GENDER INFLUENCEON PERCEPTION OF COLLEGES OF EDUCATION STUDENTS' UTILISATION OF MOBILE TECHNOLOGIES FOR LEARNING

IBRAHIM, Taye, KAREEM, Ibrahim Ahmed & YAHYA, Saheed Olalekan
Department of Curriculum and Instruction, School of Education,
Federal College of Education (Special) Oyo, Nigeria
Department of Curriculum and Instruction, School of Education, Kwara State College of Education (Technical),
P.M.B. 001, Lafiagi, Kwara State, Nigeria
Department of Curriculum and Instruction, School of Education,
Federal College of Education (Special) Oyo, Nigeria

Abstract
Mobile technologies (MT) are devices that can be adopted for learning but are being under-utilized for educational purposes by students of higher institutions in developing countries. Therefore, there is need to prepare College of Education (COE) students towards the utilization of MT for learning. The objectives examined gender influence on students' perceived usefulness; perceived ease of use; attitude towards the utilization and intention to utilize MT for learning. The study adopted descriptive research of survey method. The population of the study were all colleges of education students in Nigeria. The respondents comprised 29,277 while from seven COE 1,060 samples were purposively and randomly selected. Data were collected with validated researcher-designed questionnaire. The hypotheses were tested with one sample t-test and Analysis of Variance (ANOVA) at 0.05 level of significance. The result of the study revealed that gender had no influence on students' perceived usefulness ($t(1060)=.90$, $p=.37,p=>0.05$), perceived ease of use ($t(1060)=-.472$, $p= .64$, $p=.0.05$) and students' attitude ($t(1060)=-.472$, $p= .64$, $p=>0.05$)to utilize MT for learning. However, there was significant difference in students' intention to utilize MT for learning based on gender with that of male higher than that of female students ($t(1060)=2.21$, $p=.03$, $p=<0.05$). Hence, gender had influence on the COE students' intention to utilise MT for learning. The implication is that gender was a factor that needed to be considered in COE students' intention to utilise MT for learning.
Keywords: Perception, Utilisation, Mobile Technologies, Learning

Introduction

Every underdeveloped nation is yearning for development in order to be counted among the developed nation among others. One the known tools that can be utilised for such attainment is the level of education acquired by her citizens that contribute to the development of such country. Lusardi (2010), defined education as a process of preparing children for the "real world" by giving them the tools they need to live and function on their own. It is a natural fact that every organism (human being inclusive) receives information and reacts to happenings in its environment. The learning environments include but not limited to the facilities available in the environment, the mode or method of instruction as well as media that are used for the instruction. Whenever an individual interacts with the information and its environment it usually results to the creation of new knowledge, skill or attitude, which is known as learning (Heinich, Molenda, Russel &Smaldino, 2002).

The role of Information Communication Technology (ICT) in carrying out human activities is very enormous and has permeated all aspects of human endeavour including education. Yusuf (2007), defined ICT as technologies that are used for accessing, processing, gathering, manipulating, and presenting or communicating information. Orunmoluyi (2012) opined that, the formulation of Nigeria National Policy for Information Technology (NNPIT) in 2001 was because of recognition and importance of ICT. Ogunlade (2009) noted that ICT is essential tools for teaching and learning that can be utilized to solve some of the problems that are facing education. Nwokoye and Uche (2017), opined that ICT can be used in educational institution for time tabling, processing of students' admission and management of data distribution of students among others. Ololube (2006) advised that education environment should make use of this advantage to provide easy access to information which ICT can provide in a realistic manner. The NPE (FRN, 2014) promised the provision of ICT training in all teachers training programmes. This was premised on the recognition that the would-be-teachers would have been equipped with the required and necessary ICT skills that will assist them in their future career and responsibilities.

However, mobile technologies that are one aspect of ICT are those technologies that can be utilised freely and easily from one place to another. United Nation Educational Scientific and Cultural Organisation (UNESCO)

(2013), defined mobile technology as any portable, connected technology, mobile phone, e-reader, smart phone and tablet computer that will retain the abilities of portability, accessibility to internet and other networks, multimedia-capable, facilitation of a large number of tasks most especially as related to communication. Therefore, it is very necessary that technological devices which have been identified as driving force of many developments in our modern society is updated or upgraded by adopting the utilisation of mobile technologies in teaching and learning processes in educational institutions.

