UNDERGRADUATES' PERCEPTION AND ATTITUDE TOWARDS THE USE OF MOBILE TECHNOLOGY FOR BLENDED LEARNING IN UNIVERSITY OF ILORIN, NIGERIA

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Abstract

This study examined undergraduates' perception and attitude towards utilization of mobile technologies for blended learning in University of Ilorin, Nigeria. The study was a descriptive design of the survey type. Random Sampling technique was adopted to select 339 undergraduate undergraduates from selected faculties in University of Ilorin. Data generated through a designed structured questionnaire were analyzed through frequency count and percentage. Three research questions were raised and answered using frequency count and percentage, while t-test was used to test the one hypothesis generated. The result revealed that (i) mobile technology facilitates blended learning for undergraduates to easily view course materials which make school work easily accessible and interesting, (ii) undergraduates use mobile devices for gaming, chatting, and socializing, instead of learning, (iii) there is no significant difference in undergraduate's attitude towards the use of mobile technology for blended learning based on gender $t(292) = 2.86$, $p > .05$]. The study concludes that mobile technology has the potential to increase undergraduates' learning pace, accessibility and communication in a blended learning environment. Based on the findings, it was recommended that universities should increase the internet bandwidth. Lecturers should be encouraged to engage the undergraduates in a blended learning environment.

Keywords: Attitude, Blended Learning, Mobile Technology, Perception, Undergraduate

Introduction

Information and communication technology (ICT) plays a vital role in learner's achievement at all educational levels and its significance in education cannot be overemphasized. ICT are tools for both students and teachers. ICT has the potential of being used to meet the learning needs of individual students, increase self-efficacy and independence of learning among students and improve students' development. Through ICT, there is cooperative learning that assists students in gaining more knowledge and techniques as they interact with each other. Ogunlade (2015) defines ICT as a driver for change in higher education. ICT is being used effectively in education and learning environments, due to its spread of internet use that has different dimensions globally. Most countries have used the privilege of ICT to transform the structure of education programmes at all levels for disseminating instruction. The use of ICT in schools has widened accessibility to quality education and improved the management of education learning systems. ICT is considered a powerful tool for educational change and reform. ICT is used as productivity tools or enrichment resources to support the traditional teacher-led mode of instruction, optimize undergraduates-centred pedagogical methods, develop broad and generic skills, and provide quicker and easier access to more extensive and current information (Ogundairo, 2015).

Cobcroft, Towers, Smith and Axel (2006) opined that mobile technologies within the education context can allow undergraduates the opportunity to undertake 'user-led education', constructing

knowledge, collaborating with peers and learning communities within and beyond the classroom or computer centre. Valk, Rashid, and Elder (2010) demonstrated how mobile technology-facilitated learning can give undergraduates in developing countries increased access to educational materials and services, particularly in rural and urban areas. Mobile technologies are new generation educational tools that afford creative use and instant access to a wealth of online resources (Pamela, 2011). They are 'revolutionary' devices that hold great potential for transforming learning. One of the benefits of mobile devices is that they enable learning anywhere, anytime. This allows a shift away from the industrial era model where the classroom is the central place of learning driven by the teacher and limited to instruction within the school day. Use of mobile devices encourages undergraduates' interaction, the teacher is no longer at the centre of the learning process and the instructional time can transcend the school day. The portability of mobile devices provides users with access to a broader and more flexible source of learning materials than what is offered in classroom settings. With over 500,000 apps (mobile applications) available to download from the App Store, undergraduates have access to an abundance of learning materials for use on mobile devices (Shuler, 2012).

Advances in mobile technologies have enabled educators to send instructional messages in flexible ways. With mobile technologies, instructors and undergraduates can communicate through voice and image as well as text. Using mobile devices for educational purposes is becoming a common expectation of learners (Lan & Huang, 2012). Also, mobile technology supports independent learning and development of metacognitive skills in young learners (Sha, Looi et al. 2011). Wong (2012) supported that access to mobile technology allows undergraduates to design their own learning contexts in terms of when, where, how and their learning style thereby becomes increasingly self-directed.

