

Education Technology Innovation: Enhancing the Academic Performance of Undergraduate Distance Learners in Nigeria Universities Through Massive Open Online Courses (MOOCs)

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Abstract: *The research investigates the possible impacts of Massive Open Online Courses (MOOCs) on the academic performance of undergraduate distance learners in Nigerian universities. Given the abundance of information available in our digital age, technology plays a crucial role in educational advancement, making it possible for students to learn using computers and portable devices with internet connectivity. This educational advancement has created both opportunities and challenges in the way students' learning is structured in the twenty-first century. In contrast to the usual traditional methods of teaching and learning employed a few years ago, the trend has brought about a number of innovations that create new learning opportunities. In light of this context, MOOCs were created to alleviate the difficulties encountered by students who are balancing work and study. Two (2) research questions and a hypothesis were examined, utilizing a survey questionnaire as the data collection tool. The respondents comprised 278 randomly selected undergraduate students currently enrolled in distance learning programmes at universities in Nigeria. The result shows a positive and significant correlation between students' academic performance and MOOCs. This study therefore concludes that the implementation of Massive Open Online Courses (MOOCs) in distance learning education will significantly improve the academic performance of undergraduate students in Nigerian universities.*

Keywords: education technology, MOOC, Learning outcomes, part time students, NOUN.

INTRODUCTION

In the view of Abhishek et al. (2023, p.1), due to rapidly evolving technology and shifting lifestyles, educational institutions and students are attempting to adopt more innovative teaching and learning methodologies. Since world-class universities provide free or low tuition for excellent online courses, Massive Open Online Courses (MOOCs) are said to bring about new innovations in higher education, as it is a well-known phenomenon that computers can support the teaching and learning process for students. Technology-assisted instruction has been linked to important outcomes by numerous researchers (Burnett, 1994, Fitzgerald & Warner, 1996). One of the most talked-about topics in modern education policy is the crucial role that technology plays in teaching and learning (Rosen & Well, 1995; Thierer, 2000). According to the majority of education experts, educational technology has a high potential to enhance teaching and learning while also generating employment opportunities when utilized appropriately. Due to technology, more students are regularly providing data to monitor their progress both during their academic careers and in relation to benchmarks (Halverson & Smith, 2010). In the same view, Nelson, Polonsky, and McCarthy (2010), opines that in order for students to succeed in society today, they must acquire technological knowledge, skills, and attitudes. Technology can help make learning more individualized for each learner's needs and increase student engagement in the learning process (Nelson, Polonsky & McCarthy, 2010).

Private enterprises and institutions of higher learning have demonstrated considerable interest in Massive Open Online Courses (MOOCs). Since their launch in 2008, MOOCs have evolved significantly, sparking academic discussions regarding their effects, characteristics, and target demographics. MOOCs are among the numerous digital learning tools emerging from the popular educational technology movement that seeks to address the digital divide. It is crucial to maintain a critical stance towards success and to understand its limitations, particularly in light of the ethically complicated contexts of its application (Sinkam, 2014). According to Singh (2016), MOOCs have emerged as a new teaching format in higher education that engages a vast and diverse number of students in online learning activities. Because leading universities from around the world are competing to offer MOOCs, they have gained traction in the HE sectors. Some of the influences these developments have had on distance education environments have become inevitable realities (Kesima & Altinpulluk., 2015, p.16).

As an emerging country with abundant natural and intellectual resources, Nigeria ought to have reached a point where unemployment, crime, violence, and a host of other social ills are at an all-time low. Sadly, that isn't the situation. More young people are unemployed and unskilled, according to reports. Because of this, many young people participate in socially degrading activities that disrupt peace and jeopardize internal security. Education that was free and easily accessible would have helped close the gap, but the high cost of university tuition, high

unemployment rate, and overall poverty have made it empirically difficult for many to afford university tuition. Consequently, it is not surprising that large numbers of students seek employment as a substitute to save funds needed to continue their education later on (Furr and Elling, 2000). Sadly, many probably fail to return to studies afterwards because of the need to keep their hard-earned jobs or to carry on with other family demands and responsibilities. These considerations have led the majority to subscribing to Distance Learning Education. In Nigeria, full time students stand more chance of a better academic performance than the distance learners at least for the fact that they enjoy more contact hours. Furthermore, employers prefer graduates who passed through face-to-face learning mode than their online or DL counterparts.

