

# Assessing Mobile Learning Readiness in Kampala University, Uganda

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## ABSTRACT

The purpose of this study is to assess the students' level of readiness, perceptions and barriers to the implementation of mobile learning as a part of ubiquitous learning in Kampala University, Uganda. In addition, the study also examined the students' attitude towards mobile learning. The benefits of mobile learning and challenges of implementing mobile learning were determined. A questionnaire as a research instrument was developed to collect data from the respondents. The findings of the study suggest that the university students have positive attitude towards mobile learning and all students own mobile phones. Flexibility characteristic of mobile learning also attracted the attention of respondents. Finally, students listed some barriers towards implementation of mobile learning in the university.

## General Terms

Mobile Learning

## Keywords

Mobile learning, Mobile Devices, Readiness, Ubiquitous Learning, Students' Perception, New Educational Paradigm.

## 1. INTRODUCTION

In the last few decades the rapid technology advancements and high rate of cell phone penetration has broadened the horizon of distance learning. Course material is being delivered to students using a variety of media in an effort to serve the educational demands of higher education.

On the other hand, there is a great demand for higher education in Sub Sahara Africa, whereby universities cannot accommodate all the eligible students due to infrastructural constraints.

To tackle higher education challenges effectively, the integration of ICT has the potential to improve the quality of education as well as enable the access to learning opportunities [1]. One possible solution to address the issue is the introduction of the concept of mobile learning (m-learning). M-learning is considered as the latest type of learning introduced and is one of the most emerging fields. Research shows that mobile phones learning has been widely adopted in various parts of the world [2]. The mobile devices provide users with exciting features such as radio, camera, video camera, computer, which are incorporated with mobile phone and they work as a catalyst for the idea to use of these ubiquitous devices for academic purposes[3].

Mobile learning, a novel form of learning is the convergence between e-learning and mobile devices that uses mobile devices such as mobile phones to enable students to access learning content anywhere, anytime using wireless Internet connections [4]. In other words, mobile learning facilitates learners with an exciting and unique opportunity of accessing material instantaneously irrespective of their location.

M-learning kind ubiquitous learning has the potential to "reach remote areas where there are no educational facilities"

[5]. Mobile learning enables students to access their course contents, assignments, tests and examination papers using the same device they are using for other purposes in their daily lives.

However, before adopting the mobile learning strategy in the universities, it is imperative to assess the readiness, attitude of stakeholders, students in particular, and identify possible challenges from their point of view that may occur at the time of implementation of new educational paradigm [6].

Although there have been several studies that investigated the concept of mobile learning in higher education, ( e.g., [7], [8]). But there has been no notable research efforts to assess mobile learning readiness from the perspective of students in Ugandan universities. Therefore, this study assessed the readiness of mobile learning in Kampala University, Uganda, aimed to fill the research gap.

Mobile Learning: Mobile learning is considered as a subset of e-learning. Due to the diversity of research made in the area there is no one agreed upon definition of the term mobile learning. Different researchers define the term m-learning in various different ways. Traxler [9] argues that mobile learning is a type of learning activity that happens when the student is not in the lecture room and is using one of the mobile communication devices. Other research [10] states, m-learning is the utilization of ubiquitous handheld devices along with mobile phones and wireless networks to facilitate and support teaching and learning. However, mobile learning in higher education land scrap can be defined as the learning environment that is based on mobility of technology, learners, and learning experience.

## 2. LITERATURE REVIEW

Literature shows that several researches have been made by researchers regarding assessment of mobile learning in higher education in different countries. A few research efforts are presented in this section.

In Kuwait, the study [11] results indicated that students and lecturers both had positive perceptions of m-learning, and they agreed that m-learning can enhance the teaching and the learning process. However, it was found that some social and cultural issues may act as barriers to adoption of m-learning in Kuwait.

In France, a similar research was carried out by other researchers [12] to determine the usage and acceptance of mobile devices by teachers in a business school. The teachers who participated in this study suggested that traditional teaching practices should be changed to create quick and timely response using mobile learning environment.

The research [13] investigated the perception and intention of lecturers in implementing mobile learning in Multimedia University in Malaysia. The findings of the study suggested that the educators tendency was to use mobile technologies for facilitating the class learning activities such as student attendance, making class announcements, planning class events and course assessment.

The results of another study [14] indicated that mobile device attracted students' attention more when a multimedia application that combined the text, graphics, audio and video was presented to them.

### 3. RESEARCH METHODOLOGY

This research was conducted in October, 2016. In order to gather information about students' perception and the usage of mobile phones, a questionnaire was developed to be used as the main research tool for the study.

The questionnaire had three sections whereby section I was about the demographic background of respondents. The section II was to acquire the information about the type of hand held device students were using and for what purpose. The section III had 10 items designed to measure students' attitudes and perception on the effectiveness of mobile learning. A five point Likert Scale with strongly agree, agree, neutral, disagree, and strongly disagree was employed to assess the respondents' views on the subject.

