

## **CHALLENGES OF USING MODERN TECHNOLOGIES IN TEACHING AND LEARNING BY LECTURERS IN TERTIARY INSTITUTIONS IN SOKOTO METROPOLIS**

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### **Abstract**

*The study x-rayed factors influencing effective use of modern technologies and challenges associated with the use of modern technologies in teaching and learning by lecturers in tertiary institutions in Sokoto metropolis. The study discussed what modern technology is. Three research questions guided the study and analysis of the research questions was done by using mean. The results revealed that challenges such as incessant nature of power supply, inadequate/lack of computer hardware, inadequate funding, and lack of in-service training contribute to the inability of lecturers to use modern technology in the execution of their duties. Based on the findings, the study recommended that necessary technologies needed for teaching/learning should be made available to lecturers and the institutions technology infrastructures upgraded, also seminars and conferences on current technologies used in teaching/learning and should be made available to lecturers so that their professional output is enhanced and guaranteed for higher productivity and long service to their employers.*

**Keywords:** Modern Technology, challenges, teaching/learning

### **Introduction**

The introduction of modern technologies in the world has greatly changed the way and manner in which every aspect of the world operates of which education sector is not an exception. Since the introduction of these modern technologies, policy makers in every country have made concerted effort to ensure that their country is not left behind in the radical change that technology has brought. Education sector in Nigeria is not left out as the Ministry of Education and other education bodies like National Universities Commission (NUC), National Commission for Colleges of Education (NCCE) in conjunction with Tertiary Education Fund (Tetfund) have invested tremendously in infrastructure and human capital development of the education section. Also, Tirene and Luft in Ogbomo (2011) said that students

whose teachers had professional acumen in ICT performed better than those whose teachers did not.

Since most of the Colleges lack ICT materials and also many of the lecturers lack ICT competence, hence the National Commission for Colleges of Education (NCCE) should be commended for insisting that without a Certificate in ICT, lecturers in Colleges of education should be denied promotion with all these efforts many tertiary institutions are faced with the developmental challenges of the use of modern technologies in teaching and learning which is becoming a global way of learning and that is why Mbachu (2008) said that most developed countries have explored the potentials of Information and Communication technology (ICT) to transform particularly instructional process.

Tertiary education or higher education according to FRN (2004) is an instrument of social, political and economic development. The products of higher education in any nation will determine the development of such nation. Therefore, higher education contributes to national development through high level relevant manpower training; in order to acquire both physical and intellectual skills which enable individual to be self reliant and useful members of society. In line with the above statement, states also need to invest in their tertiary institutions because no meaningful development can take place in a nation when the states that make up that nation are backward. Based on the above assertion, the need for incorporation of modern technology in teaching and learning in higher institutions in Sokoto metropolis need not be over emphasized because no nation/state can develop above the educational level in its domain.

Sokoto metropolis has a good number of tertiary institutions and the rapid transformation in use of modern technology in tertiary institutions in Sokoto metropolis is yet to be totally incorporated into the teaching and learning programme due to challenges either in acquiring these technologies or lack of insufficient manpower to help in the training of personnels, incessant nature of power supply and poor back ground of students in computer knowledge. In line with the challenge of power supply, Osakwe (2012) clearly stated that acquisition, deployment and management of information technology resources and services for teaching, depend on electricity.

Just like many tertiary institutions in Nigeria, are faced with challenges of using modern technology in terms of e-learning and, e-teaching, Sokoto state is not an exception Ojeaga and Igbinedion (2012) said that the use of e-learning in the country's educational system is sluggish or even a fantasy. The slow pace of e-learning is as a result of lack of computer availability and internet accessibility. Adavbiele (2016), stated that like every issue of

development in the country, all universities in Nigeria are struggling to access technology as a measure to ascertain academic excellence through teaching and of which tertiary institutions in Sokoto metropolis are also in that struggle.

Modern is the advancement of the old technology with new additions and modifications (Swalish, 2017). That is to say any machine or device we see around us is the product of modern technology. Modern technology in education is those machines or devices used in the execution of our teaching; learning activities to make it easy interesting, interactive and goal oriented in other words modern technology education is what were refer to as Information and Communication Technology (ICT) in education. The use of ICT in teaching/learning has come to stay whether we embrace it or not this is because the positive institution of ICT therefore becomes imperative for both teachers and students to use. According to Murray in Adavieble (2016), modern technology or information and communication technology (ICT) is a comprehensive expression for information technology (IT) which focuses attention to the function of integrated communications.

Margaret 2017, said that in as much as there is no distinct, commonly established definition of ICT, the term is commonly used to imply all devices, networking components, applications and systems that contained and enable people and organizations (i.e. businesses, non-profit organizations, governments and other enterprises) to communicate in the digital world.