In order to bridge the performance gap, MOOCs were introduced in most western countries to cover the loss of contact hours. In Nigeria for example, the National Open university was introduced to cater for working class students. As at today, the National Open University of Nigeria has the highest number of enrolled students in Nigeria (*see figure 1 below*). But on a larger scale, the most well-known MOOCs sites are Coursera, edX, Udacity, Udemy, Khan Academy, and Venture Lab (Kesima & Altınpulluk., 2015, p.17).

University	100		200		300		400		500		600		Total		Grand Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
National Open University of Nigeria	160,659	128,006	45,006	39,303	20,541	18,596	21,954	17,549	4,959	7,569	0	0	253,119	211,023	464,142
University of Maiduguri	7,328	3,827	6,623	3,622	6,714	3,664	6,064	2,815	4,895	294	71	21	31,695	14,243	45,938
University of Ilorin	5,077	4,956	5,598	5,373	4,827	4,911	5,832	5,667	1,318	877	12	12	22,664	21,796	44,460
Ahmadu Bello University	4,373	2,165	8,164	3,929	5,679	2,617	8,331	3,453	2,312	385	112	35	28,971	12,584	41,555
University of Benin	5,112	4,928	5,118	4,849	4,389	4,603	4,970	4,786	1,213	539	267	180	21,969	19,885	40,954
University of Jos	4,078	3,567	4,901	4,118	4,134	3,615	4,867	4,014	671	480	217	96	18,868	15,890	34,758
Ambrose Alli University	4,880	5,595	4,009	4,352	3,161	3,374	3,239	4,352	676	291	0	0	15,965	17,964	33,929
University of Calabar	4,582	5,078	4,252	4,484	3,116	3,669	3,076	3,459	442	548	69	45	15,537	17,283	32,820
University of Lagos	3,323	3,529	3,923	3,835	3,115	3,686	4,032	3,858	1,543	789	6	6	15,942	15,703	31,645
Nnamdi Azikiwe University	3,149	3,827	3,000	3,623	3,356	3,862	3,198	3,620	1,391	837	69	36	14,165	15,805	29,970
University of Nigeria	3,837	3,743	4,121	3,939	3,269	3,613	2,749	2,523	1,169	785	96	59	15,241	14,662	29,903
Bayero University	2,936	1,818	4,188	2,309	4,512	2,147	5,960	3,160	1,671	512	24	18	19,291	9,964	29,255
Obafemi Awolowo University	3,086	2,461	3,971	3,348	3,289	3,043	3,766	3,201	1,469	753	72	39	15,653	12,845	28,498
University of Port Harcourt	3,183	3,786	3,271	3,611	3,890	4,222	1,950	1,751	816	499	56	39	13,166	13,888	27,054
Benue State University	2,424	2,095	3,362	2,632	3,718	3,082	4,822	3,809	218	100	46	15	14,590	11,733	26,323
Ladoke Akintola University of Tech.	2,265	2,146	2,617	2,883	2,384	2,281	3,872	3,599	1,960	1,877	0	0	13,108	12,786	25,894
University of Abuja	4,777	2,386	3,672	1,854	3,764	1,956	3,324	1,717	44	31	0	0	15,581	7,944	23,525
University of Uyo	2,559	2,286	3,066	2,756	2,677	2,644	2,912	3,125	1,022	422	23	12	12,259	11,245	23,504
Federal University of Technology Owerri	3,664	1,603	3,360	1,315	3,438	1,278	3,395	1,262	2,892	870	16	27	16,765	6,355	23,120
Tai Solarin University of Education	2,800	3,581	2,727	3,441	2,450	2,990	2,018	2,578	0	0	0	0	9,995	12,590	22,585
Imo State University	2,212	3,181	2,192	2,812	1,922	2,744	2,553	3,584	656	239	32	27	9,567	12,587	22,154
Nasarawa State University	3,587	3,625	3,058	2,488	2,742	2,084	2,582	1,732	165	85	0	0	12,134	10,014	22,148
Usmanu Danfodiyo	3,065	1,418	2,734	1,210	4,090	1,744	4,214	1,614	424	126	193	55	14,720	6,167	20,887

