successful, and simple to utilize [6]. These devices can expand the profits of e-learning systems by offering college student, chances to get to course materials and utilize information communication technology (ICT) in a collaborative environment [7].
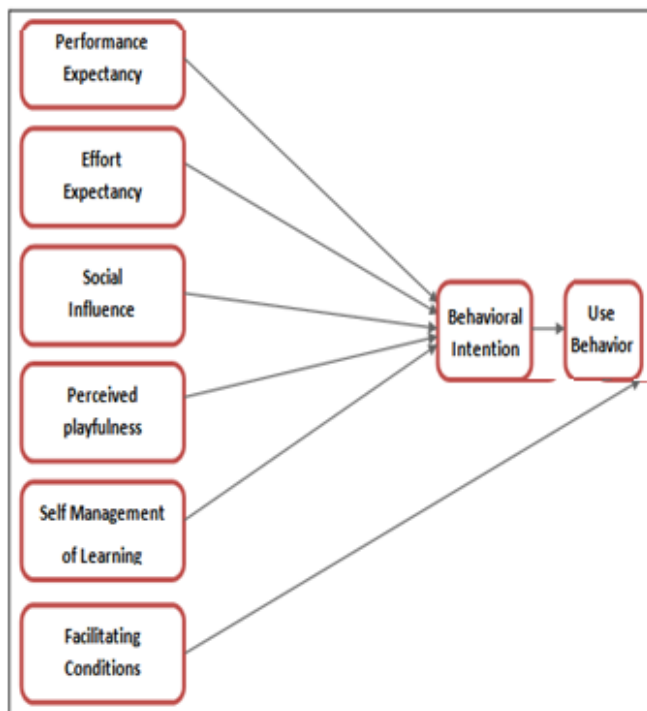
Despite the development in ICT, M-learning still in the first stage, and its theoretical underpinnings have not yet matured [8]. In particular, the issues regarding how to promote learners' acceptance of M-learning are largely unsolved. Research in this regard is very scare [9],[10].There are a number of issues surrounding the acceptance of mobile learning among university students. Many studies in this area have focused upon the acceptance of technology and have made use of theory of reasoned action (TRA) and Technology Acceptance Model (TAM) where the major constructs are perceived usefulness and ease of use etc. However, research related to new models such as Unified Theory of Acceptance and Use of Technology (UTAUT) is still limited [11]. A review of the literature discover that M-learning in higher education is still in the first stages of development, and the ideas and educational matters surrounding M-learning still require many research [12],[10] .In addition, there are also a few resources available on how to deploy and support M-learning in university education [13]. The availability of wireless mobile devices and connectivity to the internet do not in themselves achieve sustainable M-learning deployment. Studies related to acceptance of mobile technology in Iraq is still in the early days. University of Babylon is still in the early stage of developing and utilizing information system. The factors that influence the acceptance of new technology such as M-learning is unknown. Therefore, there is a need to investigate the factors that affect the acceptance of M-learning in the higher education context. By identifying the critical factors that ensure the successful deployment of M-learning in the University of Babylon and the Iraqi universities

2. Conceptual Research Model

Based on the many litteture review, the use of UTAUT was supported by other researchers who employed the model to explain the variation in many fields such as M-learning, MMS, and M-banking. In addition to UTAUT, the literature revealed that there are many other factors that could explan the variation in the acceptance of M-learning. These factors that we used here were: perceived playfulness and self-management of learning. Thus, the independent variables of this study includes : 1) Performance Expectancy, 2) Effort Expectancy, 3) Social Influence, 4) Perceived playfulness, 5) Self-Management of Learning, 6) Facilitating Conditions as an independent variable. In accordance with the UTUAT model, this study employs behavioral intention as a dependent variable and independent variable that predicted to influence the use behavior. Use behavior is the ultimate

dependent variable of this study. Figure 1.1 shows the proposed model of this study.

Figure 1: Conceptual Research Model

Based on the literature review and the proposed research model, the following are hypothesized:

Hypothesis 1: Performance expectancy will have a positive effect on behavioral intention to use M-learning.

Hypothesis 2: Effort expectancy will have a positive effect on behavioral intention to use M-learning

Hypothesis 3: Social influence has a positive effect on behavioural intention to use m-learning.

Hypothesis 4: Perceived playfulness has a positive effect on behavioural intention to use M-learning

Hypothesis 5: Self-management of learning has a positive effect on behavioural intention to use M-learning.

Hypothesis 6: facilitating conditions has a positive effect on use Behavior

Hypothesis 7: Behavioral intention influences positively the use behavior.

3. Methodology

Previous studies have adopted a quantitative approach to examine the factors that influence the adoption of M-learning. This study is no exception. The study follows the approach of others such as Wang et al. (2009) who used a quantitative approach to find the factors that influence the adoption of M-learning. According to the university, the number of current students and lecturers in the university is 17203 in 2015 (Univeristy of Babylon, 2015[University of Babylon:

http://en.admin.uobabylon.edu.iq/chancellor/speach.aspx]).
the sample of this study is 370 respondents. A total of 159 respondents have participated voluntarily in this study and this number is accepted according to Sekaran's (2003) Table.

