Factors that affect University College Students' acceptance and use of Mobile Learning (ML)

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The current study aimed to know the factors that affect university college student's acceptance and use of Mobile learning (ML), and to discover the relationships between these factors. The researcher used the relational descriptive approach through the questionnaire Instrument. The questionnaire consisted of (25) items distributed on (7) factors (Others Influence, ML Effort, ML Benefits, Usage Motives, Student capabilities, Usage Expectations and Usage rate). The study sample consisted of (2077) students from university colleges in Jordan, and they were chosen by the available sample method. Modelling the structural equation was used to extract the correct data using the statistical analysis program SPSS. The results of the study showed the validity of the study hypotheses and that the specific factors (ML Benefits, ML Effort, others Influence, Usage Motives, Student capabilities, Usage Expectations and Usage rate) affect the intention and use of the University's college students for Mobile learning. The use of Mobile learning in Jordanian university colleges is very low. Therefore, it is important to research the factors that can contribute to students' acquisition of information. This research contributes to determining the factors that affect university college student's acceptance and use of Mobile learning in Jordan. According to the results of the study, the researcher recommends the university administration to take attention to the factors affecting students 'intention to use educational funds to achieve academic program outcomes.

Keywords: university's college students, mobile learning (ML), factors affecting, intention, learning

INTRODUCTION

Communications and information technology applications have made huge changes in educational fields. This made it easier for educational institutions to apply modern technological techniques and methods in teaching and learning processes (Akman& Turhan, 2017; Ekanayake & Wishart, 2014; Demir & Akpınar , 2016; Alharbi & Drew, 2014; Mahasneh,2020d; Mahasneh,2020e). At the end of the second decade of the 21st century, many mobile phone services were used for learning. Mobile learning (ML) is a technology that uses multiple applications in the learning process anywhere and time

(Fabian & Topping, 2019; Güvendir & Gezgin, 2015; Foulger, Burke, Williams, Waker, Hansen & Slykhuis, 2013). Mahasneh (2020b) and Mahasneh (2020c) defined mobile learning is the use of personal mobile devices to learn online through various applications.

Mobile learning (ML) is characterized by giving it special attention to each of the university students independently, encouraging education based on exploration and curiosity, building the student's confidence in himself and his capabilities, increasing the motivation of students towards education due to its modernity, and provides opportunities for faculty member to circulate the academic content in an easy manner (Joo, Kim & Kim, 2016; McGill, Klobas, & Renzi, 2014; Martin & Ertzberger, 2013; Mahasneh, 2020a; Tawarah & Mahasneh, 2020).

The purpose of this research is to know the factors that affect university college student's acceptance and use of Mobile learning (ML), and to discover the relationships between these factors. To achieve the purpose of the study, the current research model was proposed based on the theories of accepting modern technology and (6) hypotheses were formulated. The research model was tested experimentally using data collected from (2077) students enrolled in university colleges in Jordan.

Theoretical Framework

After the researcher reviewed the theoretical literature and previous studies, he found several models to examine the users 'position on modern technology and the latest model Unified Theories of Acceptance and Use of Technology UTAUT and UTAUT2 (Venkatesh, Morris, Davis, & Davis, 2003; Venkatesh, Thong, & Xu, 2012). Therefore, the study attempted to identify the most important factors that affect the intention and use of Mobile learning (ML) through the proposed model Based on previous models as shown in Figure 1.

Research model
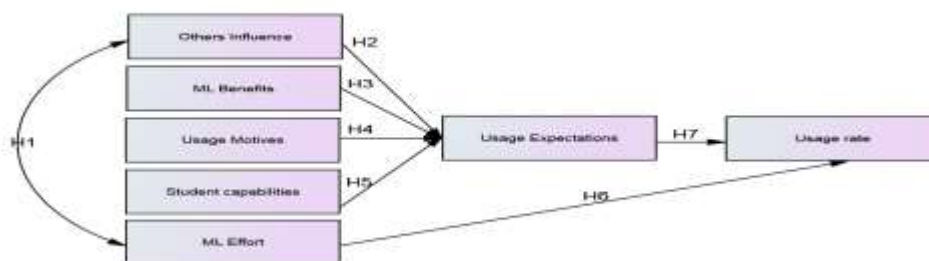Figure 1 shows the research model.

