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Multimedia Technologies Utilisation as Correlate of Lecturers' Teaching Effectiveness in Colleges of Education in South West, Nigeria.

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Abstract

The study investigated multimedia technologies utilisation as a correlate of lecturers' teaching effectiveness in colleges of education in south west, Nigeria. . This is for the purpose of ascertaining the relationship and contribution of multimedia technologies to lecturers' teaching effectiveness in Nigerian colleges of education. The descriptive research design was adopted, while a multi-stage sampling procedure was used in the study. Stratified sampling technique was used to select colleges of education and simple random sampling method was employed to select lecturers from the selected colleges of education. A total of 862 lecturers (627 males and 235 females) participated in the study. A structured questionnaire tagged "Lecturers' Questionnaire on Multimedia Technologies Utilisation and teaching effectiveness in Colleges of Education in South western Nigeria" (LQMTUTECESN) with the reliability coefficient of 0.86 was used for data collected. Four research questions were answered and two hypotheses were tested in the study at 0.05 level of significance. The results showed that multimedia technologies utilisation were averagely utilised in colleges of education in southwester Nigeria while lecturers' teaching effectiveness were high also there is significant relationship between multimedia technologies utilisation and lecturers' teaching effectiveness. The academic library is significant in promoting the use of multimedia technology in tertiary institution in Nigeria and multimedia technologies utilisation could be considered to be significantly influence lecturers' teaching effectiveness in colleges of education in south-west Nigeria.

Keyword: Academic library, Effective teaching, Multimedia technologies utilisation and Lecturers' teaching effectiveness

Introduction

The effectiveness of tertiary institutions globally depends largely on the effectiveness and productivity of her academic staff and the quality of her graduates. Therefore, lecturers as human resources in tertiary institutions (colleges of education inclusive) are the foremost determinants of teaching processes in ensuring quality education. Studies have proven that lecturers are institutional workforce that transform the educational programme of any nation into practical scholarship experience in the course of teaching and learning (Abdulganiyu, 2015, Aguba 2005 and Ng and Komiya 2010).

Lecturer's ability to effect personal change and development in students, effectiveness in facilitating good academic work in these students is a pointer to their effectiveness. Effectiveness generally refers to the extent to which an individual achieves his purpose. Relating this to the lecturers therefore, is about doing the right things in the teaching process so that at the end of teaching, the goals and objectives of the teachers can be achieved. Teaching is a highly complex work, and challenging.

Teaching in tertiary institution involves diverse modes of instructional process which involves lecturing, workshop, seminars, and mentoring up-coming scholars. Effective teaching processes also educational objectives, such as, stimulating scholarship interest in their students, cognitive skill development, knowledge creation and among others. An important difference in determining effective teaching may be the relative importance of cognitive and affective goals. Awotua-Efebo (2014) identified some teaching qualities that are strongly related to cognitive objectives, to include knowledge and skills, fostering student's interest and curiosity.

Studies have established that all human beings have an inherent worth and deserve information services that help address their information needs, library information services meet the requisite needs of the academic community are desert-based rights of individuals, particularly in an academic library context. Information technology (multimedia technologies) enhances students ability in meeting their information needs, therefore deserves serious attention in the educational context (Purcell, Heaps, Buchanan and Friedrich, 2013; Mumtaz, 2000). The academic library as the store house of human discovery and intellectual knowledge plays significant role in the effective use of multimedia technologies in tertiary institution through the provision of the hardware and software and technical assistance in lectures presentation.

For example, the New Media Consortium (NMC) and the EDUCAUSE Learning Initiative (ELI) recently released the 2014 New Horizons report on K–12 learning and considered multimedia technology use in academic environments as integral to the learning process in terms of content delivery, learner support, and other similar digital strategies (NMC, 2014). Also, the American Association of School Librarians (AASL) and the International Federation of Library Associations and Institutions (IFLA), both substantial and influential organizations in the library domain, have stated that a key goal of libraries is providing equitable access to information and multimedia Technologies, while also providing opportunities for lifelong learning through meaningful engagement with multimedia Technologies for learning regardless of socioeconomic or racial status (AASL, 2007; IFLA, 2012).