Abdulrahman and Soetan (2018) defined mobile learning as a form of learning using wireless devices that can be used wherever the learner is with unbroken transmission signals. These include mobile devices like smart phones, tablet computers, laptops and persona digital aids (PDAs). It is also defined as the exploitation of ubiquitous hand-held technologies, together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of teaching and learning. Nikana (2000) identifies several potential advantages of mobile learning which includes increased understanding of the material/curriculum content. Through different collaborative methods and delivery approaches, undergraduates are provided with an increased understanding and depth of knowledge regarding the material/curriculum content. Undergraduates' motivation may increase through the use of mobile devices because undergraduates could be participating in group discussion and dialogue more often and receive quick and effective feedback, which reinforces learning and increases memory retention. Another view, however is that, increased motivation to learn will be directly associated with the use of the mobile device, rather than the task completed with it (Goodison, 2001).

Online learning has evolved from web-based and distance learning programs, which has come to represent the leading edge in rethinking course design and personalized instruction using digital content and innovative tools for instructional delivery. As social software provides interesting possibilities for building collaborative learning environments, the wireless networks allow flexibility in setting up learning environments where needed (Mikko et al, 2010). Undergraduates incorporate various means like blended learning to study. Lalima and Kiran (2017) defined blended learning as an innovative concept that embraces the advantages of both traditional teaching in the classroom and ICT supported learning including both offline learning and online learning. It has the scope for constructive learning, collaborative learning and computer assisted learning. Blended learning is also referred to as hybrid learning that combines the best features of traditional schooling with the advantages of online learning to deliver personalized, differentiated instruction across a group of learners. Undergraduates in formal blended learning educational

programs spend part of their time learning online and also have the benefit of face-to-face instruction and supervision to maximize their learning and to best fit their own needs (Allison et al, 2015).

According to Garrison and Kanuka (2004), the simplest model of blended learning "is the thoughtful integration of classroom face-to-face learning experiences with online learning experiences" aiming at taking advantage of a synchronous face-to-face situation and the asynchronous, text-based Internet. Kose (2010) suggested a more advanced way of utilizing the idea of blended learning by connecting the possibilities of face-to-face situation and online environments in several ways, both simultaneously and non-simultaneously. Garfield (2005) expressed that the innovation of technology-based learning continues to challenge educators to develop new teaching and learning methods. Unfortunately, many teachers and undergraduates resist change in teaching and learning with new technology because they do not think of themselves as part of a new learning culture. Clarke, Zimmermann and Svanaes (2013) submitted that undergraduates perceived mobile technology as a tool that facilitates access to personalized learning content with the ability to learn outside traditional classroom settings.

The perceived level of integrating mobile technology into blended learning among undergraduates in higher institutions has increased greatly over the years, ranging from the use of social apps to utility apps and likes (Yeboah & Ewur, 2014). Undergraduates understand that mobile technology enables them to create their own understanding of content. However, Mather (2015) noted that lack of structure on use of mobile devices can negatively impact undergraduates' learning. If undergraduates find their mobile devices useful, they tend to integrate in into their task, routines and even learning. Undergraduates' perception towards a blended learning environment may have an effect on their behaviour, which is referred to as attitude. Attitude is defined as an individual behaviour or feeling about something, formed in a situation influenced by cognitive process of information. Attitude is divided into three categories namely: cognitive, affective and psychomotor. Bada (2017) defined attitude as an umbrella expression covering such concepts as preferences, feelings, emotions, beliefs, expectations, judgments, appraisals, values, principles, opinions, and intentions. Consequently, adoption or rejection of a specific behaviour may be affected by attitude. However, undergraduates' perception and attitude towards a learning environment determines the amount of learning that will take place. It was further expressed that undergraduates' attitudes to the use of mobile technology for learning is positive as it is used to support teaching and learning.

Yet for such initiatives (blended learning) to improve undergraduates' learning and teaching effectiveness, these initiatives must be accepted by undergraduates. Cavus and Ibrahim (2009) expressed that undergraduates' attitude and perception is essential for effective implementation of mobile technology in learning. Maniar, Bennett, Hand, and Allan (2008) posited that small screen size was found to create cognitive disadvantages related to undergraduates' attention and visual perception. However, undergraduates have also reported wanting to have more options to make learning tools more convenient so they can study when and where they want to. Typically, the use of personal devices affords undergraduates' ownership of learning, which may lead to positive language learning experiences (Kukulska-Hulme, 2009).