#### 3.1 Participants

The participants of the research were selected from Kampala University, Kampala, Uganda. In Uganda, mainly there are two types of universities, namely, public and private. The Kampala University is among the few private chartered universities among dozens of other private universities in the country.

#### 3.2 Sampling

Probability and non-probability (convenient) sampling approaches are the most popular sampling techniques used by researchers in their studies. However, in this research, convenient sampling was found more appropriate, as it is widely used by researchers around the world (e.g., see [15], [16], [17]). In convenient sampling, a researcher has the opportunity to choose respondents who are willing to participate in the research and are conveniently available.

#### 3.3 Procedure of the Study

The paper based questionnaire including cover letter was administered to the students during the lecture hour. The students were given some minutes at the end of the lecture to complete and return the documents to the lecturer concerned. All respondents were asked to fill the questionnaire and they were assured of confidentiality. All the respondents were from School of Computer Science and Information Technology offering programmes ranging from Certificate to Bachelor level. There was no respondent from Master and PhD level in the survey.

#### 3.4 The Validity of the Instrument

In order to ensure the validity of the instrument used, the questionnaire was reviewed by two academic staff members in the computer stream before giving it to students.

#### 3.5 Statistical Procedures

In this study, frequencies and percentages of respondents' responses to the questionnaire's items were computed using online resources.

## 4. RESULTS AND DISCUSSION

### 4.1 Respondents' Demographic Data

This section highlights the various demographic attributes of the respondents. The study shows that a total of 38 students from School of Computer Science and Information Technology from Kampala University, Uganda, participated in the research. Among the 38 respondents, 33 (86.84%) were male and 5 (13.16%) were females as shown in Table 1.

Table1. Gender of participants

Gender	
Male	33
Female	5

The study results reflected that in the sample only 2(5.26%) were below 20 years of age and 36 (94.74%) were in the age range of 20-30 years and there was no participant who was above 30 years, as presented in Table2.

Table2. Age of respondents

Age Range			
<20 years	20-30Years	30-40Years	>40 Years
2	36	-	-

In the sample, the participants who came from undergraduate programmes in the School of Computer Science and Information Technology of Kampala University, 29 were offering Bachelor, 9 Diploma and there was only 1 who was offering the Certificate Programme. None of the respondents were from Masters and PhD programmes as presented in the table3.

Table3. Respondents' academic programmes

Programme	Bachelor of Computer Science and IT	Diploma in Computer Science and IT	Certificate in Computer Science and IT
No. of Respondents	28	9	1

### 4.2 Respondents' Type of Portable Devices

The survey also indicated that very few respondents do not use smart phones and all others are using one or other type of smart phone. The study results reveal that 2(5.26%) were not having smart phones, 1(2.63%) have PDA. It was found that there was only1 (2.63%) respondent who had Blackberry. The study results reflect that 9 (23.68%) of the respondents were using iPhones and majority 25 (65.79%) of respondents had one or other type of smart phones as shown in table 4.

Table4. Respondents' mobile devices

Type of Portable Device	No.
PDA	1
Blackberry	1
I-Phone	9
Other type Smart Phone	25
Other	2

### 4.3 Mobile phone usage by Respondents

Currently, mobile phones have become an essential part of university students' everyday life. Smartphones are characterized by many features such as checking e-mails, accessing social media sites that included face book and Twitter, surfing internet and downloading files, watching movies, sending and receiving mobile money, audio/video conferencing in addition to the traditional use of calling and sending messages among others.

In the recent years the mobile phone usage has grown explosively worldwide. Therefore, it is important to understand how student community uses the mobile devices. In this research the usage of mobile devices was also explored. The data analysis yielded the following themes: Phone communication, Sending and receiving email, Sending and receiving text messages, Scheduling appointments or tasks, Banking, Watching videos, Listening audio clips, Shopping, Library, Using for social media (Facebook, Twitter, LinkedIn), Playing non-academic interactive games, and Reading documents. However, some of them also indicated that they do not engage in personal activities on the mobile device.

### 4.4 Mobile learning knowledge

Although every university student possesses a mobile device as survey results have indicated. However, owning a mobile device alone merely does not guarantee that owner have any knowledge of mobile learning. Therefore, it was found necessary to acquire information whether students have some knowledge about mobile learning before assessing their perceptions. The survey results indicate that the majority 34 (89.47%) out of the total 38 had prior knowledge of mobile learning and very few 4(10.52%) did not know about mobile learning as presented in the table5.

**Table5. Respondents' Mobile learning knowledge**

Mobile Learning Knowledge	No. of respondents
Yes	34
No	4

### 4.5 Respondents' Perception towards Mobile Learning

Shifting from traditional face to face classroom learning to new type of learning through mobile devices seems to be the best alternate for learning at higher education. This empirical research aimed to investigate the students' perceptions about

mobile learning in Kampala University. The study results indicate that students have positive perception about the new innovative form of learning any time anywhere using mobile devices.

