Massive Open Online Course (MOOCS) For Life-Long Learning: Implication for Higher Education

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Abstract: **This study was carried out on Massive Open Online Course (MOOCs) for life-long learning: implication for higher education. Three objectives of the study, three research questions and three null hypotheses were used for the study. The study adopted a descriptive survey design. The population of the study comprised of the entire postgraduate diploma in Education (PGDE) students in University of Port Harcourt for 2018/2019 academic session which is seventy-four students (74) while the sample of the study was 74 students using census sampling technique. Mean scores, Standard deviation and Analysis of Variance (ANOVA) were the statistical tools used in the study. It was found that PGDE students are aware of the MOOCs as an online learning tool for life-long learning. Furthermore, the study also revealed that PGDE students have positive attitude on the use of MOOCs as an online learning tool. In terms of constraints, respondents generally agreed that there is enough constraint on the use of MOOCs for life-long learning. Based on these findings, the study recommends that the use of MOOCs should be adopted as a learning platform for faculty of education students.**

Key Words: **Massive Open Online Course (MOOCs); Life-long Learning, Teacher Education.**

I. INTRODUCTION

Education is the backbone of every successful nation and the source of manpower development of every individual in this modern society. The educational system is facing a lot of innovation and changes especially in this present 21st century. This innovation comes either as a sustainable or disruptive innovation which in turn affect the way of doing things including lesson delivery, mode of presentation, sitting arrangement of both teachers and students in class etc. this has also changed the role of teachers from being the only source of knowledge to a facilitator who only guide in the learning process, likewise the role of students from being passive in the class to being actively engaged during their learning process.

Massive open online course (MOOCs) as a disruptive innovation in the educational sector has provided the learners with the opportunities of learning at their own pace even without the physical presence of the teacher. For over five years after MOOCs was introduced it influenced the traditional way of teaching and learning positively by acting as a supplement for the life-long learners so as to help them update their professional and personal skills which aim at improvement of performance.

Massive Open Online Course (MOOCs)

The term massive open online course (MOOCs) was first introduced by Dave Cormier in 2008 through the connectivist point of view. It is an online learning platform that supports collaboration, communication, critical thinking and creativity. It offers learners with various learning opportunities to learn at their own pace and is flexible in nature due to its affordances that helps learners to make choices of what and how to learn. In MOOCs learners can learn through visuals, audio, audio-visuals and prints depending on the learners learning styles. Since its inception MOOCs has become so popular among all the online courses globally. The rationale behind the introduction of MOOCs to higher education was to open up education and provide free access to university education for everyone to participate though Wiley (2012) opined that ambiguities of MOOCs may pose a threat to the future development of open educational resources. MOOCs often emphasized on the open-access features like open licensing of content, structure and learning goals, and promotion of learning resources. MOOCs supplement the traditional course materials such as film lecture, reading and face-to-face learning approach by providing inter-active user forum to support community interactions among learners (Zamsky, 2014).However, the development of MOOCs is linked to the idea of openness in education which aim at knowledge sharing and the desire to learn without geographical constraints. Since the introduction of MOOCs into higher education, the higher education has faced some challenges such as rapid increment of demand for collaboration among institutions, queries from educational stakeholders on the setting and goals of MOOCs and the number of students' enrolment on the programme.

II. CHARACTERISTICS OF MASSIVE OPEN ONLINE COURSE (MOOCS)

In a related studies Waard, and Wilson (2001) highlighted some characteristics of MOOCs as an online course as follows:

Openness: Openness of information flow, organization, complexity and connectedness are some of the vital values of MOOCs. Openness in term of educational resources, technological software and networking learning environment. This implies open source of registration to all participants including the method of assessment.

Barriers to persistence: As an online course time constraint has posted a major barrier especially for the life-long learners who are already in an established profession. Kop et al (2001) observed the rate of high drop out from the participants as a result of time factor in the new learning environment. Also the inability of the participants meeting up with the new trends of technology used in the MOOCs platform still serves as a major barrier.

Models: one of the affordances of MOOCs as an online course is its multiple models which differs from the conventional method of teaching and learning in terms of assessment, content delivery, approach and mode of presentations (Rodriguez, 2012).

Life-long learning

Life-long learning as an educational concept is broadly defined by various authors. Delor (1996) defined life-long learning as a type of learning that is pursued throughout a person's life time. It is a type of learning that is flexible, divers and available at different times and locations. This type of learning promotes learning beyond the four walls of the classroom since it involves various types of learners and their different learning styles. Delor based his definition on the four pillars of education which are learning to know, learning to do, learning live together with others and also learning to be.