Figure 1. Showing the list of undergraduate enrollments in Nigerian Universities (National Universities Commission, 2019, p.66)

Figure 1 above shows the list of undergraduate enrollments in Nigeria universities as of 2019. This reveals that the National Open University of Nigeria (NOUN) has the highest number of undergraduate enrollments in Nigeria with a total of 464,142 students comprising of 253,119 males and 211,023 females respectively. The university of Maiduguri is second on the list with a total of 45,936 students.

Theoretical Framework

The theoretical framework serves as a means of understanding and explaining the findings of the study (Ohanyelu, 2021,p.105). In this regard as viewed by connectionist theory, learning is not just the transmission of information from instructor to student and does not occur in a single setting; rather, it is shaped and transmitted by interpersonal interactions, particularly in a web environment (Kop, 2011). The connectivity theory suggests that every person is in charge of their own education. Each student plans and directs their own education in MOOCs (Kesima & Altinpulluk, 2015, p.17). However, Levy and Schrire, (2011), observed that nodes and connections, they create their own learning network.

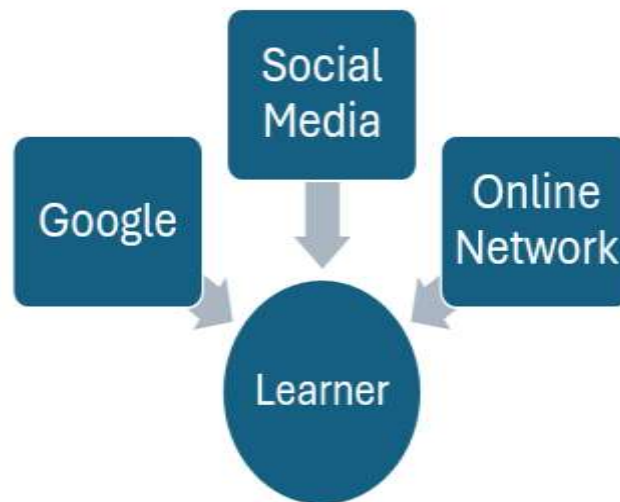


Figure 1: Connectivism Learning Theory

This theory acknowledges that a significant portion of learning occurs through technology and that we have the ability to choose how we learn because of our ongoing connectivity. When it comes to making decisions, solving problems, and making sense of information, it also encourages group collaboration and discussion, allowing for a variety of opinions. Connectivism encourages learning that takes place in places other than the individual, like blogs, online networks, social media, or information databases.

Goals and Objectives

According to McAuley et al. (2010, p. 5), MOOCs, have their roots in the principles of openness in education, are said to build upon the active participation of multiple learners who self-organize their participation based on their learning objectives, past knowledge and skills, and shared interests.

Due to the dire need for students to support themselves and their families as a result of growing economic hardship, many Nigerian students are now unable to continue their education and have instead turned to employment. Since their parents are impoverished and can no longer afford to pay for their education due to excessively high tuition. According to the study, MOOCs could be used to close the gap between working and going to school.

On this premise, the major objectives of this study are:

1. To improve knowledge delivery to undergraduate students on distance learning programmes using MOOCs as a learning tool.
2. Making MOOCs serves as an interconnectivity between universities and students who took to employment.
3. To use MOOCs as a pivot point to improve students' learning outcome without interfering with their jobs since getting new jobs in Nigeria is a difficult task.

Research Questions

The study will try to answer the following research questions:

1. How do MOOCs influence academic performance of distance learners at Nigerian universities?
2. How can MOOCs be used to bridge the gap between onsite and distance learning among undergraduate students at Nigerian universities?

Hypothesis

The following hypothesis was tested:

- The use of MOOCs by distance learners at Nigeria universities will improve students' learning outcomes.