Many educational institutions have implemented ubiquitous or required laptop, notebook, or tablet personal computing programs for their undergraduates. Yet, limited evidence exists to validate the acceptance of this implementation among undergraduates. In that regard, the objective of this research is to determine undergraduates' perception and attitude towards the use of mobile technology for blended learning. The research contributes to a better understanding of the introduction of information technology (IT) based initiatives in education with a particular emphasis on mobile technology and blended learning.

Research Questions

The study sought answers to the following research questions:

1. How do undergraduates perceive the use of mobile technology for blended learning?
2. What is the attitude of undergraduates towards the use of mobile technology for blended learning?
3. Does gender have influence in undergraduates' attitudes towards the use of mobile technology for blended learning?

Research Hypothesis

H_{01}: There is no significant difference in the undergraduate's attitudes towards the use of mobile technology for blended learning based on gender

Methodology

The study was a descriptive research of the survey method. The survey was conducted to collect the data on undergraduates' perception and attitude towards the use of mobile technology for blended learning. From a total of fifteen faculties in University of Ilorin, eight faculties were randomly selected, while 50 respondents were purposively selected from each faculty, which comprised 400 respondents. However, from the 400 copies of the questionnaire administered, only 339 copies were found usable for the purpose of this research. The instrument for this study was a researcher designed questionnaire titled: "Undergraduates perception and Attitude towards the use of mobile technology for blended learning in University of Ilorin". The questionnaire was divided into three (3) sections. Section A consisted of demographic information of the respondents while Section B and C sought information on the variables selected from the study. The questionnaire consisted of twelve (12) questions and modified Likert attitudinal scale with reference option of SA = Strongly Agree, A = Agree, SD = Strongly Disagree, D = Disagree. The questionnaire was chosen as the research instrument for this study because it is useful for gathering data in real time from a large sample within a short period of time.

Data obtained through the questionnaire was subjected to descriptive and inferential statistics. The descriptive analysis (frequency count and percentage) was used to answer the research questions while t-test was used to answer the research hypothesis. Data collected was coded and analyzed using Statistical Package for Social Sciences (SPSS) version 20.0 for windows at 0.05 level of significance.

Table 1:
Distribution of respondents

Demographics	Frequency	Percentage%
GENDER		
Male	166	49%
Female	173	51%
Total	339	100.0
FACULTY		
Agriculture	43	12.7%
Arts	44	13%
Communication and Information Science	47	13.9%
Education	44	13%
Life Science	44	13%
Management Science	39	11.5%
Physical Science	40	11.8%
Law	38	11.2%
Total	339	100%
AGE		
15-18 years	50	14.7%
19-22 years	170	50.1%
23-26 years	78	23%
27 and above	41	12.1%
Total	339	100%
LEVEL		
100 level	21	6.2%
200 level	160	47.2%
300 level	102	30.1%
400 level	56	16.5%
Total	339	100%

The demographic information of respondents who took part in the study in table 1 revealed that 166 (49%) respondents were male while 174 (51%) respondents were female. This indicates that more female than male respondent took part in the study. Based on demographic faculty factor, 43 (12.7%) respondents were from Agriculture, followed by Arts with 44 (13%) respondents, 47 (13.9%) respondents were from Science, 44 (13%) respondents were from Education, 44 (13%) respondents (13%) were from Life Science, 39 respondents (11.5%) were from Management Science, 40 (11.8%) respondents (11.8%) were from Physical science, while 38 respondents representing (11.2%) where from Law. This shows that the majority of the respondents were from faculty of Communication and Information Science. The age distribution of the respondents revealed that 50 (14.7%) respondents falls within the age range of 15-18 years, 170 (50.1%) respondents were in range of 19 – 22 years, 78 respondents (23%) falls within the age range 23-26, while 41 (12.1%) respondents fall within the age range of 27 and above. This shows that majority of respondents are between the ages 19 – 22years. This is followed by the year of study of respondents which indicates that 21 (6.2%) respondents of those surveyed are in 100 level, while 160 representing (47.2%) respondents

are in their 200 level of study. Also, 102 (30.1%) respondents are in their 300 level of study, while those in their 400 level year of study account for 56 (16.5%) respondents respectively.