The European Commission (2001) defined life-long learning as a continuously supportive learning process which motivate and empowers individuals to acquire all forms of knowledge, skills, values and understanding they need for their presents and future life and also the ability to apply them in their daily life activities. The four supportive objectives of life-long learning include personal fulfilment, active citizenship, social inclusion and employability (Watson 2003). Life-long learning can also be seen as a holistic view of education which recognises learning from different dimensions and environment. Skolverket (2000) also opined that life-long learning recognises individual learning throughout their life-time either in a formal or informal setting. This is because knowledge and skills can become absolute if it is not updated continuously through life-long. This can instil creativity, initiative and responsiveness in people which enables them to show adaptability in the society through the acquired skills in managing, communication and negotiating situations. UNESCO Education strategy 2014-2021 also emphasises the need for lifelong learning with the aim of meeting the divers' need of all age group of learners including the acquisition of basic literacy technical skills, adult learning and education etc.

Teacher Education

Dictionary.com defined teacher education as the policies, procedures and provisions designed to equip the in-service teachers with knowledge, attitude, behaviour and skills that they need to be effective in their teaching profession. Watson (2003) opined that teacher educator can also be called teacher trainer whose responsibility is to help other people acquire the knowledge, competences and attitude they required to be relevance in the teaching profession. This is done with respect to the various specialties available in the teaching profession. Teacher educator as seen by scholars are higher education professionals whose major responsibility is to prepare the beginners in the profession at the various institutions such as universities, colleges etc. The in-service teacher here are refers to those who are still undergoing the training in other to become professional teachers. The training involves the instructional contents which are embedded in the syllabus for their training in the course of the programme.

The study was anchored on two theories; theory of connectivism and engagement theory. Connectivism theory was propounded by George Siemens and Downes in 2005. The theory believes that learning is by connection and does not reside in any individual rather it is distributed through connections of network. Connectivism is a digital age theory that focuses on technical effort on how people operate, communicate and learn. Anderson (2005) opined that connectivism is a learning theory that believes that learning is a process of creating connections and enlarging network around the globe. From the connectivist perspective learners learn better when they use internet technologies such as social media to learn and share information. Applying this theory to this study implies that when students are connected to online resources and platform like MOOCs learning becomes easy and productive with the aim of knowledge creation.

Engagement theory was propounded by Shneidenman Kearsley and Kearsley (1999), the theory believes that learning is by engagement. The theory is a model of learning in a technology-based environment which embraces many elements from other theories. Engagement theory based its assumptions on self-determination by learners as they participate in problem solving. Engagement theory emphasises the positive role of technology in human interaction. Schneiderman (1999) observed that when learners are engaged in their learning activities which involve active cognition process like critical thinking, creativity, reasoning and problem solving it prompt them to make positive contributions to their learning. Relating this theory to this work implies that every learner should be meaningfully engaged in their learning by becoming an active participant in the learning platform. In this case MOOCs has the ability to accommodate and engage any learner who is willing fully ready to participate in the platform for learning with a free registration and course materials for life-long learning and improvement in performance.

III. STATEMENT OF THE PROBLEM

Massive open online course (MOOCs) emerges as educational resource platform for learning since 2008. This draws the attention of various researchers, students and resource persons in different fields of studies to be engaged in this platform. Despite the general awareness that the information communication technology in education has created since its

inception for higher education most people tend to pay little or no attention to the use of MOOCs as an instructional platform for learning. Therefore this study intends to find out the how massive open online course affect life-long learning in higher education in Nigeria.

Purpose of the study

The aim of this study is to find out the effect of Massive open online course (MOOCs) for life-long learning on higher education. Specifically, the study intends to:

1. Ascertain the level of awareness of post graduate male and female students on the use of MOOCs for life-long learning.
2. Ascertain the attitude of post graduate male and female students on the use of MOOCs for life-long learning.
3. Find out the possible constraints of using MOOCs for life-long learning by post graduate male and female students.

Research Questions

1. To what extent are the post graduate male and female students aware of the use of MOOCs for life-long learning?
2. What are the attitudes of post graduate male and female students on MOOCs for life-long learning?
3. What are the possible constraints on the use of MOOCs by post graduate male and female students for life-long learning?

