Multimedia Facilities and its Influence on Teaching and Learning of Basic Technology in Universal Basic Education (UBE) Schools in Nigeria

Ojindah, Lyte O.[1], Wordu Chiduhiegem C.R.[2] & Gorden, Stanley U[3].
[1,2&3] Department of Technical Education
Ignatius Ajuru University of Education,
Port Harcourt.
revchidiwordu@yahoo.com

Abstract
The study examined multimedia facilities and its influence on teaching and learning of basic technology in universal basic education schools in Nigeria. The population of the study comprised all the 661 teachers and 5478 students of all the twenty-four (24) Junior Secondary Schools (JSS) of UBE in Emohua Local Government Area of Rivers State of Nigeria.. A total of 260 respondents (180 students and 80teachers) was the sample of the study selected through systematic sampling technique. One research question was posed and one hypothesis formulated for this study. A structured questionnaire validated and with reliability coefficient of 0.91 was the instrument used for data collection. Data collected were analyzed using statistical mean to answer the research question while Analysis of variance (ANOVA) was used to test the null hypothesis at 5% level of significance. The result revealed that multimedia facilities enhance and enable students to learn in a more effective way. It was therefore recommended among others that: more efforts are needed to create new programs using multimedia elements and multimedia authoring tools to fulfil a content-rich learning software and courseware to individual students; Basic technology teachers in Nigeria need to be trained on how to make use of multimedia facilities and the integration of computers into classroom teaching.

Keywords: *Multimedia Facilities, Basic Technology and UBE.*

Introduction

In 2004, the National Policy on Education was revisited and revised. The 6-3-3-4 educational system which required that an average Nigerian child would spend a minimum of 6 years in primary school, 3 years in junior secondary school, 3 years in senior secondary school and a minimum of 4 years in the university was restructured to 9-3-4- system backed up by the Universal Basic Education (UBE). The 9-3-4 educational system requires a 9 years of basic education (which combines 6 years of primary education and 3 years of junior secondary education), 3 years of senior secondary and a minimum of 4 years in university education. The vision of the UBE is that at the end of 9 years of continues education every child should have acquired appropriate and relevant skills and values and be employable in order to contribute his/her quota to national development (Adepoju and Fabiyi, 2011).

In other words, basic technology is one of the core pre-vocational subjects offered at the Junior Secondary Schools (JSS) level of the UBE in Nigeria. It is a preparatory core subject of vocational and technical education. It comprises of areas such as carpentry, joinery, masonry, machining, fitting, metal fabrication, motor mechanics, automobile, technical drawing,

electrical/electronics, and general works among others, (Datuba and Ekeyi, 2013). The basic technology course is meant to provide a holistic view of technology to students. The subject guidelines and contents have been carefully structured into a teaching sequence, which consists of clear explanations and descriptions of how results are obtained by using different tools, machines and materials. It is also a skill development course, which aimed at providing students with technical literacy for everyday life (Adeeoye and Olabiyi, 2011).

Multimedia facilities are subset of the wider issue of the use of information and communication technology (ICT) and have been viewed in different ways by many researchers. Marcelle (2000) described Multimedia facilities as a complex varied set of goods, applications and services used for producing, distributing, processing, transforming information (including) telecoms, TV and radio broadcasting, hardware and software, computer services and electronic media. Ogunsola and Aboyade (2005) viewed Multimedia facilities as a cluster of associated technologies defined by their functional usage in information access and communication of which one embodiment is the internet.

Today's learning contents are domain-specific products and that they dominate the world market. Also, domain-specific educational multimedia is directed to knowledge acquisition and skills development in the area of: arts, history, physics, literature, biology and so on. There is no doubt that multimedia facilities provides productive teaching and learning in order to increase people's creative and intellectual resources especially in today's information society. Through the simultaneous use of audio, text, multicolour images, graphics, motion, multimedia facilities gives ample and exceptional opportunities to the students to develop capacities for high quality learning and to increase their ability to innovate. Nigeria cannot afford to lag behind in using multimedia to raise the intellectual and creative resources of her citizens. This is particularly important for children whose adulthood will blossom in a cyber-environment entirely different from that of the present (Okwudishu, 2005). Consequently, Nigerian UBE schools need to be taught by radically new educational programme and variety of educational contents with multimedia facilities playing key role. There is no doubt that multimedia facilities can aid the instructional process and facilitate teaching and learning. Therefore, it is necessary for the present study to assess multimedia facilities and its influence on teaching and learning of basic technology in universal basic education schools in Nigeria