Figure 1
Research model

Model Factors

Others Influence (OI)

OI is defined as the student's degree of evaluation of the influence of others on his use of the Mobile learning (ML) in the learning process. A study by Mahasneh (2020) confirms that the opinions of others are important in guiding people to accept technology and the effort made by the student. The current study assumes that students 'acceptance and effort made to use Mobile learning (ML) is influenced by the opinions of their faculty and colleagues. The researcher assumes the following hypothesis:

H1. OI positively and significantly influences students' MLE.

H2. OI positively and significantly affects expectations and usage of Mobile Learning (ML).

Mobile Learning Benefits (MLB)

MLB is defined Benefits that the student will achieve using educational urinals. A study of Nguyen, Barton, & Nguyen (2015) confirmed that the more technology benefits the user, the more likely they are to use it. The researcher assumes the following hypothesis:

H3. MLB positively and significantly affects expectations and usage of Mobile Learning (ML).

Usage Motives (UM)

UM is defined the student has personal motivations to use Mobile learning (ML) in the educational process. A Study of Epp & Phirangee (2019) confirms that the more motivated the student is to use technology, the more they will use it. The researcher assumes the following hypothesis:

H4. UM positively and significantly affects expectations and usage of Mobile Learning (ML).

Student Capabilities (SC)

SC is defined as providing the student with the full resources and facilities to use Mobile learning (ML) in the educational process. A Study of McGill, Klobas, & Renzi (2014) confirm that the more resources and facilities are available to the student, the more they will use the technology. The researcher assumes the following hypothesis:

H5.SC positively and significantly affects expectations and usage of Mobile Learning (ML).

Mobile Learning Effort (MLF)

MLE is defined as the student's degree expected effort that the student will exert during the use of Mobile learning (ML). A Study of Venkatesh, Thong, and Xu (2012) confirmed that the opinions of others influenced students' ease in using Mobile learning (ML). The researcher assumes the following hypothesis:

H6. MLEs positively and significantly influences students' Usage rate of mobile learning (ML).

Usage Expectations (UE)

UE is defined as the intention of the student to use Mobile learning (ML) in the educational process and attain gains in job performance, A Study of Martin & Ertz Berger (2013) confirms that individuals' use of technology is positively affected by their intention to use it. The researcher assumes the following hypothesis:

H7. Students UE to use mobile learning positively and significantly influences Usage rate of Mobile Learning (ML).

Usage Rate (UR)

UR is defined as the average student's use of Mobile learning (ML) in the educational process weekly.

Research Hypotheses

The research model aims to test the following hypotheses:

1.H1. OI positively and significantly influences students' MLE.

2.H2. OI positively and significantly affects expectations and usage of Mobile Learning (ML).

3.H3. MLB positively and significantly affects expectations and usage of Mobile Learning (ML).

4.H4. UM positively and significantly affects expectations and usage of Mobile Learning (ML).

5.H5. SC positively and significantly affects expectations and usage of Mobile Learning (ML).

6.H6. MLEs positively and significantly influences students' Usage rate of mobile learning (ML).

7.H7. Students UE to use mobile learning positively and significantly influences Usage rate of Mobile Learning (ML).

Previous Studies

The following are the most important studies that are related to the subject of study:

Mahasneh (2020) conducted a study aimed at knowing the effect of teaching by using educational Mobile on student achievement. The results of the study showed that there are differences between the experimental and control group and in favour of the experimental group.