Research Hypotheses

The following null hypothesis guided the study

1. There is no significance difference in the awareness of male and female post graduate students on MOOCs and their usage for life-long learning.
2. There is no significance difference between the attitude of post graduate students and the use of MOOCs for life-long learning.
3. There is no significance difference between the constraints on the use of MOOCs and the quality of their learning.

IV. METHODOLOGY

The study adopted a descriptive survey research design. A sample of seventy-four (74) post graduate diploma (PGDE) from the Faculty of Education University of Port Harcourt, Rivers state. (Source: Office of the director of institute, 2019). A structured Questionnaire was used as instrument for data collection tagged Post graduate Students Questionnaire on MOOCs (PSQM). Validity of the instrument was done by experts in the field of Educational technology, and the reliability was established using cronbach's Alpha Analysis and a reliability coefficient of 0.85 was obtained. The data obtained were analysed using mean, standard deviation, t-test

while the formulated hypotheses were tested at .05 level of significance.

V. FINDINGS

Research Question one

To what extent are the post graduate students aware of the use of MOOCs for life-long learning?

Table 1.1: Extent of post graduate students awareness of MOOCs

S/N	Extent of awareness	Mean	Standard deviation	Remark
1	I am aware of Massive Open Online Course (MOOCs) as an online learning platform.	3.60	0.59	Agree
2	Massive Online Learning Course (MOOCs) is an innovation in higher education.	3.53	0.54	Agree
3	MOOCs is a regular way of learning.	3.52	0.53	Agree
4	Am very familiar with Massive Online Learning Course (MOOCSs).	3.58	0.52	Agree
5	Frequent use of MOOCs enhances critical thinking abilities.	3.62	0.49	Agree
	Grand Mean	3.57		

From table 1, all the items were agreed upon because they were up to the criterion means of 2.50. This means that post graduate students were actually aware of the use of MOOCs as an online platform, as an innovation in higher learning, as a regular way of learning and also as that which enhances critical thinking. In all, a total grand mean of 3.57 was realized. This was also above the criterion mean of 2.5 meaning that Post Graduate students are quite aware of the use of MOOCs in learning.

Hypothesis one: There is no significance difference in the awareness of male and female post graduate students on MOOCs and their usage for life-long learning.

Table 1.2: T-test Analysis of the difference between the awareness of male and female PG students on the use of MOOCs

Gender	N	$\bar{x}$	SD	Df	t-cal	Alpha	Sig	Result
Male	33	13.42	3.00		-1.47	0.05	2.05	Not Significant
Female	41	12.89	3.03	72				

Table 1.2 reveals the mean scores for male as 13.42 while female is 12.89. From the means scores, it is evidenced that male students had higher awareness level than the female students. Calculated t reveals sig value of 2.05. hence, since sig (p=2.05>0.05) is greater than the chosen alpha of 0.05, the null hypotheses is accepted meaning that there is no significance difference in the awareness of male and female post graduate students on MOOCs and their usage for life-long learning.

Research Question Two: What are the attitudes of male and female post graduate students on MOOCs for life-long learning?

Hypothesis Two: There is no significance difference between the attitude of male and female post graduate students and the use of MOOCs for life-long learning.

Table 1.3: 2-way ANOVA analysis of the Attitude of PG students towards MOOCS

Gender	Attitude	N	$\bar{x}$	Std. D
Male	Positive	21	16.60	22.39
	Negative Total	12 33	12.23 14.12	3.29 11.85
Female	Positive	24	13.02	8.05
	Negative Total	17 41	10.27 23.29	5.62 10.78
Total	Positive Negative	45 29	14.81 11.25	13.85 4.53

Test of Between-subject Effect (ANOVA)

Source	Type IV sum of sq.	df	Mean Sq	F	∝	Sig.	Result
Cor. Model Intercept Gender Attitude Gender/ Attitude	16835.98 292302.05 3128.89 3016.10 6194.61	3 1 1 1 2	3367.19 292302.05 1564.44 3016.10 3097.20	42.44 3684.51 19.72 38.02 39.04	0.05	0.000 0.000 0.000 0.000 0.000	Signifi-cant reject Ho
Error Total	14279.86 550309.00	71 72	79.33				

From the analysis in the table above, the mean scores of male PG students with positive and negative attitude towards the use of MOOCS were 16.60 and 12.23 respectively. From the mean score, it is indicative that male students has positive attitude towards the use of MOOCS. Also, female had mean of 13.02 for positive attitude and 10.27 towards the use of MOOCS. For the total scores, it is indicated that those with positive attitude had mean of 14.81 while those with negative attitude were 11.25. This means that generally, PGDE students has positive attitude towards the use of MOOCS.