Academic library as stated by operates with objective of supporting teaching, learning and research by providing an active instructional program integrated into curriculum content, with emphasis on; Resource-based capabilities; Thinking-based capabilities; Knowledge-based capabilities; Reading and literacy capabilities; Personal and interpersonal capabilities and

Learning management capabilities. A school librarian plays a leadership role in developing these capabilities through individual and collaborative instruction and facilitation explicitly connected to curriculum content and outcomes, (IFLA, 2015). The United Nations have stressed the importance of media technology in educating the younger generation and how it has largely developed every similar stage, with little cross-national variation (United Nations, 2003). It could be applied that there is a constant use of media technologies among lecturers and students in developing countries. Therefore the library as the repository of information has a role to play in effective use of multimedia technologies in colleges of education in Nigeria. Studies have identified lack of access to quality education and resources in educational process in developing nation compared to those in developed countries. Herselman (2003) and Costello (2000) mentioned that geographic location should not place limitations on access to information and the use of the media technology (Internet), which is considered vital to the promotion of learning, training and business development in developing communities.

Several studies have identified six criteria to ascertain teacher's effectiveness in class. They include ability of lecturers to effectively communicate lesson objective to their students. An effective teacher is expected to complete the syllabus guiding the subject taught over the stipulated time frame, teacher ability to use different teaching techniques to educate his or her student, while doing this, the teacher should be able to manage the classroom effectively to reduce distractions from students. A good teacher should be accessible to student and ever ready to answer questions from his or her students, but unidentified teachers' effectiveness in most studies is information literacy ability of teachers which is their ability for accessing available information in libraries (Danielson, 2013; Awotua-Efebo,; 2014, Opesanwo and Simisaye, 2017).

Also, methods of teaching to advance student learning is changing fast as technology appears. Teachers in colleges of Education may not need to embrace new methods of teaching, rather strive to consider all options which include the use of various multimedia technologies in teaching, (whether new or old) that can have a profound impact on students' learning. Studies have identified advantages of multimedia technologies in teaching and learning process, identifying multimedia technologies as a multi-sensory technological experience which can stimulate student exposure, as a result bring about a positive attitude to its application in learning process also has the highest rated information retention and short time learning

technology which its relevance serves diverse purposes, these include information sharing-portal, search engines, social service, business solution etcetera, (Neo and Neo, 2001, Ng and Komiya 2010).

Multimedia technologies utilisation has positive effect on effective teaching, its utilisation is believed to enhance job productivity of lecturers in Nigeria, such as accelerating information delivery, encourages teaching, learning and research, (Etebu, 2010). The advent of the Internet which has multiple formats that can be communicated over the World Wide Web (www), has integrated audio, video, animation into classroom subject presentation, which extends lecturers abilities to present materials that encourage student interaction with the subject matter. For instance videos, still pictures and animation help lecturers to bring scientific principles into life experience. Multimedia technologies able learners to watch experimental processes in action such as viewing how molecules are being broken down and seeing microorganisms in a close up using the computer keyboard and mouse to navigate images, stimulation of interactive materials (Egunjobi and Sangodoyin, 2013).

Egunjobi (2012) pointed out that educational media contain materials that have educational content which can enhance the achievement of teaching and learning objectives when used in institutions of learning by teachers at any level of education. As indicated by Omagbemi (2004) that students are believed to be more inspired when utilising multimedia technologies and the internet which is described as using the multimedia hook, he further revealed a poor utilisation of multimedia technologies in Nigeria schools, despite its significant relationship with teaching and learning process in schools. Neo and Neo (2009) stated that multimedia technologies facilitate students working at an alternate pace, and a few bundles can be tailored to students needs, they identified that in Asian schools, students are introduced to educative concept in their early education and the use of multimedia technologies has significant effect on teachers' effectiveness and pupils' academic success.

Tertiary institutions' general courses class are very crowded, under such conditions, it is difficult for the students to hear and pick most point from the lecturers. The use of multimedia technologies impacts the students and lectures interaction in class, compared to the traditional teaching method which emphasis on lecturers' guidance, while the information given are limited. Multimedia technology incorporated goes beyond time and space, created more striking, visual, genuine condition for general class sustains students' drives and monitors class time. Tenopir (2010) reported on the use of multimedia technologies in

teaching, he reported that younger faculty members may be more likely to read electronic articles, while older ones rely on print sources. He also found that there was more use of multimedia resources by the younger academics than the older ones in the overall results in Australia and U.S.; also, it was statistically observed that multimedia technologies significantly associated with effective teaching by academic staff in the three countries surveyed.