According to Azuh and Modebelu (2013), empirical studies have indicated that even teachers who have competence in the use of ICT do not integrate them in their teaching. Problems of quality and lack of resources are compounded by the new realities faced by higher education institutions battle to cope with ever increasing students' number. Also Kwacha (2007) added that most common problems associated with the effective implementation of ICT are lack of qualified ICT personnel, cost of equipment, management attitudes, incessant electricity power supply and non-inclusion of ICT programme in teacher's training curricula.

Akinyemi (2007) stated that these challenges include insufficient ICT services and infrastructure unavailability of access to ICT resources at will by both students and lecturers, irregularly electricity supply. Other challenges include lack of technical support insufficient funding of institutions, lack of the needed knowledge and skills in the use of ICT faculties and resources, inadequate incentive and motivations for lecturers and conservative or un-dynamic nature and attitude of some lecturers in the use of ICT in teaching.

To guide this study three research questions were raised as follows:-

- What are the problems hindering lecturers from using modern technology in teaching and learning process in tertiary institutions in Sokoto metropolis?
- What are the challenges associated with the use of modern technologies by lecture in tertiary institutions in Sokoto metropolis?
- What are the possible solutions to the challenges associated with the use of modern technologies by lecturers in tertiary institutions in Sokoto metropolis?

### Method

The study used the descriptive survey design so as to get the opinions of lecturers in involved in the study. An adapted questionnaire from Adavbiele (2016) and Azu & Modebelu (2013), which was subjected to re-validation by experts, was used to elicit information from lecturers on the problems and challenges affecting their use of modern technology in the classroom. A total of 100 lecturers was purposively selected across five tertiary institutions in Sokoto metropolis and sample of 80 was used based on research Adviors (2006). Table for determining sample size, questionnaire titled problems and challenges affecting the use of modern technologies in teaching and learning was used to elicit information from the lectures. The questionnaire consisted of three parts, part one deals with problems hindering lecturers from using modern technologies with ten items, part two deals with challenges associated with the use of modern technologies with ten items while part three deals with possible solutions to the challenges also with 10 items. All these items were based on four point likert scale rating as follows Strongly Agreed SA (4 points), Agreed (3points), Disagree D (2 points) and Strongly Disagree SD (1 point). Analysis of the responses was done through the use of mean for each of the items.

### Result

**Table 1: Mean responses of Lecturers on the problems hindering the affective use of modern technologies in teaching and learning in tertiary institutions in Sokoto metropolis.**

S/n	Items	SA	A	D	SD	Mean	Remarks
1	No enough ICT instructional technical support equipment in my institution	10	35	25	10	2,56	Agree
2	Inability to adopt and adapt with using ICT facilities hinders the use of ICT	12	18	20	30	2.15	Disagree
3	Low access of ICT facilities in my institution	30	20	23	7	2.91	Agree

4	Non possessing of personal computer and some software hinders the use of ICT in my institution	26	22	20	10	2.85	Agree
5	Problem of poor reception (uploading and downloading of documents/files act as hindrance	35	20	15	10	3.00	Agree
6	Erratic nature of power supply discourages the use of ICT in my institution	40	25	10	5	3.25	Agree
7	Health related problems associated with the use of computer like eye strain and heat exposure discourage me on the use of ICT	22	10	20	28	2.33	Disagree
8	Inability of my institution to meet the capital and running cost establishing both the internet and internet facilities	35	25	15	5	3.12	Disagree
9	Problems of resourcing issues like class size, students and teacher preparation for new mode of learning and teaching and for the use of associated technologies	39	25	10	7	3.18	Agree
10	Pedagogical issues like the need to re-design courses for different delivery modes hinders one on the use of ICT	30	22	18	10	2.90	Agree

The Result in Table 1 above showed that all the items with exception of item No. 2 & 7 have their mean of responses above 2.50 which shows that lecturers in tertiary institutions in Sokoto metropolis agree that the above problems are hindering the effective use of modern ICT in teaching and learning

**Table 2: Mean responses of lecturers on the challenges associated with the use of modern technologies in teaching and learning process in tertiary institutions in Sokoto metropolis.**

S/n	Items	SA	A	D	SD	Mean	Remarks
1	No enough capacity to accommodate increase in traffic	35	26	14	5	3.14	Agree
2	Insufficient internet to IP address (Lack of connectivity and bandwidth) has affected my use of ICT	15	20	25	20	2.38	Disagree
3	Lack of technical staff to support use of ICT	38	22	12	8	3.12	Agree
4	Lack of computer and computers still expensive	28	26	16	10	2.79	agree
5	Lack of internet or slow	10	15	20	35	2.00	Disagree