Results

Research Question 1: How do undergraduates perceive the use of mobile technology for blended learning?

Ta**ble 2:**
Undergraduates' perception on the use of mobile technology for blended learning

S/No	Items	Strongly Disagree (%)	Disagree (%)	Agree (%)	Strongly Agree (%)
1	The learning activities and assignments of courses taught with mobile technology met my learning expectations	46 (13.6%)	77 (22.7%)	126 (37.2%)	90 (26.5%)
2	I can easily view course materials on my mobile phones which make school work easily accessible and interesting	20 (5.9%)	56 (16.5%)	147 (43.4%)	116 (34.2%)
3	Blended learning through mobile technology gave me more opportunities to reflect on what I had learnt	33 (9.7%)	112 (33%)	74 (21.8%)	120 (35.4%)
4	My university provides the resources necessary for undergraduates to succeed in blended courses	57 (16.8%)	156 (46%)	85 (25.1%)	41 (12.1%)
5	Blended learning helped me to understand the course content better	29 (8.6%)	96 (28.3%)	140 (41.3%)	74 (21.8%)
6	Blended learning through mobile technology is not time consuming, not expensive and not very tasking.	77 (22.7%)	123 (36.3%)	85 (25.1%)	54 (15.9%)
7	The use of mobile technology creates an easy communication within the undergraduates and lecturers.	34 (10%)	100 (29.5%)	39 (11.5%)	166 (49%)

The result from table 2 indicates that respondents agreed that the learning activities and assignments of courses taught with mobile technology met their learning expectations with 216 (63.7%). Also, 263 (77.6%) respondents indicated that they can easily view course materials on their mobile phones which make school work easily accessible and interesting. However, 194 respondents (57.2%) agreed that blended learning through mobile technology gave them more opportunities to reflect on what they had learnt; while 145 respondents (42.7%) disagreed with this statement. 213 respondents (62.8%) indicated that universities do not provide the resources necessary for undergraduates to succeed in blended courses. Also, respondents agreed that blended learning through mobile technology is time consuming, expensive and very tasking with 200 (59%). 205 respondents (60.5%) agreed that the use of mobile technology creates an easy communication within the undergraduates and lecturers. From the responses as interpreted, it was deduced that undergraduates can easily view course materials on their mobile phones which make school work easily accessible and interesting. Also, blended learning through mobile technology helps in retaining knowledge and understanding the course content better. The use of mobile technology creates an easy communication between the undergraduates and lecturers.

Research Question 2: What is the attitude of undergraduates towards the use of mobile technology for blended learning?

Table 3:
Undergraduates' attitudes towards the use of mobile technology for learning

S/No	Item	Strongly Disagree (%)	Disagree (%)	Agree (%)	Strongly Agree (%)
1	The use of mobile technology motivates undergraduates to perform excellently in their academics	21 (6.2%)	101 (29.8%)	92 (27.1%)	125 (36.9%)
2	Undergraduates are eager to learn more about the topics been taught in class with the use of mobile technology.	50 (14.7%)	36 (10.6%)	233 (68.7%)	20 (5.9%)
3	There is increase in the undergraduate's performance since the integration of blended learning.	53 (15.6%)	120 (35.4%)	112 (33%)	54 (15.9%)
4	Undergraduates put in a great deal of effort to learn to use the social networking application of participating in classroom discussions.	56 (16.5%)	50 (14.7%)	88 (26%)	145 (42.8%)
5	Undergraduates primarily use mobile technology for gaming, chatting, and socializing.	30 (8.8%)	95 (28%)	141 (41.6%)	73 (21.5%)

The result on table 3 on undergraduates' attitudes towards the use of mobile technology for blended learning showed that, 215 respondents (64%) agreed that the use of mobile technology motivates undergraduates to perform excellently in their academics, while 122 representing 36% disagreed with this statement. Also, undergraduates are eager to learn more about the topics being taught in class with the use of mobile technology with 253 (74.6%) respondents supporting this claim. However, 51% of the total respondents disagreed that there is increase in the undergraduates' performance since the integration of blended learning. 233 respondents (68.8%) agreed that undergraduates put in a great deal of effort to learn to use the social networking application of participating in classroom discussions, while 106 respondents (31.2%) disagreed with this statement. Also, 214 (63.1%) respondents agreed that undergraduates primarily use mobile technology for gaming, chatting and socializing, while 125 (36.8%) respondents disagreed with this claim.