Education Technology in Nigeria

Education technology is the study and moral application of developing, utilizing, and overseeing suitable technological procedures and resources to enhance performance and promote learning (Lever-Duffy & McDonald, 2011). In the same development, Azma (2011), is of the view that information and communication technologies, or ICTs, have had a major influence on the pedagogy of instruction in schools and vocational training. Technology in Education has significantly impacted teaching and learning, as a result, the emergence of MOOCs is a reinforcement strategy to improve students' academic performance. Multimedia technology,

online learning, also known as e-learning, mobile learning (m-learning), blogs, and social networks are the most popular tools in this new educational era (Fojtik, 2014). Since educational technology gives researchers and trainers access to resources that promote thorough learning and lengthen the learning process, it transforms all facets of human endeavour, particularly training and research. Educational technology devices could be used for training purposes, but there are limitations to their effective use (Laleye, 2015).

Education technology in Nigeria aims to address educational issues; it is used to transmit information and facilitate the teaching-learning process, providing essential materials for educators, learners, and researchers when required. As the primary means of enhancing their productivity, competitiveness, and wealth, the majority of nations are currently giving special attention to knowledge and information (Escueta, Quan, Nickow & Oreoupoulos, 2017).

According to Onasanya, Ayelaagbe, and Laleye (2012), Nigeria has been dealing with a severe education crisis for a long time. This crisis has included low literacy and basic education skills, large class sizes, poor curriculum implementation, inadequate funding, poor management, lack of interest in learning, and a shortage of qualified teachers. As a result of all these setbacks in educational technological advancement, Nigeria still remains one of Africa's developing nations, currently working to catch up to her peers in terms of technology (Laleye,2015). Therefore, it has been demonstrated that educational technology is crucial to attaining these qualities and is now the driving force behind significant classroom reforms. Students' self-motivation to learn has increased as a result of the use of technology in education, which has made information accessible outside of the classroom.

Unfortunately, Laleye (2015) noted that teaching and learning are invariably intertwined in educational training, the learner or trainee acts as the receiver, and the teacher or trainer acts as the sender. In the typical Nigerian classroom, particularly in public schools, textbooks and chalkboards continue to dominate the activities. Some private schools make efforts to integrate technology into their system to justify the exorbitant fees paid by parents and wards. Given the poverty level, very few people can access this opportunity. In some schools, the gadgets are purchased and kept for window dressing and exhibition but not used in teaching and learning situations.

Massive Open Online Courses (MOOCs)

One approach that provides a flexible way of teaching and learning is the blended model of education (Ayoub et al., 2020). For teachers, trainers, and students, it is an innovative approach to educational solutions that deftly blend traditional classroom instruction, mobile learning, and online activities. In this development, Sinkam (2014), hinted that a group of Canadian scholars developed the first MOOC in 2008 under the title Connectivism and Connective Knowledge (Downes, 2012; Littlejohn, 2013). Stanford University and Sebastian Thrun introduced the Artificial Intelligence course in 2011. Artificial Intelligence (AI) courses, which are considered to

be the pioneer MOOCs that ignited a period of explosive growth in the low-cost online education sector, attracted over 160,000 students from over 190 countries (Downes, 2012, Booker, 2013). Using the MOOC platform Coursera, 300,000 students were enrolled in 38 courses taught by Stanford professors and a few other esteemed universities (Friedman, 2013). In view of Oyo and Kalema (2014), MOOCs have proven to be a successful innovation, assisting in the discovery of the best new practices that could be applied to other blended, online, or in-person pedagogies. According to MOOC (2024), with MOOCs, you can grow professionally, acquire new skills, and receive high-quality education at scale in an economical and adaptable manner. MOOCs serve a multitude of purposes for millions of people worldwide, such as corporate eLearning & training, career development, career transitions, college readiness, supplemental learning, and lifelong learning. Perhaps the most significant contribution MOOCs have made to date is to bring up crucial issues and start vital discussions regarding curriculum design, accreditation, what makes a legitimate learning experience, and who is eligible for higher education (EDUCAUSE, 2013). This new model of education is available for anyone interested in learning without any restrictions (Wong, 2016). There is an urgent need to integrate MOOCs into our educational system so that part-time or distance learners can benefit, as a significant portion of the students are employed.