Research Question Three: What are the possible constraints on the use of MOOCs by post graduate students for life-long learning?

S/N	Constraints on the use of MOOCs by post graduate students for life-long learning			
14	MOOCs can have negative influence on students' productivity.	3.84	0.39	Agree
15	MOOC is a distraction to academics.	2.40	0.75	Disagree
16	Page download are slow.	3.60	0.59	Agree
17	I experience technical expression, which I find difficult in it while using MOOC.	3.59	0.43	Agree
18	MOOCs promotes plagiarism among learners	3.74	0.45	Agree
19	Images always appear blond in MOOC documents.	2.39	0.81	Disagree
20	I upload files without any problem while using MOOC.	2.32	0.81	Disagree
	Grand mean	3.13		

From the table items 14, 16, 17 and 18 with means values of 3.84, 3.60, 3.59 and 3.74 respectively were agreed upon because they were u to the criterion mean of 2.50. on the other hand, items 15, 19 and 20 with means values of 2.40, 2.39 and 2,32 respectively were disagreed upon because they were not up to the criterion mean of 2.50. on the whole, a total grand mean of 3.13 was realized. This indicates that there are constraints in the use of MOOCS by PG students.

Hypothesis Three: There is no significance difference between the constraints on the use of MOOCs and the quality of their learning as perceived by male and female PG students in university of Port Harcourt.

Table 1.4: T-test Analysis of the difference between the perception of constraints between male and female PG students on the use of MOOCS

Gender	N	$\bar{x}$	SD	Df	t-cal	Alpha	Sig	Result
Male	33	14.31	2.31			0.05		
Female	41	9.03	3.02	72	0.46		0.042	Significant

Table 1.4 *reveals* the mean scores for male as 14.31 while female is 9.03 from the means scores, it is evidenced that male students had higher perception on the constraints in the use of MOOCS. Calculated t reveals sig value of 0.04. Hence, since sig (p=0.04<0.05) is less than the chosen alpha of 0.05, the null hypotheses is rejected meaning that there is a significance difference between the constraints on the use of MOOCs and the quality of their learning as perceived by male and female PGDE students in university of Port Harcourt.

VI. DISCUSSION OF FINDINGS

From the above analysis, it is clear that PGDE students are aware of MOOCs as an online learning tool that can be use for learning. The result suggest that there is no significance difference in the awareness of male and female post graduate students on MOOCs and their usage for life-long learning. The result of this study is in agreement with those of Tasir , P & Lim, N. (2012) opined that students' are familiar with the concept of MOOCs and social media as a whole thereby prompting them to show positive satisfaction with the use of social media tools for learning. Also Santovec (2016) who found out that social media outlet has been shown to be useful interactive tools amongst college students by creating a space to communicate campus activities and events, thereby keeping students updated on the current information on campus.

Moreover, results in hypothesis two also revealed that PGDE students have positive attitude on the use of MOOCs for life-long learning. This finding is in agreement with that of Skolverket (2015) also opined that attitude plays a vital role on the usage of MOOCs as a learning tool. Life-long learning recognises individual learning throughout their life-time either

in a formal or informal setting. This is because knowledge and skills can become absolute if it is not updated continuously through life-long.

Hypothesis three reveals that that there is a significance difference between the constraints on the use of MOOCs and the quality of their learning as perceived by male and female PGDE students in university of Port Harcourt. The finding is in agreement with that of Fleming (2018) who argued that the openness of online social networking comes with risks that involve personal safety and the loss of confidentiality. Administrators continue to discuss and question how to handle the unique issues posed by the potential public display of students' information.

VII. CONCLUSION

MOOCs have greatly enhanced teaching and learning among PGDE students in university of Port Harcourt. The researchers noticed that PGDE students are aware of MOOCs as an online learning tools also they have a positive attitude on the use of MOOCs for life-long learning. However, there is enough constraint on the use of MOOCs as online learning tools for life-long learning.

VIII. RECOMMENDATIONS

Based on the results of this study, the following recommendations are put forward.

1. MOOCs should be adopted as reliable and a dependable platform for teaching and learning in Faculty of Education especially for GDE students.
2. Faculty of Education in collaboration with university of Port Harcourt should organise workshops on effective use of online learning tools for improved academic performance in the faculty.
3. Remedies should be put in place to avoid constraints to the use of MOOCs as a earning tools for life-long learning.

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