International Journal of Computer Engineering and Information Technology

VOL. 9, NO. 3, March 2017, 41–46
Available online at: www.ijceit.org
E-ISSN 2412-8856 (Online)

Massive Open Online Courses Awareness and Adoption by Nigeria University Students (A Case Study)

Temilade Adebo[1] and Titilayo Ailobhio[2]

[1] Department of Computer Science, Federal University Lafia, Nasarawa State, Nigeria

[2] Department of Mathematics, Federal University Lafia, Nasarawa State, Nigeria

[1]temilade.adebo@fulafia.edu.ng, [2]isaac.titilayo@fulafia.edu.ng

ABSTRACT

The emergence of Massive Open Online Courses (MOOC) as an electronic learning trend, and its huge enrollment across the globe, inspired this study. This study was carried out to investigate the e-learning participation among Nigerian University students, determining the level of awareness and extent of usage of Massive open online courses (MOOCS) and other e-learning platforms. The study was carried out in Federal University Lafia Nasarawa State Nigeria with a total of 126 respondent's cuts across the entire departments in the University. Descriptive statistics such as frequency counts and percentages as well as inferential statistics such as Liker- type scale and analysis of variance was employed in analyzing the study. It was discovered in the study that MOOC participation is still very low due to lack of awareness and inadequate infrastructure for internet connectivity. The study therefore suggests methods for improvement for blended and improved learning experience.

Keywords: *Blended learning, E-learning, Massive open Online Courses.*

1. INTRODUCTION

The role of Information and communication technology (ICT) to the development of any nation in recent times cannot be over emphasized. ICT has brought significant changes to all aspects of human social-economic activity, in which the educational sector is not left out.

Notable changes often occur as technology advances, with the inception of the electronic learning paradigm, there have been improvements in the qualities of teaching, of learning, accessibility, and efficiency in higher education through access to resources, services, remote exchanges and collaborations.

Electronic learning whose acronym is e-learning can simply be explained as learning online or offline through CD / DVD type coursework instead of the conventional classroom teaching and learning. It comprises of a wide range of technologies, majorly the Internet and computer. According to [6] the evolution of technology and new learning experiences have always been closely related, therefore the e-Learning revolution emerged from other educational revolutions such as; the reading and writing invention, upspring of the Scholar/ teacher profession, print technology development and electronic technology development.

According to [2] the word e-learning was first used in October 1999, during a CBT Systems seminar in Los Angeles, when a strange new word was used for the first time in a professional 'e-Learning' environment. Associated with such expressions as online learning or virtual learning, the word was meant to qualify a way to learning based on the use of new technologies allowing access to online, interactive and sometimes personalized training through the Internet or other electronic media such as intranet, extranet, interactive TV, CD-Rom, etc. in order to develop competencies while the process of learning is independent of time as well as place.

Massive Open Online Courses (MOOC) is a platform among the many e-learning platforms. MOOC aimed at large-scale interactive participation and open access via the web. MOOC differs from Open Courseware and Open Education Resource in that it opens up opportunities for learners to participate in learning activities, rather than making resources or courseware openly available [1].

MOOCs provide participants with course materials that are normally used in a conventional education setting such as, lectures, videos, study materials, examples and

problem sets. MOOCs also offer interactive user forums, which are very useful in building a community for students, teaching assistants and professors.

The first MOOCs emerged from the open educational resources (OER) movement [29]. The name MOOC originated in 2008 by Dave Cormier of the University of Prince Edward Island and Senior Research Fellow Bryan Alexander of the National Institute for Technology in Liberal Education in response to a course called Connectivism and Connective Knowledge (also called CCK8). CCK8 highlights that knowledge and learning came from a network of relationships or connections.

CCK8, was led by George Siemens of Athabasca University and Stephen Downes of the National Research Council, they used different platforms including Facebook groups, Wiki pages, blogs, forums and other resources to engage students in the topics.CCK8 was offered by25 tuition-paying students in Extended Education at the University of Manitoba, Canada and about 2200 online students from the general public who took the course for free. The course content was free and open through RSS feeds, which meant that anyone could join and modify the content through collaborative tools without paying.