Statement of the Problem

In a rapidly changing world of global market competition, automation, and increasing democratization, basic education is necessary for an individual to have the capacity and capability to access and apply information. Such ability and capability must find its bearing towards information and communication technology in the global village(Chen-Yuan 2012).In other words, the ability to access and effectively utilize information is no longer a luxury but a necessity for development. Unfortunately, many developing countries, especially in Africa and particularly in Nigeria, are already on the wrong side of the digital device in the educational use of multimedia facilities (World Bank, 2002). If Nigerian wants to be a major player in the global market place of ideas and prepare her citizens for the new environment of today and the future, the country should embrace multimedia facilities because, it aids to teaching and learning and facilitates high level technological development towards individual's course of study (Shavinina, 2001).It is therefore, the concern of this study to examine multimedia facilities and its influence towardsthe teaching and learning of basic technology in UBE schools in Rivers State of Nigeria. Hence, the problem of this study.

Research Question

One research question guided the study:

To what extent do multimedia facilities influence teaching and learning of basic technology in UBE schools in Rivers State?

Hypothesis

Also, one null hypothesis was tested at 0.05 level of significance:

There is no significant difference in the mean responses of respondents on the extent to which multimedia facilities influence teaching and learning of basic technology in UBE schools in Rivers State.

Materials and Methods

The study employed descriptive survey design. The target population comprised all the 661 teachers and 5478 students of all the twenty-four (24) Junior Secondary Schools (JSS) of UBE in Emohua Local Government Area of Rivers State of Nigeria. Systematic random sampling technique was used by selecting randomly 80 teachers and 180 students making a total sample of 260 respondents in eight (8) UBE schools in Emohua Local Government Area of Rivers State, Nigeria.

The instrument used for the collection of data was a structured questionnaire tagged 'Multimedia Facilities and its Influence on Teaching and Learning of Basic Technology in Universal Basic Education Schools in Nigeria (MFITLBTUBESN)' with 13 items on a 4-point scale of Strongly Agree (SA) =4, Agreed (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. The instrument 'CSHMPCFN' was validated by three experts. The reliability of the instrument was ascertained using Cronbach Alpha reliability coefficient was used to determine the reliability of the instrument on the data collected through a pilot test on 50 respondents selected from indigenous and multinational firms operating in Rivers state who were not part of the sample of the study. The coefficient of reliability yielded a reliability coefficient of 0.91. This was believed to be high enough for the instrument used for the main study.

The researchers personally went to the schools to administer the 360 copies of the questionnaire. All were properly completed and retrieved on the spot. The statistical mean and standard deviation was used to analyze the data collected and answer the research question. An item with a calculated mean value equal or greater than 2.50 (2.50 – 4.00) was regarded as accepted, while the calculated mean of an item less than or equal to 2.49 (0 - 2.49) was regarded as not accepted. An inferential statistics of Analysis of variance (ANOVA) was used to test the only null hypothesis at 0.05 level of confidence. It was decided that where F-calculated value was equal or greater then table F-value, it indicates significance difference, so reject the null hypothesis but otherwise, accept the null hypothesis.

Results

The results of the analysis of the study are presented in Tables 1 and 2 according to the research questions and hypothesis.