According to Obiri-Yeboah and Kyere-Djan (2016), teachers utilise multimedia technologies like traditional resources of overhead transparencies and handouts utilising standard word processing package; they utilise these technologies and had experience more powerful communication and presentation programming; incorporated the utilisation of any Information and Communication Technology (ICT) programming into the lecture presentation and a few percentage utilise Compact Disk information resources.

The investigation likewise uncovered that in the process of delivering lectures, the students seldom exhibit the utilisation of ICT as an instructing device, that is, lecturers seldom model the use of ICT through their very own practices. Hence, due to the increase in students' failure rate and poor performance in both internally and externally conducted examinations, these has necessitated the need for an enhancement in instruction methods, also lecturers' effective utilisation of contemporary multimedia technologies at all educational levels in Nigeria. Several studies have proven that multimedia technologies utilisation for education process will enhance academic excellence. It is against this foundation, that this study researched multimedia technologies utilisation as correlates of lecturers' teaching effectiveness in Colleges of Education in south west, Nigeria.

Objectives of the study

The main objective of this study is to investigate the extent to which multimedia technologies as correlate of lecturers' teaching effectiveness in Colleges of Education in South-west, Nigeria. The specific objectives are: To

1. identify multimedia technologies used by lecturers in colleges of education in south west, Nigeria;
2. identify the role of academic library on the use of multimedia technologies in colleges of education in south west, Nigeria;
3. examine the level of lecturers' teaching effectiveness in colleges of education in south west, Nigeria;

4. find out the relationship between multimedia technologies utilisation and lecturers teaching effectiveness colleges of education in south west, Nigeria;

Research Questions

This study will provide answer to the following research questions:

1. What are the multimedia technologies utilised by lecturers during lectures in colleges of education in south west, Nigeria?
2. What role dose the academic library plays in the use of multimedia technologies in colleges of education in south west, Nigeria?
3. What is the level of lecturers' teaching effectiveness in colleges of education in South-west, Nigeria?
4. What is the relationship between multimedia technologies utilisation on lecturers' teaching effectiveness in colleges of education in south west, Nigeria?

Methodology

Research Design

This study adopted a descriptive survey design of correlation type. This design was adopted for the study because the existing variables were investigated in the study, there was no manipulation of any variable.

Population and Sampling Techniques

The total population for this study was based on lecturers in colleges of education in south-western Nigeria. Multi-stage sampling procedure was adopted. Stratified sampling method was used to select colleges of education and simple random sampling method was used to select lecturers for the study. This method was employed for equal representation of respondents from the selected colleges of education in South-western Nigeria. Meanwhile sample of 1098 lecturers were selected for the study.

Instrumentation

The main instrument for data collection is the structured questionnaire tagged Questionnaire on Multimedia Technologies Utilisation and Effective Teaching in Colleges of Education in South west, Nigeria (QMTUETCESWN). The items in the questionnaire were designed by the investigators. The questionnaire was administered to the lecturers from the selected Colleges of Education which consisted of both Federal and state. The items were designed to

examine the relationship between multimedia technologies utilisation and lecturers' effective teaching in colleges of education in south west, Nigeria. The questionnaire was validated and trial-tested on 25 lecturers apart from those used for the study. The reliability coefficient is 0.86 which was found reliable and adequate for the study.

Data Analysis

The data collected were analysed using frequency, percentage, mean, standard deviation, multiple regression and t-test.

Response rate

The sample for the study consisted of 1,098 lecturers, out of which 862 (78.5%) copies were found usable.

Findings

The findings revealed that 627(72.7%) of the respondents were males while 235(27.3%) of them were female. On respondent age 46(5.3%) are less than 30 years of age, 213(24.7%) are aged 31-40 years, 417(48.4%) are aged 41-50 years, 147(17.1%) are aged 51-60 years and 39(4.5%) are aged 61 years and above. Also 121(14.0%) had less than 5 years of experience, 301(34.9%) had 5-10 years of experience, 117(13.6%) had 11-15 years of experience, 169(19.6%) had 16-20 years of experience, 120(13.9%) had 21-25 years of experience, 10(1.2%) had 26-30 years of experience and 24(2.8%) had 31-35 years of experience.