However, the government and the Education policy makers in Nigeria should put all hands-on deck for this to be achieved. According to Oyo and Kalema (2014), public higher education is likely to support the open access agenda and even look for additional funding from development partners to strengthen the operation, if African governments commit to MOOCs through appropriate curricula, instructor training, electronic content development and content delivery platforms, and the provision of modern access hubs. MOOCs are unquestionably appropriate for Africa because they eliminate the need for expensive large lecture halls, student housing and transportation expenses, and above all allow for widespread access with tuition fees waived or set at a level that is affordable and accessible to low-income students. There are numerous MOOCs learning platforms on which a distance learner can use to improve academic performance, it includes but not limited to:

1. Coursera
2. Udemy
3. Udacity
4. Stanford online
5. Future Learn
6. Edx
7. Khan Academy
8. Alison
9. MIT OCW
10. National Open Universities.

The National Open University of Nigeria (NOUN) as MOOCs platform

According to NOUN (2017), the National Open University of Nigeria is a Federal Open and Distance Learning (ODL) institution, the first of its kind in the West African sub-region. It is

popularly referred to as 'NOUN'. The National Open University of Nigeria in its effort to take education to the doorstep of the Nigerian populace irrespective of their social status and the employment status. NOUN has deployed and implemented eLearn portal technology to enhance student's learning experience. The NOUN eLearn platform has been created to ease access to excellent quality education. The platform provides amongst many, the following:

- Online class discussions organized by NOUN facilitators thereby creating a virtual classroom environment.
- Facility for students to get answers to any questions or areas of difficulty pertaining to their course of study.
- Networking and collaboration tools to help communities of interaction among students, facilitators, academic staff and faculty members (NOUN, 2017).

Students' Academic Performance

Students' academic success is influenced by how learning outcomes specify the knowledge, comprehension, and/or skills that learners should possess at the end of a learning session. It is a complete and explicit statement of what students learnt that centers on the skills, knowledge which could be determined through evaluation. In the view of Husaini and Shukor, (2022, p. 284), academic performance is a key factor in determining students standing at the university. It enables decision-makers, educational administrators, and academic staff to accurately assess students enrolled in different courses over the course of a semester. Academic performance has always been a topic of interest for all educational institutions. According to Ohanyelu (2021, p. 106), academic performance is the ability of students to express what they have learned in the classroom, either orally or in writing. As a result, it serves as the benchmark for evaluating instruction. Based on this supposition, the majority of employees and scholarship/grant evaluations are conducted using student performance.

Based on preset criteria, grades or marks assigned by instructors or the examination board—such as the West African Examination Council -- are typically used to identify academic performance (Ohanyelu, (2021, pp.106-107). It is penitent to understand the importance of academic performance because the value of assessment in education is a module for quality assurance and control that establishes whether or not students have understood the material and have fulfilled the requirements to receive a certificate (Bappah et.al., 2021.p. 585). Unfortunately, Research has indicated that students' academic performance in Nigerian higher education is generally regarded as below average. Numerous studies point to factors such as insufficient funding, subpar infrastructure, a shortage of qualified teachers, and irregular academic calendars contributing to low student achievement. Universities in Nigeria assess their students' academic performance using the cumulative grade point average (CGPA). Of the 236,925 who graduated from Nigerian universities in 2018, only 4032 (1.70%) received a first-class grade, according to the Nigeria University Statistics Digest (NUC, 2018, p. 95). The record mentioned above indicates that less

than 2% of all 2018 graduates had a CGPA in the range of 4.5 to 5.0 (NUC, 2018, p.95). One can argue whether or not these numbers indicate that a university education is of a high caliber.

MATERIALS AND METHOD

Research Design

The study is correlational research where the researcher examines the relationships between variables without changing or controlling any of them . A correlation shows how strongly and/or in which direction two or more variables are related to one another, which could be either positive or negative (Devi, et. al. 2022, p. 60). In this case, the study tries to find the relations between MOOCs and students' academic performance (SAP).