In 2012, another MOOC experiment caught the attention of academics. Two Stanford Professors Sebastian Thrun and Peter Norvig offered Introduction to Artificial Intelligence for free online. It was designed to resemble real classroom experience and offer high-quality classes for everyone. More than 160,000 students in over190 countries signed up, and for the first time, an open online course was truly massive. This led Thrun and Norvig to build a new business model for online knowledge, hence Udacity was born.

Subsequently, other MOOCs came forth. Other professors adapted Udacity's idea using their own resources and in one year, two more American start-ups for MOOCs appeared Coursera and EdX.

The Open University is building its own MOOC platform. Also, Future features universities from the United Kingdom. There are many other independent MOOC initiatives coming up. Such include theOpen2Study in Australia, iversity in Germany, Canvas and Udemy.

Although these MOOC start-ups might have different goals, the common thing between them is the connection between learners and teachers. According to [23] extrapolating current activities and practices, the continued use and development of ICTs within education will have a strong impact on: What is learned, how it is learned, when and where learning takes place, who is learning and who is teaching. With the emergence of MOOCs, academic knowledge will never be seen the same. More knowledge and information can be easily reduced into small bits and rapidly transmitted to anywhere in the world, to anyone.

2. STATEMENT OF PROBLEM

Despite the global awareness of the impact of ICT in education and the usage of e-learning for higher education, it was found out that there was little empirical research in the context of Nigeria. Although, [17]. mentioned that different researchers from different parts of the world have explored different attitudes toward e-learning in their research, but the evidence of the usage of MOOC by the Nigerian University students is limited. One begins to wonder if the Nigerian students are conversant with MOOC. Some of the questions that came to mind include the following:

- Are the students of Federal University Lafia aware of e-learning programs?
- What proportions of the students are aware of the use of MOOC?
- What is the level of their awareness?
- Have any of them participated in the use of MOOC?
- To what extent have they participated in using MOOC?
- What are the barriers to their usage of MOOC?

The responses to the questions posed above will reflect the level of awareness and usage of MOOC among the students of Federal University Lafia. Based on the findings, suggestions will be made on how to increase the awareness and usage of MOOC in the Nigerian Universities.

Hence, the study aims at determining the awareness and usage of MOOC among Nigeria University students using Federal University Lafia as a case study.

The specific objectives include to:

- Ascertain the awareness of e-learning programs by Federal University Lafia students
- Determine the participation of University Students in e-learning programs
- Determine the extent of awareness of Massive Open Online courses by University students
- Determining the extent of usage of Massive Open Online courses by University students
- Investigate the barriers to the usage of MOOC

3. METHODOLOGY

The study was carried out in Federal University Lafia. The University which is located in Nasarawa State North Central Nigeria, was established in 2011 with eight other Federal Universities to expand access, and improve quality of higher education in Nigeria as well as ensure equal distribution of higher education amenities and opportunities across the country. The University as at the

time of this study has three faculties with a total of 13 departments.

All the students of Federal University Lafia formed the population for the study. However a multi-staged random technique was used in selecting the respondent for the study. The first stage involved a purposive selection of all the faculties in the University these are Faculties of Arts, Science and Social Science.

The second involved a random selection of three departments from each faculty. The third stage was the random selection of students from each department, thus the study covered three faculties, nine departments and 126 respondents.

The data collected was analyzed using descriptive statistics such as frequency counts and percentages as well as inferential statistics such as Liker- type scale and analysis of variance.

4. RESULT AND DISCUSSION

There was a random selection of three departments from each of the three faculties in Federal University Lafia Nigeria, and there was the random selection of students from each department, thus the study covered three faculties, nine departments and a total of 126 respondents. Data collected from a total of 126 respondents were stored in a computerized database, was coded and analyzed using Statistical Package Software for Social Sciences (SPSS version 21) software. Data were sorted into the same areas as asked for in the questionnaire. Frequency count, percentage distribution and mean were used for descriptive statistic.