Research question 1: What are the different types of multimedia technologies utilised by lecturers for teaching in Colleges of Education in south west, Nigeria?

Findings are indicated in Table 1

Table 1: Types of Multimedia Technologies used by the lecturers in Colleges of Education in south west, Nigeria

S/N	Items	Daily (%)	Weekly (%)	Monthly (%)	Never (%)	Mean	S.D.
1	Mobile Phones	647 75.1%	115 13.3%	67 7.8%	33 3.8%	3.56	.89
2	Social Media	510 59.2%	203 23.5%	105 12.2%	44 5.1%	3.30	1.02
3	Internet Facilities	483 56.0%	159 18.4%	159 18.4%	61 7.1%	3.12	1.64
4	Laptop/ I-pad	466	154	139	103	3.10	1.14

		54.1%	17.9%	16.1%	11.9%		
5	CD-Roms	123 14.3%	198 23.0%	210 24.4%	331 38.4%	2.30	.98
6	Scanners	170 19.7%	169 19.6%	302 35.0%	221 25.6%	2.24	1.13
7	Teaching Courseware	177 20.5%	210 24.4%	151 17.5%	324 37.6%	2.25	1.17
8	Computer Aided Instructional Software	115 13.3%	182 21.1%	276 32.0%	289 33.5%	2.25	1.06
9	Digital Video Disc (DVD/VCD)	294 34.1%	270 31.3%	137 15.9%	161 18.7%	2.19	1.10
10	Interactive Radio and Television Instruction	96 11.1%	175 20.3%	175 20.3%	432 50.1%	2.07	1.20
11	Electronic Interactive Board	153 17.7%	155 18.0%	425 49.3%	129 15.0%	2.04	1.18
12	Multi-media Projector	173 20.1%	232 26.9%	379 44.0%	78 9.0%	1.94	1.00
13	Simulation Programme and Games	132 15.3%	79 9.2%	229 26.6%	422 49.0%	1.91	1.09
14	Multimedia Animations	369 42.8%	67 7.8%	146 16.9%	280 32.5%	1.89	.95
15	Video Conferencing Tools	76 8.8%	192 22.3%	125 14.5%	469 54.4%	1.78	1.00

Table 1 reveals that the highest utilised multimedia technologies by lectures in Colleges of Education in south west, Nigeria is Mobile Phones, ($\bar{x} = 3.56$), followed by Social Media, ($\bar{x} = 3.30$), Internet Facilities, ($\bar{x} = 3.12$) and Laptop/ i –pad, ($\bar{x} = 3.10$), while the least types of multimedia utilised are Video conferencing tools, ($\bar{x} = 1.78$), Multimedia Animations, ($\bar{x} = 1.89$) and Programme and Games, ($\bar{x} = 1.91$). This implies that, mobile phones, social media, internet facilities and i-pad were the most frequently utilised multimedia technologies by the lecturers in Colleges of Education in south west, Nigeria in order to improve their productivity.

Table 2: Test norm Table for multimedia technologies utilisation in Colleges of Education in south west, Nigeria

Interval	Total mean score	Remark
1-20		Low level of MTU
21-40	35.94	Average level of MTU
41-60		High Level of MTU

Table 2 shows that the occurrence of utilisation of multimedia technologies in College of Education in south west, Nigeria was on the average. Thus, the overall mean score of lecturers' frequency of multimedia technologies utilisation scale of 31.20 falls within the interval distribution of 21 and 40 which is average frequency of use. This implies that lecturers in Colleges of Education in south west, Nigeria averagely utilised multimedia technologies for their instructional activities.

Research question 2. What role dose the academic library plays in the use of multimedia technologies in colleges of education in south west, Nigeria?