Abdel-Fattah (2019) conducted a study aimed at knowing the Degree of Using Smartphone's by Jordanian Private Universities Students in Teaching on Quality Criteria. The results of the study showed that the degree to which Jordanian university students use Smartphone's in education was high. The results of the study showed there are statistically significant differences at the level of significance ($\alpha=0.05$) Jordan's

private university students use their Smartphone's for education due to the educational qualification variable (Bachelor, Master). The differences were in favour of the Master students.

Samsudeen (2019) conducted a study aimed at knowing University students' intention to use e-learning systems. The results showed that there is a set of instructions that affect the intention of students to use e-learning systems in Sri Lanka.

Saroia & Gao (2019) conducted a study aimed at Investigating university students' intention to use mobile learning management systems in Sweden. The results showed the effect of seven hypotheses suggested by the study.

Al-Azam (2017) conducted a study aimed at knowing the use of smart phones in education. The results showed that the degree of use of educational technology students in universities The Jordanians for Smartphone's in education were average, and also showed no significant differences Statistical significance at the level of significance (α=0.05) in the degree of use of Smartphone's in the process Educational from the viewpoint of students of educational technology in private Jordanian universities.

The current study is considered the first study at the Jordanian level that examines the factors that affect university college student's acceptance and use of Mobile learning (ML) "A Study of university colleges in Jordan". One of the main reasons for conducting this study is to know the factors affecting students 'intention to use Mobile learning to activate their use in the educational process. Previous studies only focused on the degree of use of Mobile learning (ML) and its effect on achievement.

METHOD

The researcher used the relational descriptive methodology through the questionnaire instrument (Appendix), to test the relationships between the variables in the model.

Participants and Procedure

The study population consisted of all students at university colleges (diploma and bachelor) at Al-Balqa Applied University in Jordan, they numbered approximately (45,000) students. The researcher selected an available sample consisting of (2077) students. The questionnaire instrument was distributed to the study sample after confirming its psychometric properties and appropriate statistical analyses were found to test the hypotheses.

Respondents' Profile

Table 1 shows the Demographic characteristics of the respondents.

Table1
Demographic characteristics of the respondents

n	Variable		Frequency	(%)
1.	Gender	male	942	54.6
		female	1131	45.4
2.	Academic level	1years	564	27.2
		2years	564	27.2
		3years	567	27.4
		4 years	378	18.2
3.	Grade point average	Excellent	375	18.1
		Very good	753	36.3
		good	567	27.4
		fair	378	18.2

* Source of data as it came from the respondents

According to Table 1, the number of individuals for the study sample was 2,077. It was composed of 942 (54.6%) males and 1,131 (45.4%) females. The table also shows the number of respondents according to the Academic level and Grade point average. The percentage of the respondents that were 1st years (27.2%), 2nd years (27.2), 3rd years (27.4%) and 4th years (18.2%). The percentage of the respondents with excellent (18.1%), Very good (36.3%), Good (27.4%) and Fair Average Grade Points (18. 2%). The demographic statistics indicate that the study findings were drawn from a multifaceted population sample. Meaning that, these findings can be generalised to the respective categories of persons in this population sample. The variety in the population's categories of data sources also enhances the validity of the study findings.

Instrument

The study Instrument consisted of (25) items distributed on (7) factors OI, MLE, MLB, UM, SC, UE, and UR. The three factors, UM, SC and UE were measured using four items. MLB used five items while MLE and OI used two items. The factors OI, MLE, MLB, UM, SC, UE and UR used a seven-point Likert scale from strongly disagree (1) to strongly agree (7). The seven-item UR factors were measured as UR1 ranging from not at all (1) to more than seven (7) time a week, UR2 scaled 1 for below 15 minutes to 7 for above 3 hours.

Data Analysis

The researcher used IBM's SPSS and AMOS to test the study hypotheses and evaluate the research model.

Structural Equation Modeling

Use the confirmatory analytical factor to evaluate the indicators of quality of fit and validity of construction. Table 2 shows the most important indicators for evaluating the fit of the model (Hair, Black, Babin and Anderson ,2010).