The percentage of the descriptive statistics of the perception about mobile learning by the participating sample are shown in table 6. Responses to each of the indicators on perception of mobile learning were measured on a 5 point Linkert Scale, ranging from "Strongly agree" to "Strongly disagree". The percentage of respondents' scores were also calculated using online resources.

The scores of the item no.1, indicate that majority 44.73% of the respondents agree that mobile learning is an effective method for learning in comparison with traditional face to face to face learning, in addition to 7.89% who strongly support the idea. In response to item no.2, the investigation results show that a larger percentage 63.15% agree to the fact that mobile learning will introduce exciting new ways of learning, excluding 18.42% who strongly support the theme, along with 50% agree and 47.36% strongly agree to the flexibility characteristic of mobile learning, accessing learning contents at anywhere and anytime. At the same time 47.36% respondents strongly agree in addition to 42.10% who agree that mobile learning can enhance their communication between students to students and student to lecturer. The research results also reflected that 39.47% of surveyed students agree whereby 34.21% strongly agree to the statement that mobile learning is a quicker means of getting feedback.

In addition, the researchers collected views of the respondents on the notion that mobile learning cannot be used as a tool for learning because many students do not possess mobile phones. In response to item no.6 on the above theme, it was found that 21.05% strongly disagree and 13.15% did not agree to that fact. Another assumption that mobile learning is costly, the investigation results indicate that majority 23.68% agreed whereby 28.94% strongly agreed to this assumption. The next item explored the obstacles such as low speed network in the town to implementation of mobile learning that students expected to have, and found that that majority 34.21% agree and 15.78% strongly agree to that reality. Low speed network is one of the main challenge which most developing countries are facing. The findings also suggest that a larger percentage 39.47% strongly agree and another 36.84% agree to the assertion that mobile learning will enable them to download the learning material. Finally, the majority 52.63% agreed along with 31.57% strongly agreed to the idea that mobile learning will enable learners to upload the learning material easily.

**Table 6: Descriptive statistics of respondents' perception of mobile learning (Synthesized from [18])**

Item No.	Questionnaire Indicator	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Responded	Total
1	Mobile learning can be an effective method of learning as compared to traditional face to face method	3(7.89%)	17(44.73%)	9(23.68%)	9(23.68%)	0(0%)	None	38
2	Mobile learning will introduce exciting new ways of learning.	7(18.42%)	24(63.15%)	3(7.89%)	2(5.26%)	0(0%)	2(5.26%)	38

3	Mobile learning will be flexible and attractive method of learning as it provides an opportunity studying anytime, anywhere	18(47.36%)	19(50%)	0(0%)	1(2.63%)	0(0%)	0(0%)	38
4	Mobile learning will enhance communication between learners and lecturers	18(47.36%)	16(42.10%)	3(7.89%)	1(2.63%)	0(0%)	0(0%)	38
5	Mobile learning is an efficient and quicker method of getting feed back	13(34.21%)	15(39.47%)	9(23.68%)	1(2.63%)	0(0%)	0(0%)	38
Mobile learning cannot be used for learning due to following reasons:								
6	-many students do not have mobile phones	4(10.52%)	8(21.05%)	8(21.05%)	5(13.15%)	8(21.05%)	5(13.42%)	38
7	- Mobile learning is costly	11(28.94%)	9(23.68%)	5(13.15%)	2(5.26%)	4(10.52%)	7(18.42%)	38
8	-poor networking in the town	6(15.78%)	13(34.21%)	5(13.15%)	8(21.05%)	0(0%)	6(15.78%)	38
9	Mobile learning will enable me to download the learning material	15(39.47%)	14(36.84%)	0(0%)	4(10.52%)	2(5.26%)	3(7.89%)	38
10	Mobile learning will help me to upload the learning material	12(31.57%)	20(52.63%)	2(5.26%)	2(5.26%)	1(2.63%)	1(2.63%)	38

## 5. CONCLUSION

This paper assessed the readiness of mobile learning at Kampala University by investigating the students' perceptions about mobile learning. The researchers have analyzed the responses to the questions in the survey aimed to gain an understanding of how student community view the use of mobile learning. The main advantages of mobile learning along with some key barriers to the adoption of mobile learning in developing countries were also explored.

The analyses of the results suggest that all students in the survey had one or other type of mobile devices and they are using them for non-academic purposes. This research used a sample of students from one school, therefore, further research is needed that includes such samples from other schools of the university. Furthermore, it is important to assess the lecturers' perception prior to the adoption of new

paradigm in teaching and learning stream of the institution. Further research may include collecting a large sample size to measure the readiness of mobile learning in the different parts of the developing world to gain an understanding of how student community view the use of mobile devices in learning environments.

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