Henry and Neal (1999) identified communication as the area that has been grossly influenced than any other area by technology. It can therefore be concluded that teaching that is one of the roles of teachers is becoming one of the most challenging professions in the world today. This is since knowledge is expanding rapidly while modern technologies are demanding that a teacher learns how to use them to accomplish his/her duty. In addition to the helping hand that mobile technologies offer to teachers, they equally assist the learners who are the target of the teaching and learning process to learn better and faster. It has been discovered that the school cannot give all the knowledge needed by learners to then; hence the need to explore other available avenues that can complement the efforts of the school in getting the learners educated (Lusardi, 2010). Issa, Daramola, Aladesusi and Udoh (2017) identified that the use of mobile technologies for learning can assist the learners to improve their literacy skills and can be used as a mean to enhance both independent as well as collective learning experience of the learners among their peers. Teachers who are considered as key factor in promoting learning are faced with many challenges in ensuring that mobile technologies and other related device are used to achieve this. Sanjaya (2009) suggested that when an institution wants to attempt to implement the use of mobile technologies for learning, it must consider the experience of the learners, the pedagogical culture, the available infrastructure, the organisational strategy, and vision. All these will determine the success of the implementation of the use of technologies for learning in any institution.

There are clear evidences that innovation and the use of technologies have permeated almost every aspect of human life including education. Charles (2012), asserted that the ability to read, write and count is no more enough for a meaningful development but the addition of acquisition of technological skills. In line with this assertion, there have been rapid growth and increase demands to adopt mobile technologies for teaching and learning.

Researchers in the past have identified several factors that can influence the utilization of technological related devices for educational purposes. One of the identified factors is perception. In the view of Olasedidun (2014) perception means receiving, collecting and action of taking possession, apprehension with the mind or senses. Comparatively, perception in connection with the adoption of mobile technologies for learning by learners or colleges of education students can be described as a way and manner the students will accept or believe that mobile technologies can be used for learning. This belief may be in a way of looking at mobile technologies as communication tools alone or as tools that can be used for learning but with ease or with difficulties. Dilworth (2005) described perception as a phenomenon that enables an individual to acquire information about worldly objects and their properties. These descriptions when connected or discussed in terms of technologies explain the way and way the properties of technology are viewed in term of using them for teaching or learning. As identified by the author, the factors would predict if the innovation will be used or not which depends on how it has been perceived by the would-be-users. Deductively, if learners perceived mobile technologies as being useful and easy to use for learning, they are likely to use them for learning but if it is otherwise, they are not likely to use them for learning. The same holds if the perception of a would-be-user of a novel mobile device is positive, the likelihood that such a device would be used pedagogically or successfully is very high.

Therefore, it is very imperative that students in colleges of education are made to be aware of the inherent advantages in the utilisation of mobile technologies for learning as well as directing their perception positively towards mobile technologies for them to have positive attitude to their usage for learning.

Researchers in the past have identified several factors that influence or hinder the utilisation of technologies for either teaching or learning ranging from personal, institutional, technological characteristics and many others (Charles, 2012). The identified factors have in one way or the other influenced or marred the utilisation of technologies for instruction. The personal ones identified by Charles (2012), included attitude, ICT competence, computer self-efficacy, gender, experience, and workload. Other factors identified by the researcher included instructional characteristics, accessibility, and the leadership support. Gender, which is a personal characteristic that has been an issue of concern to educational researchers and has attracted the attentions of previous researchers. Hence, the rationale behind finding its influence in this study.

Statement of the Problem

It is an established fact that technology has become an integral part of life and teaching and learning even though traditional methods of teaching still dominate at the higher institutions in Nigeria (Umunadi, 2011). These technological devices include mobile technologies that are relatively cheap and are increasingly being acquired by students in Nigeria (Aderinoye, Ojokheta&Olojede, 2007). However, change, which is a constant phenomenon is inevitable in all aspect of human endeavour, including education that needs to be changed when the situation demands. This will make education to be constant and meet the modern standard that requires the knowledge of how to manipulate mobile technologies for learning. Hence, teaching and learning that is a major factor in education must equally change its method to help learners (students) who will become future teachers to develop the required skills they need to be able to succeed in the 21st century.

Research had established the fact that the availability of a tool does not predict its usage. Charles (2012) enumerated factors that influence adoption of ICT to include but not limited to, personal characteristics of the user, the attitude, competence, self-efficacy, gender, experience, accessibility, among others. This means that it is one thing for the ICT tools to be available and accessible and another for the would-be users to use them. Other phenomena such as perceived usefulness, perceived ease of use, attitude towards and intention by the prospective users are equally important for the utilisation of any device or technology for teaching and learning to be successful. Relevant literature revealed that findings on gender influence on the perception of technological devices like mobile technologies for learning are inconclusive. Hence, the need for the study of gender influence on colleges of education students' perception on the utilisation of mobile technologies for learning.