6	connectivity The physical environment in my institution is characterized by some combination of heat, dust and connectivity each of which is a challenge for standard computer	36	28	06	10	3.12	Agree
7	Resistance to change /negative attitudes on the part of the students	30	25	15	10	2.94	Agree
8	ICT tools are not compatible with	25	32	13	10	2.90	Agree
9	Lack of interest on the part of the lecturers	20	14	16	30	2.35	Disagree
10	Inadequate ICT up-dating opportunities	30	22	18	12	2.88	Agree

Result in table 2 reveals that seven out of the ten items are in agreement with factors outlined as challenges associated with using modern ICT in teaching and learning by lecturers in Sokoto metropolis, while items 2, 5 & 9 scored below 2.50. This shows that items 1,3,4,6,7,8 and 10 are challenges associated with the use of modern ICT in teaching and learning process.

**Table 3: Mean Responses of lecturers on the solutions to the challenges of using modern technology in teaching and learning in tertiary institutions in Sokoto metropolis.**

S/n	Items	SA	A	D	SD	Mean	Remarks
1	Provision of modern technology hard wares	35	25	15	5	3.12	Agree
2	Establishment of effective ICT system to cater for large audience in the classroom	40	25	10	5	3.25	Agree
3	Creating of proper awareness on the role of ICT for easy e-learning and e-teaching	30	32	10	8	3.05	Agree
4	Training of lecturers on ICT utilization through in-service	32	28	15	5	3.09	Agree
5	Administration should ensure that every lecturer owns a laptop and the accessories	26	20	14	20	1.40	Disagree
6	Regular training and re-training of lecturers	35	28	17	10	2.72	Agree
7	Establishment of well equipped ICT centers for free training of lecturers and students	35	28	17	10	2.10	Disagree
8	Adaptation to changing rules and	24	26	20	10	2.78	Agree

	norms on the use of ICT across the globe									
9	Encourage	online	training	of	36	24	15	5	2.78	Agree
	lecturers									
10	Government	should	allocate	more	28	27	15	10	2.91	Agree
	funds for ICT									

Table 3 result shows that items 1,2,3,4,6,8,9 and 10 have the means above 2.50 while items 5 and 7 mean are below 2.50. This shows that majority of the lecturers agree with the outline solutions as a means of overcoming the challenges in the use of modern technologies in teaching and learning process in tertiary institutions in Sokoto metropolis.

### Discussion

The findings of this study revealed that non –possession of personal computers and some software hinder the use of ICT, also problem of class size, students and teacher preparation for new modes of learning and teaching with associated technologies are part of the problems. This is in line with the findings of Azuh and Modebelu (2013), that said that problems of quality and lack of resources are compounded by the new realities faced in higher education institutions in their battle to cope with the ever increasing students numbers.

The study also showed that major challenges which include lack of technical support staff, resistance to change/negative attitude of students to change, epileptic power supply and inadequate ICT up-dating opportunities. The findings are in line with the work of Kwacha (2007), Akinyemi (2001) and Osakwe (2012) that mention lack of technical support personnel, non-inclusion of ICT programme in teachers training curricula and lack of needed knowledge and skills in use of IT facilities and incessant nature of power supply add to their challenges in using modern technologies in teaching and learning.

In addition, lecturers agree that provision of adequate hardware, establishing of effective ICT system to carter for large audience, encouraging online training, administration ensuring that every lecturers training and re-training will help alleviate the challenges. It therefore becomes necessary that all these solutions must be looked into for easy use of modern technology in teaching and learning.

### Conclusion

The study looked into the challenges affecting the effective use of modern technologies in teaching and learning by lecturers in tertiary

institutions in Sokoto metropolis. Factors like lack of enough technical support personnel, low access of ICT facilities and erratic nature of power supply were seen as affecting the effecting use of modern technologies in teaching and learning by lecturers in tertiary institutions in Sokoto metropolis. The study also revealed that to redress these factors, provision of adequate hardware, encouraging online training, administration ensuring that undergo training and re-training must be adequately tackled.

### **Recommendations**

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

1. Lecturers in tertiary institutions in Sokoto metropolis should be encouraged to acquire the needed skills that will help the use modern technologies in the teaching/learning activities.
2. Government should endeavor to make adequate provision of ICT resources and infrastructures to help the lecturers in keying in to the change in technological development of education
3. Lecturers in tertiary institutions in Sokoto metropolis should be assisted to have access to these modern technologies by giving them the need support in form of sponsorship to workshops and conferences to enhance their productivity and long service to their employers.

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