Instrument/ Participants/ Sample Size

Data was gathered using the survey questionnaire (5-point Likert scale of SD-SA) as an instrument. The questionnaire comprised five sections which included demographics and two variables- MOOCs and Students Academic Performance (SAP). The questionnaire items were adopted from (Abhishek, et. al. 2023, p.7). Each section of the questionnaire has 11 items each, while the demographic has 5 items. Due to the complexity of the target population, the study applied a paper questionnaire which was administered face-to-face to randomly selected undergraduate students currently enrolled in a distance learning programmes at Nigeria Universities. The instructions were clearly explained to ensure confidentiality, while ethical values were considered. A total of 278 respondents formed the sample size.

Table 1: The Demographics

Indicator	Classification	Total	%
Sex	Male	169	61.
	Female	109	39
Age	18-26	69	25
	27-34	91	33
	35-42	55	20
	43-50	63	23
Marital Status	Single	69	25
	Married	182	64
	Separated	13	5
	Divorced	7	3
	Widowed	7	3
University Geo-Location	South South (SS)	55	20
	South East (SE)	85	30
	South West (SW)	71	26
	North Central (NC)	25	09
	North West (NW)	19	07

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	North East (NE)	23	08
Employment Status	Employed	193	70
	Not Employed	85	30

As shown in Table 1. The study highlighted the demographics of the participants. A total of 278 representing 61% males and 39% females between the ages of 18-50 distributed among the 6 Geopolitical zones of Nigeria participated in the study.

RESULT

To explore the potential effects of Massive Open Online Courses (MOOCs) on the academic performance of undergraduate distance learners at Nigerian universities, the study established the relations between Massive Open Online Courses (MOOCs) and Students Academic Performance (SAP) with an overarching goal of improving knowledge delivery to undergraduate students on distance learning programmes using MOOCs as a learning tool. The following represents the findings from the tests carried out using SPSS version 27:

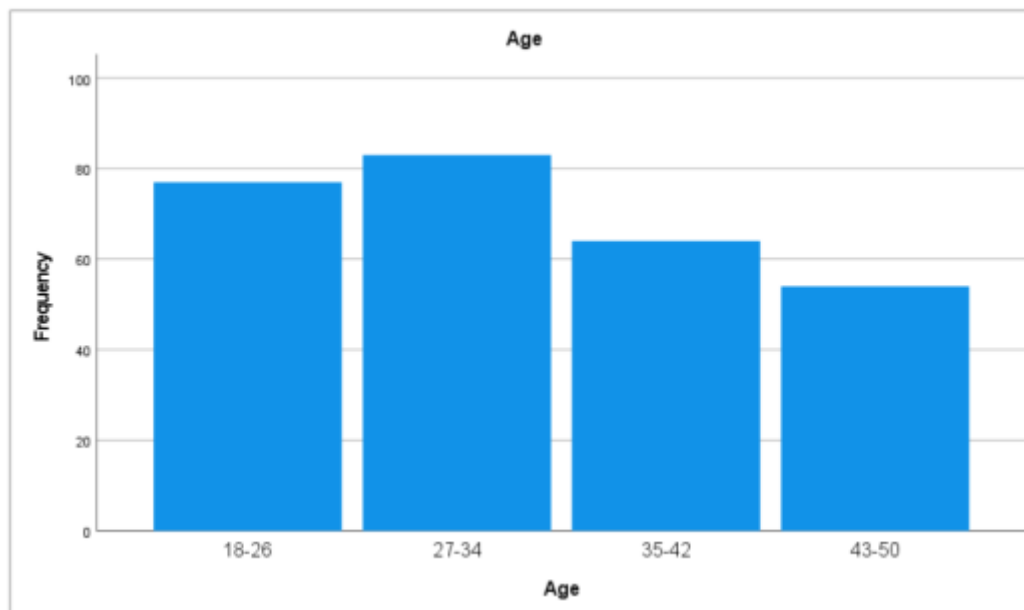


Figure 2: Bar Chart of Age distribution

Figure 2 shows the distribution of the age of the participants. Age range 27-34 representing 33% of the participants formed the majority.