Findings are indicated in Table 2

S/N	Statement	Strongly Disagreed (%)	Disagreed (%)	Agreed (%)	Strongly agreed (%)	Mean	S.D.
1	The library provide necessary multimedia technology assistant to aid teaching process in the institution.	5 0.6%	15 1.7%	373 43.3%	469 54.4%	3.51	.57
2	The library provide internet connectivity to help lecturers access online multimedia teaching aids to enhance teaching	19 2.2%	30 3.5%	524 60.8%	289 33.5%	3.27	.71
3	As a lecturers I contact library staff to assist anytime I have issues using available multimedia technology	59 6.8%	34 3.9%	395 45.8%	374 43.4%	3.26	.83
4	Multimedia technology utilization in lecture presentation is highly promoted by the institution management	242 28.1%	304 35.3%	124 14.4%	192 22.3%	2.31	1.11
5	Therefore is time-to-time training organized for lecturers by the library	228 26.5%	369 42.8%	198 23.0%	67 7.8%	2.12	.89
6	As lecturers I am able to provide feedback to the library on need for improve the use of multimedia technologies during teaching	153 17.7%	155 18.0%	425 49.3%	129 15.0%	2.04	1.18
7	Most time system breakdown affect my use of media technology in the library	173 20.1%	232 26.9%	379 44.0%	78 9.0%	1.94	1.00
8	The library staff are not accommodating when issues arise when using multimedia technologies in the library	132 15.3%	79 9.2%	229 26.6%	422 49.0%	1.91	1.09
9	There is frequent internet down time which affect lecturers use of multimedia technologies in the library	369 42.8%	67 7.8%	146 16.9%	280 32.5%	1.89	.95
10	I don't have interest in using the available media technologies because it courses distraction when teaching larger class	76 8.8%	192 22.3%	125 14.5%	469 54.4%	1.78	1.00
N = 862		Weighted average= 2.40			Criterion mean = 2.50		

Table 2 reveals that the library provides support for the effective use of multimedia technologies in Colleges of Education in south west. The criterion mean is less than the weighted mean. This implies that, the academic library need to improve on providing assistance for lecturers on the use of multimedia technologies in colleges of education in south west, Nigeria to improve effective teaching.

Table 3: Lecturers' self-evaluation on teaching effectiveness in Colleges of Education in south west, Nigeria

S/No	Items	SD (%)	D (%)	A (%)	SA (%)	Mean	S.D.
1	My ability to provide students with activities relevant to lessons, setting realistic goals for them to accomplish and effective time management in the classroom enhance my teaching process	13 1.5%	18 2.1%	320 37.1%	511 59.3%	3.79	2.80
2	I am appropriate in setting of examination question to enhance quality education.	-	15 1.7%	194 22.5%	653 75.8%	3.74	.48
3	I am a role model to my students so that they would be dedicated to their courses of study and be a better person in the future	-	30 3.5%	173 20.1%	659 76.5%	3.73	.52
4	My punctuality in classes help me cover up subject syllabus and encourage my students seriousness	-	30 3.5%	184 21.3%	648 75.2%	3.72	.52
5	I display high level of commitment and professionalism by using varieties of teaching methods when teaching in classes.	16 1.9%	22 2.6%	179 20.8%	645 74.8%	3.69	.62
6	I present subject content step by step with relevant examples to enhance student learning process of subject.	15 1.7%	15 1.7%	204 23.7%	628 72.9%	3.68	.60
7	I am able to complete the course outlines during the slated period of classes.	-	33 3.8%	207 24.0%	622 72.2%	3.68	.54
8	I give course outline and implement teaching and learning activities in accordance with the courses outlines which enhance mastering of subjects matter.	20 2.3%	67 7.8%	153 17.7%	622 72.7%	3.60	.73
9	I am accessible and could be contacted outside the class for explanation on difficult subjects and recognises the potentials of students	-	38 4.4%	278 32.3%	546 63.6%	3.59	.56
10	I use adequate, relevant and appropriate instructional materials for subject concept, knowing that effective use of instructional equipment integrate values in lessons.	5 .6%	43 5.0%	269 31.2%	545 63.2%	3.57	.62
11	My ability of being a good communicator, modeling positive	-	44 5.1%	294 34.1%	524 60.8%	3.56	.59

	behavior and maintaining discipline makes our classes interesting						
12	My class discussions are student-centered, which increases sense of responsibility among students	-	66 7.7%	377 43.7%	419 48.8%	3.41	.63
13	I give corrective feedback to students on assigns/exams/tests to helped them learn from their mistakes	5 .6%	82 9.5%	337 39.1%	438 50.8%	3.40	.68
14	I give assignments to students ahead of new topics in order to stimulate student interest and for a better implementation of the course	6 .7%	74 8.6%	477 55.3%	305 35.4%	3.25	.64
N = 862		Weighted average=3.60		Criterion mean = 2.50			