4.1 Demographic distribution of respondent

The summary of the demographic distribution of the study participants is illustrated in (figure 1); responses came from 42.9% female and male 57.1% cut across all level and faculty in the University. The largest numbers of participants were students in the age group 21 – 25, which accounted for 58.7%.

4.2 Demographic Characteristics of Respondents

		f	%
Age	15-20 years	27	21.4
	21-25 years	74	58.7
	26=30 years	14	11.1
	> 30 years	2	1.6
Sex	male	72	57.1
	female	54	42.9
Religion	Islam	15	11.9
	Christianity	108	85.7
	African traditionalist	1	.8
Faculty	science	55	43.7
	Art	33	26.2
	Social science	33	26.2
Level	100L	1	.8
	200L	36	28.6
	300L	14	11.1
	400L	74	58.7

Fig. 1

4.3 Access to Internet Connectivity

Respondent's access to internet connectivity was subjected to a two- point scale of Yes and No as shown in Figure 2 below. 68.3% having a personal computer while 31.7% do not possess a personal computer. 52.4% have access to internet facility on campus while 46.8% could not access the internet while on campus. 57.1% have access to internet at home while 42.9% do not have home internet. There is more access to the internet by the respondents' while at home than on campus.

4.4 Access to Internet Connectivity

	yes		No	
	F	%	F	%
Do you have a personal computer?	86	68.3	40	31.7
Do you have access to internet facility on campus?	66	52.4	59	46.8
Do you have access to internet facility at home?	72	57.1	54	42.9

Fig. 2

4.5 Internet Connectivity Device

Respondent's internet connectivity was categorized into the use of modem, mobile phone, the use of cyber cafes and the use of tablet. 15.1% make use of modem, 5.6% use cyber café,5.6% use Tablet and 72.2% use mobile phones. Majority of the respondent have access to the internet using their mobile phones.

4.6 Devices for Internet Connectivity

	F	%
Modem	19	15.1
Mobile phone	91	72.2
Cyber cafe	7	5.6
Tablet	7	5.6

Fig. 3

4.7 Respondent's Purpose of Using the Internet

The respondent's purpose of using the internet was subjected to a four-point scale of very often, often, not

often and not at all with the score ranging from 4-1, in descending order, very often scoring four point total score of variable was sort.

For educational purpose usage,52.4% out of the respondent use the internet very often, 38.1% use it often, 7.1% do not use often and 1.6% do not use at all.

In Social networking usage, 50% use the internet very often, 25.4% use the internet often, 12.7% do not use often and 1.6% do not use at all.

In internet usage for news, 42.1% use the internet very often, 31.0 use the internet often, 15.1% do not use often and 3.2% do not use at all. More than 50% of the respondents use the internet for educational purpose as compared to social networking and news.

4.8 Reasons Respondents Use the Internet Resource

	Very often		Often		Not often		Not at all	
	F	%	F	%	F	%	F	%
Educational purpose	66	52.4	48	38.1	9	7.1	2	1.6
Social networking	63	50.0	32	25.4	16	12.7	2	1.6
News	53	42.1	39	31.0	19	15.1	4	3.2

Fig. 4

4.9 Research Question 1: Do You Use Any Other Resource Online For Personal Study Asides The One Given By The Lecturer In Class?

73.0% of the students use some online education resources asides the teaching materials given by the instructor in class while 26.2% do not use any form of online education resources, justifying that majority of the students use the internet frequently for educational purpose.

4.10 Research Question 2: Are You Aware Of Any E-Learning Programs And Massive Open Online Courses?

Awareness of e-learning programmes and massive open online courses was subjected to a three-point scale of Yes, No and Not sure. For e-learning program awareness, 57.1% of the respondents were aware of e-learning programs while 25.4% were unaware.

MOOC awareness level was subjected to a four point scale of High awareness, average awareness, low awareness and not sure with the score ranging from 4-1, in descending order, with High awareness scoring four point. Although 21.4% claimed to be aware of MOOC courses, the level of awareness was not stated by any of the respondent, leaving blank spaces on the questionnaire. It could be inferred that majority of the respondents are not aware of MOOC despite their awareness about online educational resources and e-learning programs.