Objective of the Study

The study investigated the perception of colleges of education students on the utilisation of mobile technologies for learning. Specifically, the study examined:

1. the perception of colleges of education students on the usefulness of mobile technologies for learning.
2. the perception of colleges of education students on the ease of use of mobile technologies for learning.
3. the attitude of colleges of education students to the utilization of mobile technologies for learning and
4. the intention of colleges of education students on the utilization of mobile technologies for learning.

Research Hypotheses

The following null hypotheses were tested in the study.

Ho$_1$: There is no significant influence of gender on colleges of education students' perceived usefulness of mobile technologies for learning.

Ho$_2$: There is no significant influence of gender on colleges of education students' perceived ease of use of mobile technologies for learning.

Ho$_3$: There is no significant influence of gender on colleges of education students' attitude towards the utilisation of mobile technologies for learning.

Ho$_4$: There is no significant influence of gender on colleges of education students' intention on the utilisation of mobile technologies for learning.

Methods

The research was a descriptive of the survey method. The population for the study was students at colleges of education that are in the North-central geo-political zone of Nigeria. However, students from seven colleges of education (comprising federal and state owned) in the North-central zone of Nigeria formed the sample for the study. To ensure a fair representation, respondents were sampled from seven colleges of education (one from the FCT and one each from six states). Five out of these colleges were purposively sampled (four being federal and one being the only college in a state). While random sampling technique was used to select the remaining two colleges. Hence, the researcher ensured that a college each was sampled from each of the six states and Federal Capital Territory (Abuja) that form the North-central zone of Nigeria. To take care of research mortality, 1,100 copies of the questionnaire were administered to respondents that were stratified along gender out of which only 1060 were adequately filled and returned. The instrument for the study was a researcher-designed questionnaire that was divided into six sections (A-F). Section A dealt with information about the gender of the respondents. While sections C–E examined colleges of education students' perceived usefulness, ease of use, attitude, and intention on the utilisation of mobile technologies for learning respectively. Each of these sections (C-E) has response mode of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The researcher took permission from the appropriate quarter of each of the colleges of education where samples were drawn from. Having obtained permission to administer the questionnaire to the respondents, the researcher then contacted the respondents on the purpose of the study, how to fill the questionnaire and sought for their co-operation. The respondents were equally given the opportunity to participate in the study voluntarily without being coerced as doing so is unethical and will also not produce reliable results. The researcher thereafter administered the questionnaire to the willing respondents, respected their privacy and autonomy while filling the questionnaire to obtain reliable results and then retrieved them immediately for analysis. Confidentiality was equally maintained in the report of the findings of the study as no personal or college name was disclosed but was treated with utmost confidentiality. The data gathered for the study were analysed using descriptive and inferential statistics. Research question1 was answered using frequency count and percentage. However, since research questions1-4 resulted to hypotheses, they were analysed using the results that were derived from the hypotheses 1-4 respectively. For hypotheses testing, hypotheses 1-4 were tested using t-test because they consisted of independent variable that exists at two levels (male and female). All the hypotheses were tested at 0.05 level of significance.

Table 1: Distribution of Respondents by Gender

Gender	No of Respondents	Percentage (%)
Male	621	58.6
Female	439	41.4
Total	**1060**	**100.0**

Table 1 shows the percentage of the respondents by gender where that of male was 621 (58.6%) while that of the female was 439 (41.4%). It is evident from Table 2 that there were more male students 621 than female students in colleges of education that are in the North-central, Nigeria based on the sample selected for the study.

Results

Based on research questions 1-4, research hypotheses 1-4 were formulated. The results that relate to hypotheses one to four formulated for the study were tested at 0.05 level of significance.

Hypothesis One

H01: *There is no significant influence of gender on colleges of education students perceive usefulness of mobile technologies for learning.*

Table 2: t-test of Male and Female Colleges of Education Students' Perceived Usefulness of Mobile Technologies for Learning

Gender	No	X̄	SD	df	T	Sig. (2- tailed)	Remark
Male	621	31.34	3.8	105	.9	.37	Not Rejected
Female	439	31.13	3.65				
Total	1060						

Table 2 indicates that t (1060) = .90, p = .37. This means that the null hypothesis was not rejected. This was because of the t-value of .90 resulting in .37 significance values which was greater than 0.05 alpha value. By implication, the stated null hypothesis established thus: There was no significant influence between male and female respondents in their perceived usefulness of mobile technologies for learning. In other words, based on the earlier mean score of the respondents' general perception, both male and female respondents had a high positive perception.

