AVAILABILITY AND USABILITY OF INTERACTIVE BOARD IN TEACHING AND LEARNING IN TERTIARY INSTITUTIONS IN ANAMBRA STATE

Mole Lilian Chinyere[1], Okoro Joy Oluchukwu[2], & Okoafor Alice O[3]

[1]Department of Industrial Technical Education, University of Nigeria, Nsukka
Email: lilian.mole@unn.edu.ng
[2]Department of Home Economics and Hospitality Management
University of Nigeria, Nsukka
[3]School of Sciences, Federal College of Education Technical Umunze

Abstract

This work centered on the availability and usability of interactive board in teaching and learning in government-owned tertiary institution in Anambra state. A survey research design was used for the study. Two research questions and two hypotheses guided the study. Mean and standard deviation were used in analyzing the data. The study population is four thousand, four hundred and five (4405). Random sampling technique was used to select two out of six government-owned tertiary institutions in Anambra state. One hundred and fifty-one students and six lecturers were selected using stratified random sampling from each of the two tertiary institutions. A sample of 314 respondents were used for the study. Major findings of the study showed that interactive boards are available and utilized, but some of them are inadequate. Based on the findings of the study, the following recommendations were made: Government and management should help in providing fund for the relevant interactive boards, lecturers and students should be trained to acquire necessary skills in the use of interactive whiteboards, lecturers and students should be exposed through seminars and workshops on the knowledge and skills relevant for utilization of interactive whiteboard for instruction.

Keywords: Availability, usability, interactive board, teaching and learning

Introduction

Each and everyone has, from birth, been learning and perhaps, from childhood been teaching. Much of what one does as a teacher depends upon one's duties, especially to pupils. How teachers understand their work, "teaching", very much affects what they actually do in the classroom. One of the most important tasks a teacher has to undertake is to be clear about the nature of the central activity which professionally involves him (Ossai, Eze, Chineke & Uwakwe, 2020). As well as the methods, the strategies and the teaching materials and equipments he/ she uses in content delivery.

Interactive smart board, is known as an electronic whiteboard. It is a classroom tool that allows images from a computer screen to be displayed onto a classroom board using a digital projector. It is commonly known as smart board or whiteboard. It is a large interactive display in the form of a whiteboard. The teacher or a student can "interact" with the images directly on the screen using a pointer or even a finger.

Concept of interactive whiteboards is the means that employs mobile and wed based technology to create highly interactive platforms via which individuals and community share, co-create, discuss and modifies user-generated content (Onyemauche, Mbanusi, Ezeh & Nkwo, 2020). The interactive whiteboard is a powerful benefit to the classroom. It opens up the students to collaboration and closer interaction to the lessons and by this multimedia content can be shared and used in lectures, keeping students engaged. They are used in a variety of settings, including classrooms at all levels of education, in corporate board rooms and work groups in training rooms for professional sports coaching in broadcasting studios and others.

Learning is the permanent acquisition and habitual utilization of the newly acquired knowledge or experience. Learning must bring about permanent and ephemeral changes in the person. The changes must be in knowledge, character, in skill or in attitude (Eze & Omeje, 2018; Oliobi Okoli, Okonkwo, Oliobi and Mole, 2019) Learning implies that whatever is said to have been learned is clearly perceived, retained, built over time, can be put to work, enhances and affects behavior more or less permanently.

Learning according to Hornby (2012), is gaining knowledge or skill by studying from experience, from being taught. Learning can be seen as "growing or changing as a result of experience. That is, a modification of personality resulting from experience. The changing, growing or modification of experience must be evident where there is noticeable change. It becomes obvious that learning is some specific achievement such as believing something one did   not believe before, knowing something one did not know before, acquire a habit one did not have before and so on. The acquiring of new skills, knowledge, ideas, values and experiences which enable the learner to modify or change his action is nothing but learning.

Teaching denotes the various activities undertaken by a more experienced and more knowledgeable person in order to enable learners learn. Teaching today is an invaluable asset to every society, because all the profession cannot exist without classroom teaching. In everyday life, there are numerous circumstances in which people learn without a teacher. Students also learn many things when their teacher is not teaching through their peers.