Table2
Model fit

Measure	Estimate (model)	Threshold	Interpretation
CMIN/DF	2.261	Between 1 and 3	Excellent
CFI	0.985	>0.95	Excellent
SRMR	0.032	<0.08	Excellent
RMSEA	0.351	<0.06	Excellent
PClose	0.863	>0.05	Excellent

According to Table 2, the model is reliable and falls within the approved scientific indicators.

Validity and Reliability of the Model

Table3
Validity and reliability of the model

Items	MLB	MLE	OI	UM	CS	UE	UR
MLB1	0.81						
MLB2	0.78						
MLB3	0.79						
MLB4	0.76						
MLB5	0.82						
MLE1		0.82					
MLE2		0.80					
MLE3		0.81					
OI1			0.85				
OI2			0.89				
OI3			0.90				
UM1				0.90			
UM2				0.91			
UM3				0.89			
UM4				0.87			
SC1					0.71		
SC2					0.75		
SC3					0.73		
SC4					0.82		
UE1						0.84	
UE2						0.85	
UE3						0.82	
UE4						0.80	
UR1							0.92
UR2							0.90

According to Table 3, the model has a higher validity and reliability rate of greater than 0.5 As confirmed by researchers (Hair, Black, Babin & Anderson, 2010). The Correlation coefficients between the items in Table 3 are high.

FINDINGS

To verify the study hypotheses, Structural Equation Modelling (SEM) was used, Figure 2 show the path Model.
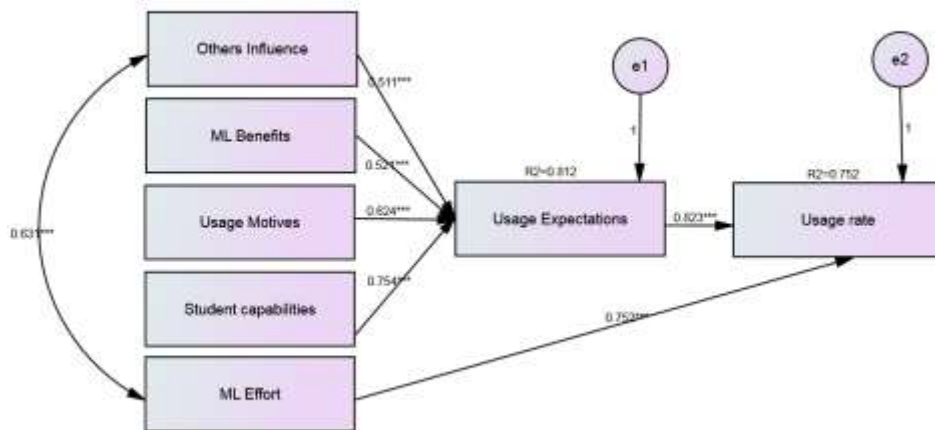

Figure 2
Results of the path model

According to Figure 2, all the Hypotheses made by the researcher were strongly positive. Table 4 illustrates Standardized regression weights for the proposed model.

Table4
Standardized regression weights for the proposed model

Hypotheses	Relationship	Estimate	t-values	p-values	Results
H1	OI ←MLE	0.631	6.651	***	Supported
H2	OI ←UE	0.511	7.321	***	Supported
H3	MLB←UE	0.524	9.625	***	Supported
H4	UM ←UE	0.624	10.254	***	Supported
H5	SC ←UE	0.754	8.325	***	Supported
H6	MLEs←UR	0.752	7.652	***	Supported
H7	UE ←UR	0.823	8.413	***	Supported

According to table 4, the researcher used path estimate, t-values, and p-values to test the proposed hypotheses. Since all hypotheses are statistically significant. The relationships between ML Benefits, ML Effort, Others Influence, Usage Motives, Student Capabilities, Usage Expectations and Usage rate to use Mobile learning (ML) were

found to be statistically significant. Hence, H1-H7 were found to be supported in this study. The results of the study showed that the following factors (Others Influence, ML Effort, ML Benefits, Usage Motives, Student capabilities) affect the intention and use of the student for Mobile learning (ML) in the educational process.