It can be deduced from Table 3 that the use of mobile technology motivates undergraduates to perform excellently in their academics, thereby making them eager to learn more about the topics taught in class using blended learning. Furthermore, undergraduates primarily use mobile technology for gaming, chatting and socializing, instead of learning.

Hypothesis Testing

H_{01}: *There is no significant difference in the undergraduates' attitudes towards the use of mobile technology for blended learning based on gender*

Table 4:

Undergraduate's attitudes towards the use of mobile technology for blended learning

Variable	N	X	SD	Df	t	Sig	Remarks
Male	98	3.11	0.895	292			
					2.86	0.511	Accepted
Female	102	3.03	0.884				

Table 4, revealed that df =292, t = 2.86, p = 0.511 This means that the hypothesis was accepted. This was as a result of t-value of 2.86, resulting in 0.511 p value greater than 0.05 significant alpha level. By implication, the stated hypothesis established that there is no significant difference in the undergraduate's attitudes towards the use of mobile technology for blended learning based on gender.

Discussions

This study investigated undergraduates' perception and attitudes towards the use of mobile technology for blended learning in University of Ilorin. It examined the perception and attitude of undergraduates towards the use of mobile technology for learning, and the influence of gender on undergraduates' attitudes towards the use of mobile technologies for blended learning.

Findings showed that the overall learning activities and assignments of courses taught with mobile technology met the undergraduates' learning expectation as the learning activities and experiences are found to be more interesting, fun and engaging. Also, undergraduates can easily view course materials on their mobile phones which make school work easily accessible and interesting. Furthermore, blended learning through mobile technology helps in retaining knowledge and understanding the course content better. The findings further established that using mobile technology for blended learning is not time consuming, not expensive and not very tasking. Communication between undergraduates and lecturers is a vital factor in blended learning environment, mobile technology creates an easy communication between undergraduates and lecturers. This is consistent with the findings of Cobcroft, et. al. (2006) and Pamela (2011) who opined that mobile technologies gives undergraduate the opportunity to undertake 'user-led education', collaborate with peers and afford creative use and instant access to a wealth of online resources.

The second finding in this study showed that undergraduates showed positive attitudes towards the use of mobile technology for blended learning as they can easily view course materials on their mobile phones which make school work easily accessible and interesting. Undergraduates sees mobile technology as a tool that motives them to perform excellently in their academics. Despite this, the general usage of mobile technology is not tailored towards learning.. Rather, it is primarily used for gaming, chatting and socializing, instead of learning. It is of note that blended learning through mobile technology helps in retaining knowledge and understanding the course content better. This is in line with the findings of Svanaes (2013) who expressed that undergraduates used mobile technology as a tool to facilitates access to personalized learning content which aids learning outside traditional classroom settings. The third finding

indicated that there is no significant difference in the undergraduates' attitudes towards the use of mobile technology for blended learning based on gender.

Conclusion and Recommendation

It was concluded that mobile technology has the potential to increase undergraduates' learning pace, accessibility and communication in a blended learning environment. Mobile learning facilitates learning as it enables the undergraduates view course materials easily, access online materials and makes learning interesting. Furthermore, undergraduates that were primarily using mobile devices for gaming, chatting and socializing instead of learning, have a positive attitude towards the use of mobile devices for learning. Finally, gender has no influence on the undergraduates' attitudes towards the use of mobile technology for blended learning. The study therefore recommended that: i) Universities should increase the schools' internet bandwidth in order to foster effective blended learning environment and; ii) Lecturers should be encouraged to engage the undergraduates in a blended learning environment.

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