A teacher is a person who provides education for pupils and students (Onuoha & Nwanorim, 2014). The teachers are the most outstanding and significant factor in education delivery. Teachers have been teaching students over the years. Despite these efforts still, one of the major problems which confront the Nigerian education system is the issue of poor performance of students in senior secondary schools certificate examination (SSCE) (Nzelum, 2010). According to Sofowora & Egbedokun (2010), there is sometimes narrowness in the range of teaching methods characterized by over long expositions, over-directed style inhibiting curiosity, initiative and discussion, all of which reduce opportunities for developing thinking in learners.

For effective teaching and learning the teacher must be able to select and combine the most appropriate strategies and materials during content delivery. The teacher needs good teaching aids that will provide the learner with concrete and reallife experience to exemplify and clarify more meaningfully some of the principles and concepts in education. The use of ICT as a recourse material in the teaching and learning becomes vital. The usefulness of resource materials like interactive boards depends on what the teacher makes out of them. Proper handling of these materials in the classroom is necessary. The teacher needs the basic knowledge and skills necessary to make the fullest use of available resource materials.

Availability of something means what you can get, buy or find, Hornby (2012). It has to with available resources/facilities readily/ freely/ publicly/ generally available, free of charge from the school. However, availability and accessibility/ usability of instructional materials appear to be one of the greatest challenges to both lecturers and students in colleges of education.

.   The ICT, according to Unekwe, (2018) involves all the technologies employed in order to facilitate the collection, storage, retrieval and communication by the fastest means. ICT embraces all modern systems for processing and communication in data, text, image, voice form and electronic media of which interactive board is one. The usefulness of ICT and electronic media depends on the availability and what the teacher makes out of them. Proper use and handling of these materials in the classroom is necessary. Unless the classroom teachers use these resource materials and direct the learner's attention to what they should look for, the students will not learn much as supposed. There is therefore need to find out if interactive board is available in tertiary institutions in Anambra state. Interactive boards are supposed to be available in colleges of education. If they are available are they being used by both lecturers and students in colleges of education in Anambra state for effective teaching and learning?

Statement of problem
The importance of education in the life of an individual and society at large cannot be overemphasized. Some students in schools encounter many problems among which is due to lack of qualified teachers and equipment like digital whiteboard, interactive whiteboard and computers among others. One of the problems that is attracting public concern and outcry in Nigeria today is the decline in the performance of students in public examination. These students are taught mainly by graduate teachers from colleges of education and universities. This is due to lack of equipment even when equipment are available some teachers find it difficult to use the equipment.

The decline in effective teaching and learning will have a long term educational disaster in Nigeria at large. The problem needs to be put in place. in order to achieve more effective and promising teaching and learning of courses in tertiary institutions. Therefore there is need to carry out an investigation in order to find out the availability and usability of interactive board in teaching and learning in tertiary institutions in Anambra state.

Purpose of study

The purpose of this study is to find out the availability and usability of interactive board by undergraduate students of colleges of education in Anambra state. Specifically, the study will:
1. Find the availability of interactive whiteboards in Tertiary Institutions in Anambra state.
2. Determine the level of utilization of interactive whiteboard by lecturers and students of Tertiary Institution in Anambra state.

Research questions

The following research questions guided the study
1.   What resources are available for effective teaching and learning in Tertiary Institutions in Anambra State/?
2.   To what extent do lecturers and students of tertiary institutions access/ use interactive boards in teaching and learning?

Hypotheses

H_{O1}: There is no significant difference in the mean responses of lecturers and students on the availability of interactive board in the effective teaching and learning in Tertiary Institution in Anambra State

H_{O2}: There is no significant difference between the mean responses of lecturers and students on the usability of interactive boards available in the tertiary Institution in Anambra State.

Methodology

Design of the study

The research design used for the study was a survey research design. It sought to find the availability and usability of interactive white board in tertiary institutions in Anambra State. This is done by collecting and analyzing data from respondents considered being representative of the entire population.

Area of the study

This study was carried out in Federal College of Education (T) Umunze and Nwfor Orizu College of Education Nsugbe in Anambra state.