Hypothesis Two

HO2: *There is no significant influence of gender on colleges of education students perceived ease of use of mobile technologies for learning.*

Table 3: t-test of Male and Female Colleges of Education Students on Their Perceived Ease of Use of Mobile Technologies for Learning

Gender	No	X̄	SD	df	t	Sig. (2- tailed)	Remark
Male	621	27.0	23.28	1058	-.472	.64	Not Rejected
Female	439	27.12	3.31				
Total	1060						

Table 3 indicates that t (1060) = -.472, p=.64. This means that the stated null hypothesis was not rejected. This was because of the t-value of -.475 resulting in .64 significance value which was greater than 0.05 alpha value. By implication, the stated null hypothesis established that: There was no significant influence of gender on colleges of education students' perceived ease of use of mobile technologies for learning. Based on the earlier mean score of the colleges of education students' general perception, both male and female college of education students had high positive perception.

HO3: *There is no significant influence of gender on the colleges of education students' attitude to the utilization of mobile technologies for learning*

Table 4: t-test of Male of Female Colleges of Education Students' Attitude towards the Utilisation of Mobile Technologies for Learning

Gender	No	X̄	SD	df	T	Sig. (2- tailed)	Remark
Male	621	25.87	4.23	1058	2.30	.21	Not Rejected
Female	439	25.26	4.32				
Total	1060						

Table 4 indicates that t (1060) = 2.30, p= .21. This means that the stated null hypothesis was not rejected. This was because of the t-value of 2.30 resulting in .21 significance value which was greater than 0.05 alpha value. By implication, the stated null hypothesis established that: there was no significant influence of gender on colleges of education students' attitude to the utilization of mobile technologies for learning. Therefore, based on the earlier Grand mean score (2.561) of the colleges of education students' general perception both male and female colleges of education students had a high positive attitude.

Ho4: *There is no significant influence of gender on the colleges of education students' intention to the utilisation of mobile technologies for learning.*

Table 5: t-test of Male and Female Colleges of Education Students' Intention to Utilise Mobile Technologies for Learning

Gender	No	$\overline{\text{X}}$	SD	Df	T	Sig. (2- tailed)	Remark
Male	621	28.81	3.39	1058	2.21	.03	Rejected
Female	439	28.31	4.07				
Total	1060						

Table 5 indicates that t (1060) = 2.21, p = .03. This means that the stated null hypothesis was rejected. This was because of the t-value of 2.21 resulting in .03 significance values which was less than 0.05 alpha value. By implication, the stated null hypothesis established that there was significant influence between male and female colleges of education students' intention to utilize mobile technologies for learning. In other words, male students at colleges of education had more intention to utilize mobile technologies for learning than the female since the male had higher mean than the female as shown in Table 5.

Discussion

Findings of Yusuf and Balogun (2011) in which no significant difference was established between male and female student-teachers' attitudes and use of ICT. Ayinde (2011) investigated the computer self-efficacy among teachers in primary, secondary, and tertiary institutions in Niger State, Nigeria. The findings showed that, Male and female teachers in secondary school have similar competence in the use of computer. Also, Bamidele and Olayinka (2012) found that Male and female teachers in secondary school have similar competence in the use of computer. However, Male primary school teachers were more proficient in the use of computer than their female counterparts. This is contrary to Chukwuemeka (2010) findings which showed that the female teaches having inadequate proficiency skills in using internet for teaching and learning process. Also, Gambari, Gbodi and Yaki (2008) reported that male lecturers are more competent in using Internet than their female counterparts.

Conclusion

The findings of this study established that gender has a significant influence on colleges of education students use of mobile technologies for learning. This implies that gender is a major factor to be considered in the use of mobile technologies for learning.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Educational policy makers should collaborate with ICT experts to develop course wares that will strengthen COE students' perceived usefulness, ease of use, attitude, and intention to utilize mobile technologies for educational purposes.

2. Policy and training that are devoid of gender discrimination should be formulated and implemented in COE to enhance female students' intention to utilize mobile technologies for learning like that of their male counterparts.

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