4. Findings and Discussion

4.1 Respondent Profile

Demographic information of the respondents such as their age, gender, and level of study are given in Table1.

Table 1: Demographic Information of Respondents

	Label	Frequency	Percent
Age	less than 19 years	29	18.2
	20-24 years	90	56.6
	25-29 years	17	10.7
	More than 30 Years	23	14.5
	Total	159	100.0
Gender	Male	87	54.7
	Female	72	45.3
	Total	159	100.0
Level of study	Undergraduate	114	71.7
	Postgraduate	18	11.3
	Lecturer	27	17
	Total	159	100.0

5. Hypotheses Testing

The hypotheses of this paper are tested by using regression analysis. Table 2 presents the coefficient. Strongest indicators of the behavioral intention is performance expectancy (B= 0.518, p-value =0.000) followed by Self-management learning (B= 0.464, p-value = 0.003), effort expectancy (B= 0.396, P-value= 0.001), perceived playfulness (B= 0.338, p-value = 0.009), and social influence (B= 0.261, P-value= 0.005). In term of the use behavior, the strongest indicators is behavioral intention (B= 0.623, P-value= 0.001) followed by facilitating conditions (B= 0.214, P-value= 0.003).

Table 2: Coefficient

	Model	Unstandardized Coefficients		t	Sig.
		B	S.E		
BI	(Constant)	2.19	1.04	2.10	.037
	Performance Expectancy	.51	.11	.15	.000
	Effort Expectancy	.39	.19	.48	.001
	Social Influence	.26	.22	1.14	.005
	Perceived Playfulness	.33	.23	.16	.009
	Self Management Learning	.46	.27	.23	.003
UB	(Constant)	1.300	.815	1.595	.113
	Behavioral Intention	.623	.062	10.061	.000
	Facilitating Condition	.214	.192	.595	.003

6. Conclusion, Recommendation, and Direction for Future Work

Based on the finding of descriptive analysis of the factors that influence the behavioral intention of students and lectures to accept M-learning in Iraq, the following recommendation could be suggested to improve the adoption and the usability of M-learning system by students using mobile device. These suggestions and recommendations are as follows:

Performance Expectancy: Based on the findings of mean score value of the items of performance expectancy, it is recommended for the university to customize its online

courses to fit the mobile application and screen size. Students are interested in the productivity of mobile application. Customization of the courses to fit mobile application can reduce the size and consumption of the internet, which lead to faster browsing, and productive utilization of M-learning.

Effort Expectancy: Based on the descriptive analysis, the student find difficulty in utilizing the M-learning application, therefore it is recommended that the university hold a course or workshop to explain the use of M-learning and to provide the students with some tools that can speed the interaction with M-learning.

Social Influence: the university is recomm- ended to encourage the use of M-learning to access courses from everywhere at anytime. Better utilization benefits both: the students and the university. The students can increase their academic achievement and the university can enhance its reputation as a source of knowledge and hardworking students.

Perceived Playfulness: The University can reduce the negative influence of using mobile learning by keeping the students engaged in productive activities such as arranging academic competition on online basis and students can participate by using their mobile. Another way is to design puzzle that need creative thinking to encourage student to think academically and scientifically.

Self-learning Management: It is recommended that courses send auto notification to instruct students to do their assignment on time and provide them with direction and interactive portal to entertain their request. It is recommended that the portal is managed by the university where student can ask and get feedback from their lecturers and other peers.

Facilitating Condition: the university is recommended to provide a hotlink or a technician to provide help for those who need to use the mobile learning and have difficulties. The technician can also suggest for the student the best way to utilize the M-learning and provide them with new and useful applications that can ease their use and lead to productive use of the technology.

To a future work it is recommended that studies conducted using qualitative approach. Using an interview with experts or focus group of expert might lead to a great discovery of the factors that influence the acceptance of M-learning. Qualitative studies are needed because the m-learning field is still new and emerging field and a qualitative study can uncover the dimension of this phenomenon.

This study has employed the model of UTAUT along with perceived playfulness and self-management of learning. These factors were able to explain 39% of the variation in the use behavior. It is recommended for future work to include more variable such as the incentive from the university, the policy of the university, cultural factors, previous experience, and IT knowledge. It is expected by including more variable; the R square will increase and will be able to explain high percentage of the variation in the use

behavior. Finally, the study aimed at identifying the factors that influence the acceptance of M-learning in higher education in Iraq. The purpose of it is to direct and help. The decision makers at higher education in Iraq to customized the application of M-learning and create interactive portal to entertain the learners' requests. Further, they were advised to encourage learners to use the M-learning methods.

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