Population, Sample and Sampling Techniques

The population of the study was all the students and lecturers in the two sampled colleges of education in Anambra State. The total population of students is 3994 and 411 lecturers giving a total of four thousand four hundred and five (4405). One hundred and fifty one students (151) and six (6) lectures were randomly selected from each of the two (2) selected tertiary institutions, Federal College of Education t Umunze and, Nwfor Orizu College of Education Nssugbe, making a sample size of three hundred and ten (314). Random sampling technique was used to select two out of the six government owned tertiary institutions in Anambra state.

Instrument for Data Collection

The instrument for data collection was questionnaire which were constructed using 4-point scale, meant to elicit information from the respondents.

Validation and reliability of the Instrument

The questionnaire items were validated by three experts. The corrections made by the validators were incorporated in the final copies of the instrument.

Method of Data Collection

The researcher administered the questionnaire to the respondents with some research assistants. The copies of the questionnaire were collected immediately after completion to avoid loss of time and problems that may arise from late returns.

Method of Data Analysis

All the data collected were analyzed using mean and standard deviation.

Results

The data collected were analyzed and presented in statistical Tables showing the mean responses of respondents. This table has been grouped with respect to two research questions.

Research Question One: What resources are available for effective teaching and Learning among lecturers and students in tertiary institutions in Anambra state?

Table 1: Mean Responses of lecturers and Students on the Availability of interactive board for Effective Teaching and learning in tertiary institutions in Anambra state.

ITEM	SA	A	D	SD	N	X	S.D	Remarks
1. Internet Resources	141	124	36	13	314	3.1	1.1	Accepted
2. Projectors	145	92	55	22	314	3.2	1.1	Accepted
3. Electromagnetic white boards	50	45	117	102	314	2.2	1.1	Rejected
4. Interactive white boards	145	103	32	34	314	3.4	0.6	Accepted
5. Screen board	20	42	156	96	314	2.0	0.7	Rejected
6. Computers/ laptop	101	155	46	12	314	3.1	1.0	Accepted
Grand mean						2.8		

Table one showed that items 1, 2, 4 and 6 obtained a mean rating scale of 3.1, 3.0, 3.4 and 3.1 respectively which falls on the performance cut-off marks for acceptance. In other words, the respondents agreed with the items and rejected item 3 and 5 with rating scale of 2.2 and 2 .0 respectively. Thus, the grand mean is 2.8., showing that interactive boards are available but to a low extent in the two tertiary institutions studied.

Research Question Two: To what extent do students and lecturers of higher institutions access/use interactive whiteboards in tertiary institutions?

Table 2: Mean Responses of lecturers and Students on the extent of utilization of interactive white board in colleges of education

S/N	ITEMS	VHE	HE	LE	VLE	N	X	SD	Remarks
7	Students and lecturers utilize ICT centre in your institution	144	123	35	12	314	3.3	0.7	Accepted
8	Lecturers and students utilize projectors in my school.	135	94	43	42	314	3.0	1.1	Accepted
9	Computers in your school institutions are for lecturers and students use	145	105	30	34	314	3.2	0.7	Accepted
10	Interactive white boards are available for students and lecturers use	154	119	22	19	314	3.3	0.7	Accepted
11	Lecturers and students utilize laser scanner in institutions in Anambra state	50	45	116	103	314	2.1	1.1	Rejected
12	Students and lecturers use electromagnetic white boards in institutions in Anambra state	20	42	155	97	314	2.0	0.7	Rejected
13	Students and lecturers utilize interactive white boards	149	124	23	18	314	3.3	0.7	Accepted
	Grand Mean						2.9		

From table two, it revealed that items 7, 8, 11, 12, and 13 were accepted but items 9 and 10 were rejected. It shows that the respondents agreed that lecturers and students utilize interactive boards but to a low extent. Thus, grand mean of 2.9.

Ho₁: There is no significance difference in the mean response of the lecturers and the students on the interactive board available for effective teaching and learning in colleges of educations in Anambra state.