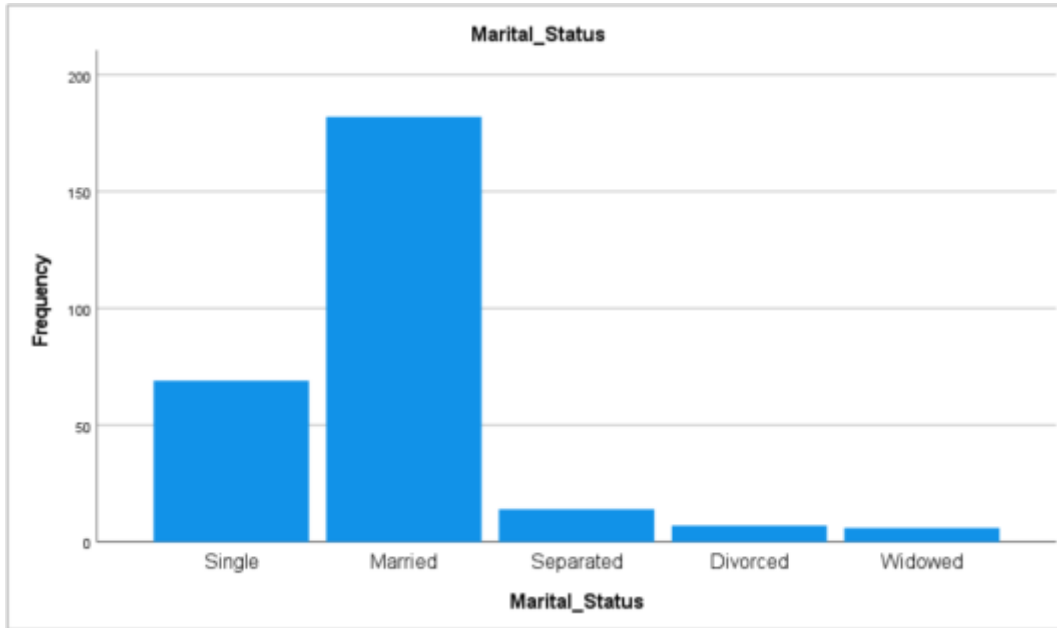


Figure 3: Marital status distribution

Figure 3 shows the distribution of the marital status of the participants. The married participants 182 in number, representing 64% formed the majority.

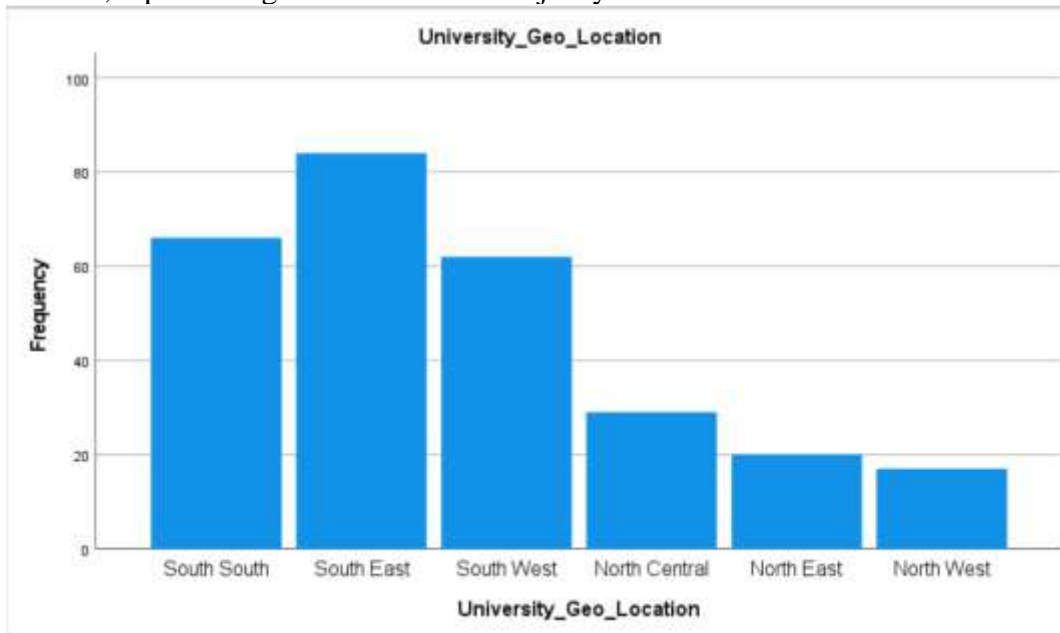


Figure 3 shows the distribution of the university Geo-political location of the participants. The participants from South East representing 30% of the total respondents formed the majority.