Table 1: Respondents' Mean Score and Standard Deviation on the extent to which multimedia facilities contribute influence teaching and learning of basic technology in UBE schools in Rivers State

S/N	ITEMS	MEAN Students	Teachers	Avg.	Sd.	Dec.
1.	Multimedia facilities help in making teaching and learning of basic technology more interesting.	3.33	2.61	2.97	1.11	Acc
2.	Multimedia facilities aid the instructional process and facilitate students' learning in basic technology	2.96	2.67	2.82	1.27	Acc
3.	Multimedia facilities improve knowledge acquisition and skills development in basic technology.	3.07	2.53	2.80	0.97	Acc
4.	Multimedia facilities are directed to shaping workforce opportunities of students of basic technology after graduation.	2.93	2.54	2.74	1.16	Acc
5.	Multimedia facilities increase students' interest, creative and intellectual resources in basic technology	3.13	2.15	2.64	0.75	Acc
6.	Multimedia facilities aid to produce technologically proficient and efficient students in basic technology.	3.11	1.90	2.51	0.85	Acc
7.	Multimedia facilities help teachers to efficiently evaluate the students in basic technology.	3.29	2.51	2.90	1.00	Acc
8.	Multimedia facilities enhances proper class room management during basic technology lessons	3.48	2.25	2.87	0.94	Acc
9.	Multimedia facilities enhance quality of work of both teachers and students in basic technology	3.01	2.61	2.81	1.12	Acc
10.	Multimedia facilities make both teachers and students to be up-to-date in their teaching and learning of basic technology respectively.	3.09	2.12	2.61	0.92	Acc
11.	Multimedia facilities help teachers to reach out to colleagues in any part of the country.	3.00	2.25	2.63	0.90	Acc
12.	Multimedia facilities aid students to do assignments in basic technology	3.17	2.45	2.81	0.94	Acc

13.	Multimedia facilities help teacher in research work and also when planning lessons	2.99	2.13	2.56	0.76	Acc
Average		**3.12**	**2.36**	**2.74**	**0.91**	**Acc**

KEY: *Av. = Average mean of Students and Teachers, Sd. = Standard Deviation, Dec. = Decision, Acc = Accepted*

Table 1 revealed that all the items investigated above were all accepted. This signifies that, the respondents (Students and Teachers) accepted that multimedia facilities contribute to effective teaching and learning of basic technology in UBE schools in Rivers State

Table 2: One way ANOVA test of difference on the extent to which multimedia facilities influence teaching and learning of basic technology in UBE schools in Rivers State

Source of variation	Ss	df	Ms	F-cal	F-critical	P	Rmk
Between groups	34528.35	1	34528.35				
Within groups	2861.87	258	11.09	3113.48	3.84	0.05	Sig
Total	37390.22	259	34539.44				

KEY: *Ss.= Sum of Squares, df. = degree of freedom, Ms. = Mean square, Rmk = Remark, Sig. = Significant*

From Table 2, since the calculated value of F-ratio (3113.48) was greater than the critical value of z-ratio (3.84); the null hypothesis was rejected indicating that there is significant difference in the perception of respondents on the extent to which multimedia facilities influence teaching and learning of basic technology in UBE schools in Rivers State.

Discussion

The study revealed that multimedia facilities influence teaching-learning of basic technology in the following ways: it enhance quality of work of both teachers and students; it makes teachers to be up-to-date in their teaching and learning of basic technology; it helps teachers to reach out to colleagues in other part of the country; it enhance efficiency of teachers and students interest; it helps teachers to efficiently evaluate the students and also enhances classroom management. This finding corroborates the study of Kwache (2007) who submitted that multimedia facilities makes teaching and learning process more efficient, productive and facilitate pedagogical activities.

Conclusion

If the educational sector of our schools throughout the state is to maintain maximum standards, it should be provided with adequate funds, infrastructural facilities in term of modern classrooms equipped with multimedia facilities which are connected to the internet and highly qualified personnel that can effectively, utilize these resources.

There is no doubt that multimedia facilities influences instructional process and facilitate teaching and learning, especially basic technology in UBE schools. The paper therefore concludes that multimedia facilities enhance and enable students to learn in a more effective way. The paper therefore recommends the followings among others and it is believed that if employed accordingly will go a long way to improve the teaching and learning and learning of

basic technology in UBE schools in Nigeria;

1. More efforts are needed to create new programs using multimedia elements and multimedia authoring tools to fulfil a content-rich learning software and courseware to individual students.
2. Basic technology teachers in Nigeria need to be trained on how to make use of multimedia facilities and the integration of computers into classroom teaching.
3. Basic technology teachers should be provided with effective tools, techniques, and assistance that can help them develop computer based projects and activities specially designed to raise the level of teaching in required subjects and improve students' learning

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