DISCUSSION

The current study aimed to know the factors that affect the intention and use of university college students for Mobile learning (ML), and to discover the relationships between these factors. The framework for this study was developed based on theoretical literature. The model consisted of (7) factors, as shown in Figure 2. All factors affected the intention and use of Mobile learning (ML) in the educational process. According to this study, SC was the most influencing determinant of UE to use Mobile learning (ML). The results of the study indicate that providing the student with the capabilities and facilities increases his use of the Mobile learning (ML) in the educational process. The results of this study are consistent with a study (Venkatesh, Thong, and Xu, 2012).

OI findings indicate that others have an impact on a student's efforts to use Mobile learning (ML). Therefore, faculty members must persuade their students to use Mobile learning (ML) in the educational process. In addition, Students should be encouraged to motivate their colleagues to use Mobile learning (ML). The results of this study are consistent with the study findings of Venkatesh, Morris, Davis and Davis (2003).

The next determinant that influenced UE to use Mobile learning (ML) was UM, meaning that the more motivated the student is, the greater the motivation to use Mobile learning (ML). Therefore, lecturers and instructors should emphasis using Mobile learning (ML) in the educational process and creating a motivation for students to use it. This finding agrees with previous findings of Mobile learning (ML) studies (Ekanayake & Wishart, 2014; Ekanayake & Wishart, 2014).

MLB is another construct that influenced students in their UE to use Mobile learning (ML). This finding implies that when students use Mobile Learning (ML), the quality of their educational life will improve in terms of saving time, increasing achievement, facilitating learning, etc. (Samsudeen, 2019).

The findings also reveal that MLEs, and UE significantly influence students' use behaviour of Mobile learning (ML). This finding is consistent with past studies (Ekanayake, & Wishart, 2014). Hence, administration of university colleges can take various steps.

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Appendix

N	parameter	Scale (1-7)
		1,2,3,4,5,6,7 Strongly Disagree =1….Strongly agree =7

ML Benefits

1. Mobile learning (ML) allows me to obtain information related to the courses and understanding it.
2. Mobile learning (ML) allows me to participate in activities at any time.
3. Mobile learning (ML) will contribute to increasing my achievement.
4. Mobile learning (ML) makes me the focus of the educational process
5. Mobile learning (ML) increases my motivation to learn.

ML Effort

6. I do my best to use Mobile learning (ML) to learn the courses.
7. Using Mobile learning (ML) is easy for me.
8. I expect that the experience will facilitate the use of Mobile learning (ML) in learning the courses.

others Influence

9. Faculty members direct the use of Mobile learning (ML) for learning.
10. My colleagues encourage the use of Mobile learning (ML) for learning.
11. My family provides me with all facilities to use the Mobile learning (ML) for learning.

Usage Motives

12. Keeping up with recent developments in learning.
13. Using Mobile learning (ML) for learning is fun.
14. Mobile learning (ML) can attend lectures at any time and place.
15. Facilitate the learning of courses.

Student capabilities

16. I have sufficient ability to use Mobile learning (ML) to learn courses.
17. I have sufficient capabilities to use Mobile learning (ML) to learn courses.
18. I have the ability to keep up with the versions of the Mobile learning (ML).
19. I can ask anyone to help them use Mobile learning (ML) to learn the courses.

Usage Expectations

20. I will use Mobile learning (ML) in attending concurrent and asynchronous lectures, writing research, communicating with colleagues and faculty, solving assignments and projects, using documented formulas via YouTube).
21. I expect to be relying on Mobile learning (ML) to learn courses in the coming semesters
22. I intend to use Mobile learning (ML) to learn courses in the upcoming seasons
23. I expect that the use of Mobile learning (ML) to learn courses will be common for every student

Usage rate

24. How many times do you use Mobile learning (ML) for the purposes of courses during a week?
25. How long do you use Mobile learning (ML) for the purposes of courses?