Table 3: Summary of table for z-test of difference between mean responses of lecturers and students on the interactive board available for teaching and learning in tertiary institutions in Anambra state

Composition	No	Mean	SD	Z-Cal	Z-Critical
Lecturers	10	2.73	1.63	0.12	1.96
Students	300	2.73	1.96		

Tested at 0.05 level of significant.

The result in Table 3 showed that the Z calculated 0.12 and is less than the critical z. therefore the hull hypothesis was accepted and uphold. This means that there is no significance difference between the mean response of the lecturers and students on the various local resources available for effective teaching and learning of basic science.

Ho₂:

Table 4: Z-test of difference between mean responses of male and female respondents on the interactive board available for teaching and learning in colleges of education in Anambra state

Composition	No	Mean	SD	Z-Cal	Z-Critical
Male	36	3.0	1.7	0.82	1.96
Female	274	2.9	1.7		

Tested at 0.05 level of significant

Since the z calculated z calculated is less than z-critical of 1.96, the hypothesis of no significant difference is not rejected.

Discussion of the Findings

The findings on the availability & usability of interactive boards in teaching and learning in colleges of education, shows that the interactive white boards are available but utilized to a low extent. The availability and utilization of these interactive white boards will help in the effective teaching and learning in tertiary institutions if they are available and utilized to a high extent. This is in line with Onyemauche, Mbanusi, Ezeh an Nkwo (2020) who stated that for teaching and learning to be effective, interactive white board have to be adequately available.

Data analyzed on the hypothesis shows that there is no significance difference between the mean response of the lecturers and students on the availability and usability of interactive board for teaching and learning in colleges of education in Anambra state.

The implication of this is that interactive white boards are available but to some extent and this may lead to ineffectiveness in teaching and learning in colleges of education.

Recommendations

Based on the findings of the study, the following recommendations were made:
- Government and management should help in providing fund for the relevant interactive white Board
- , - Lecturers and students should be trained to acquire necessary skills in the use of interactive white boards,
- Sufficient interactive white boards should be made available in tertiary institutions,
- -Lecturers and students should be exposed through seminars and workshops on the knowledge and skills relevant for utilization of interactive white board for instruction.
- Lecturers and students should be motivated to have interest in using interactive white boards in teaching and learning,

References

Eze, R. I. and Omeje G.N.,(2018).availability of instructional materials as tools to enhance teaching and learning in secondary schools in Nnsukka education Zone. Enugu state. *International journal of management , Social science, peace and conflict studies and education*, *1*(1).

Haliru U. & Zuguru, M.U. (2014). Evolving climate change curriculum in Nigeria: The role of senior secondary geography education. Journal of Curriculum Organization of Nigeria (CON) vol. 21. 17-28

Hornby, A.S. (2012). Oxford advanced learner's dictionary of current English twelfth   edition. Oxford University Press

Nzelum, V.N. (2010). Study on the difficult concepts in senior secondary school biology curriculum. Anambra STAN median edition (40-49).

Oliobi J. I., Okoli S.O., Okonkwo C.C., Oliobi F.U. and Mole L.C. (2019). Mentoring   in secondary schools science and technoiogy in nigeria. Multidisciplinary journal of Education, research and development. Vol 3 no 1

Onuoha, C.U. and Nwanorim, N.T (2014). Teacher preparation and climate change curriculum at the senior secondary school level in Nigeria. Journal   of Curriculum Organization of Nigeria(CON) Special   edition 103-113.

Onyemauche U.C., Mbanusi C.E., Ezeh I.A. and Nkwo M.S.(2020). The level of   ICT tools adoption in teaching and learning of computer science in the Public secondary schools in Aguata local government area of Anambra State.

Ossai R.E., Eze R.I., Chineke S.O. and Uwakwe C. (2020). Computer: an   Innovative instructional material for the development of entrepreneurial Skills in teaching and learning of English language for sustainable development. Journal of institute of Education UNN. Vol. 32 issue.

Sofowora O.A. and Egbedokun A.(2010). An empirical survey of technology application in teaching geography in Nigerian secondary schools. Ethiopian Journal of Environmental Studies and Management 46-54

Unekwe C. I . (2018). Internet. J. U.Okwor (edited). Fundamentals of computer   science. AnnyCO Publishers Nigeria.