4.11 Research Question 3: Have You Participated In Any Massive Open Online Course Before?

16.7% notified participation in MOOC but the level of participation was not stated as the three point scale of High extent of participation, average extent of participation and low extent of participation column were left blank and the MOOC course that was registered to or taken was also not stated. 7.9% though not sure noted that they might have somehow registered to a MOOC course in the past. It can therefore be inferred that none have registered to or participated in any MOOC. Also, 62.7% showed interest in participating, 13.5% do not wish to participate while 8.7% are not sure of participation.

4.12 Research Question 4: What are the reasons for non-participation in MOOC?

A number of reasons that could hinder participation were given for the respondents to choose from which included; inadequate infrastructure, lack of personal computer, lack of interest , lack of power supply and poor internet connectivity. 19.0% couldn't participate due to infrastructural problems, 30.2% do not possess a personal computer, 19.0% do not have interest while 17.5% complained of lack of power supply, 15% poor internet connectivity, and 5.6% inadequate knowledge of e-learning programmes. Other reasons state include; inadequate knowledge of MOOC and inadequate information on how to go about registering to a MOOC course.

Reasons for non-participating in MOOC						
Inadequate infrastructure	24	19.0	2	1.6	-	-
I don't have a personal computer	38	30.2	2	1.6	-	-
Lack of interest	24	19.0	-	-	-	-
Lack of power supply	22	17.5	-	-	-	-
Poor internet connectivity	19	15.1	1	0.8	-	-
Inadequate knowledge of e-learning programmes	7	5.6	-	-	-	-

Fig. 5

5. IMPLICATIONS

The students are aware of the need to use additional resources for individual learning, asides the one given by the instructor in class, and majority are aware of the existence of online educational resources and e-learning programs, but awareness of MOOC which is a global trend that has attracted diverse student with enormous benefits for students [19]. is still very low due to reasons which were supported by [8]. [15]. [31]. [10]. and [14] .in their study.

6. CONCLUSION

The study showed that asides Nigerian Universities such as the National Open University of Nigeria (NOUN) which has designed a MOOC for its distance learning but not yet being implemented, majority of other Nigerian Universities are not participating in MOOCs and the awareness of MOOCs is still low among the students due to inadequate infrastructure caused by high cost of hardware and internet facilities.

7. RECOMMENDATION

Government at all levels should endeavor to improve electricity supply in the country and assist Universities to support ICT development, ensuring reliable, accessible and responsive infrastructure; by supplying low cost PCs with ample battery life to scale the hurdle of epileptic power supply and facilitating inexpensive technologies that would reduce bandwidth and allow schools connect to the internet. Universities should hold more training courses, seminars and workshops on e-learning and MOOC benefits for students for proper awareness, high level of proficiency and effective use. Students should be encouraged to participate in e-learning by getting engaged with some of the many available platforms to complement the classroom learning.

REFERENCES

[1] L. Allison, "Understanding Massive Open Online Courses." Edtech Notes, 2013.

[2] K. Abhijit , "E-Learning Methodologies, Strategies and Tools to implement lifetime education anywhere anytime." International Journal of Innovative Research in Advanced Engineering (IJIRAE), 2014, pp 193-201.

[3] V. Brian, "Massive Open Online Courses (MOOCs): A primer for universities and college board members. Washingdon DC: Association of governing boards of universities, 2013.

[4] M. Debbie "Leap the College Readiness Gap: The Best MOOCs for High School Seniors." MOOCS news and reviews, May 07, 2013.

[5] D. John "Making Sense of MOOCs: Musings in a Maze of Myth, Paradox and Possibility." 2012.

[6] J. Marques, "A short History of MOOCs and distance learning." MOOC News and Reviews, April 07, 2013.

[7] F. Kenneth, "There is no business model for MOOCs yet." The Wall street journal, October 15, 2013.

[8] M. Ekundayo and J. Ekundayo. "Capacity constraints in developing countries: A need for more e-learning space? The case of Nigeria." Ascilite. Auckland, 2009, pp 243-255.