Table 2: Descriptive Statistics of the Demographics

Category	N	Min	Max	Mean
Sex	278	1.00	2.00	1.39
Age	278	1.00	4.00	2.34
Marital Status	278	1.00	5.00	1.91
University Geo-political Location	278	1.00	6.00	1.44
Employment Status	278	1.00	2.00	1.35

1. Test

A correlational analysis between Massive Open Online Courses (MOOCs) and Students Academic Performance.

Table 3: Descriptive Statistics of the correlation test

Variables	M	SD
MOOCs	3.75	1.20
SAP	4.04	0.94

Table 3 above shows the descriptive statistics of the correction test indicating the mean value of the two tested variables.

Table 4: Pearson Correlation between MOOCs and Students Academic Performance.

Pearson Correlation	MOOCs	SAP
MOOCs	1	
SAP	.811**	1

** . Correlation is significant at the 0.01 level (2-tailed)

Table 4 above shows the Pearson correlation between Massive Open Online Courses (MOOCs) and Students Academic Performance (SAP). The test shows that there is a positive and statistically significant relationship between the two variables at $r_s = 0.81$, $n = 278$, $p < .001$. This implies that an efficient and well implemented Massive Open Online Courses (MOOCs) can positively influence the academic performance of undergraduate students enrolled in distance learning programmes at Nigerian universities.

DATA ANALYSIS AND DISCUSSION

The Statistical Package of Social Science (SPSS), the most widely used statistical package (Cohen et al., 2007) was used for in-depth data analysis. Based on the findings, the result indicated that there is a statistically significant relationship between MOOCs and the learning outcomes of

undergraduate students enrolled in various distance learning programmes in Nigeria universities. From every indication, distance learners struggle to create time to study considering that the majority (70%) are employed. There might be other external factors e.g. family management and marital issues that might pose further hindrance to how much time students could devote to their studies, since 182 participants (64%) are married. However, with the introduction of courses using MOOCs as a tool, there would be an improvement in students' learning outcomes.

The Pearson correlation between MOOCs and Students Academic Performance shows a positive and statistically significant relationship between the two variables. According to Castano-Garrido and Garry (2017,p. 66), MOOCs have generated a lot of interest in the academic community and higher education, not only because of the startling number of students from around the globe who enroll in these courses for free, but also because of their enormous potential to develop novel teaching strategies and learning models that could alter the way traditional universities view education. To this effect, MOOCs awareness has gone viral that most students from developing countries benefit from it. In the same view of thought, numerous works have moved to the information and academic worlds as a result of the academic community's interest in MOOCs (Aguaded, Vázquez-Cano, & López-Meneses, 2016). To support the assertion that MOOCs and students' academic performance have a relation, Castano-Garrido and Garry (2017,p. 65), whose studies concluded that the Technology Acceptance Model (TAM) and the Instructional Materials Motivation Survey (IMMS) provide evidence that taking MOOCs enhances learning outcomes, which has an impact on academic achievement.

CONCLUSION

This study demonstrated how MOOCs are used to enhance learning outcomes of undergraduate distance learners enrolled in Nigerian universities. MOOCs can potentially play important roles in bridging the gap between distance learning programmes and on-site or campus learning formats. As most distance learners are already employed, there is a limit to what they could achieve in terms of academic performance due to interference from job related activities. After acknowledging that MOOCs dominate the discussion surrounding digital learning, the European Commission (European Commission, 2014) declares that technology will have an even greater impact in the future and that governments should encourage and support a deeper integration of new technologies and the pedagogical approaches that go along with them in the traditional offer. These courses are the most recent development in open educational resources, as noted by Mazoue (2014). One major benefit of Massive Open Online Courses (MOOCs) is that they are accessible to everyone and to an infinite number of students. This research therefore concludes that MOOCs can be used to improve the academic performance of undergraduates in distance education programmes at Nigerian universities. In a summary, Baturay (2015, p. 432) opined that the newest trend in online learning, MOOCs, appears to be here to stay, which suggests that there is a great need for more research on the topic.

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