Table 3 shows that lecturers ability to provide students with activities relevant to lessons, setting realistic goals for them to accomplish and effective time management in the classroom enhanced their teaching process, ($\bar{x} = 3.79$) ranked highest, followed by lecturers' appropriate setting of examination question to enhance quality education, ($\bar{x} = 3.74$) and lecturers' being a role models to students through dedication to their courses of study ($\bar{x} = 3.72$). Furthermore, the weighted mean = 3.60 is greater than the criterion mean 2.50, therefore, the teaching effectiveness of lecturers in Colleges of Education was high based on self-evaluation.

Discussion of findings

The finding revealed that majority of the lecturers in colleges of education in south-west, Nigeria. The finding showed that there was an average rate of multimedia technologies utilisation in Colleges of Education in south west, Nigeria. Majority of the lecturers in Colleges of Education in south west, Nigeria seldomly use multimedia technologies, such as; Mobile Phones, Social Media, Internet Facilities, and Laptop/ i –pad for teaching. These findings is in variance with Tenopir (2010) finding on the use of multimedia technologies among scientists he revealed high level of multimedia technologies among scientists. Egunjobi and Sangodoyin (2013) identified the low use of mobile technologies, for lesson presentation in schools. Obirir-yeboah and Kyere-Djan (2016) high use of multimedia technologies in tertiary institution in Ghana.

Also the study revealed the library provides support for the use of multimedia technologies in Colleges of Education in south west. Although finding showed that the academic library need to improve on providing assistance for lecturers on the use of multimedia technologies in colleges of education in south west, Nigeria to improve effective teaching. This is in variance with Herselman (2003) and Costello (2000), who found and effective support system by the

library to the community it serve and in line with Purcell, Heaps, Buchanan and Friedrich, (2013).

Examining the teaching effectiveness of lecturers in Colleges of Education in south west, Nigeria. The findings revealed that lecturers teaching effectiveness was high. This is in line with the findings of Etebu (2010) on teachers' effective teaching lecturers in Niger-Delta universities in Nigeria. Ng and Komiya (2010) findings on mathematics teachers' effectiveness during innovation with computer-based exploratory mathematics classes.

The finding also showed that there was a significant relationship between Multimedia Technologies Utilisation and Lecturers' teaching effectiveness in Colleges of Education in south west, Nigeria. Hence, it was established that multimedia technologies utilisation will enhance lecturers' teaching effectiveness in Colleges of Education in south west, Nigeria. This result agrees with Neo and Neo (2009) who found a positive relationship with multimedia-mediated constructive learning and students' perceptions, also Ng and Komiya (2010) finding during an innovation with computer-based exploratory mathematics class. Obirir-Yeboah and Kyere-Djan (2016) found a relationship between the used of ICT and innovative teaching in tertiary institution in Ghana.

Conclusion and recommendation

This study investigated multimedia technologies utilisation as correlates of lecturers' teaching effectiveness in colleges of education in southwest, Nigeria. The variable has the possibility of improving teaching effectiveness in Colleges of Education. It was specifically found out that the academic library provide access and operational support to enhance effective use of multimedia technologies, although multimedia technologies utilisation in colleges of education is at the average level, while lecturers' teaching effectiveness is high. Also lecturers' multimedia technologies utilisation has relationship with their teaching effectiveness in colleges of education in south-west, Nigeria.

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

1. Government agencies in charge of tertiary education in Nigeria should monitor and encourage the implementation and use of multimedia technologies in the curriculum of Nigerian colleges of education to enhance effective teaching.

2. The government representatives (Governing council) and management team in the colleges of education should ensure the employment of vibrant librarians, media specialists and lecturers who can adapt to the technological change in our society for effective knowledge impartation in their students.
3. Lecturers should undertake mandatory practical training and retraining on multimedia technologies and its effective utilisation in education. These will provide them with practical and functional knowledge of multimedia technologies, internet and associated technologies for effective teaching.

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