[9] M.Wartell, "A New Paradigm for Remediation: MOOCs in Secondary Schools." Educause review, November 01, 2012.

[10] W. Olatokun and A. Mala "Assessing Students Satisfaction With an E-Learning System: Learning System: The Case Of National Open University Of Nigeria." African Journal of Computer science and ICTs pp 127-142.

[11] J. Mann, "MOOCs go to K12: Higher ed trend expands to high schools." District Administration, August 2013.

[12] J. Matt, "Happily Ever After: MOOCs and Industry Unite for Professional Development." The evolllution, July 2013.

[13] G. Michael, "Massive Open Online Courses." EUA Occasional papers, January 2013.

[14] R. Murtala, "Application of Massive Online Open Courses in Tertiary." International Journal of Emerging technology and advanced engineering, 2015, pp 81-87.

[15] S. Nwana, " Challenges in the applications of e-learning by secondary school teachers in Anambra, Nigeria." African Journal of Teacher Education, 2012, pp 1-9.

[16] C. Okiki," Information technology support for an e-learning environment at the University of Lagos Nigeria." Library Philosophy and Practice, 2011.

[17] G. Olasina, "Student's e-Learning/m-Learning Experiences and." IATUL Conferences. Purdue e-Pubs, 2012.

[18] P. O'Prey, "Massive Open Online Courses: Higher Education's digital moment." Universities UK, May 2013.

[19] P. Guo and K. Reinecke, "Demographic Differences in How Students Navigate Through MOOCs." Association of Computer Machinery, 2014.

[20] E. Rip, "Coursera Takes A Big Step Toward Monetization, Now Lets Students Earn "Verified Certificates" For A Fee." Tech crunch, January 08, 2013.

[21] R. Rivard, "Free to profit." Inside Higher ED, April 08, 2013.

[22] M. Robinson, "What It's Like to Teach a MOOC (and What the Heck's a MOOC?)." The Atlantic:Tech, July 08, 2012.

[23] O. Ron, "The role of ICT in higher education for the 21st century: ICT as a change agent for education." HE21 Conference. 2002.

[24] G. Siemens, "MOOCs are really a platform." Elearnspace, July 25, 2012.

[25] Techopedia. "Massive Open Online courses."

[26] B. Tricia, "Massive open online courses, known as MOOCs, could be the future of education — if students start taking them, and if they can truly learn from them." MSN News, July 09, 2013.
[27] S. Uvalic-Trumbic, "MOOcs mistaking brand for quality." University World news, February 06, 2013.
[28] M. Weller, "MOOCs as first year undergrad replacement." The ED Techie, October 18, 2013.
[29] Wikipedia. "Massive Open Online Courses." December 15, 2013.
[30] P. Li. Yuan, "MOOCs and Open Education: Implications for higher education". 2013.
[31] M. Yusuf, "Appraising the role of information communication technology (ICT) as a change agent for higher education in Nigeria." International Journal of Educational Administration and Policy studies, 2013, pp 177-183.

AUTHOR PROFILES:

Temilade Adebo: obtained a Bachelor of Science degree in Computer Science in 2011 at Bowen University Iwo, Nigeria and Master of Science degree in Information Systems in 2014 at Eastern Mediterranean University Famagusta mersin Turkey. She is currently an Assistant lecturer in the Department of Computer Science, Faculty of Science, Federal University Lafia, Nasarawa State, Nigeria and is involved in Teaching and Research in the University. Her research interests are in Information systems, Human computer interaction and e-learning. She's a member of the Nigerian Computer Society.

Titilayo Ailobhio: obtained a Bachelor of Science degree in Statistics in 2012 at Nasarawa State University Keffi, and Master of Science degree in Statistics in 2015 at University of Ilorin, both in Nigeria. She is currently an Assistant lecturer in the Department of Mathemetics, Faculty of Science, Federal University Lafia, Nasarawa State, Nigeria and is involved in Teaching and Research in the University. Her research interest is Econometric and Data mining.