TEACHING AIDS/MATERIALS AS A PANACEA FOR EMPLOYMENT AND EFFECTIVE PERFORMANCE OF STUDENTS' IN BUILDING TECHNOLOGY IN TECHNICAL COLLEGES OF EDUCATION IN NIGERIA.

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Abstract

The use of teaching aids promotes closer and effective communication between the teacher and the learners. This teaching aids could be printed such as textbooks, workshops and non-printed such as films, videotapes, television. Also, there are different instructional materials to be use in teaching basic subject effectively but not all topics require the same type and quality of material. Hence, instructional materials are classified in different ways such as audio, audio-visual, and visual. In order to achieve the objectives of Building Technology, any materials to be used as teaching aid must have the following characteristics such as, colour, visibility, flexibility, sufficiency, simplicity, appropriate, artistic, bright, clear, brief, and clean. Two research questions were used for the study. The design of the study was descriptive survey research design. The population of the study comprised of 100 students in Building construction trade of different levels in Nigeria in which 45 students in building construction trade from Federal College of Education Technical Akoka and 45 students from Adeniran Ogunsanya College of Education Ojo, Ijanikin, Lagos State. Were randomly sampled. A structural questionnaire with twenty (20) items was used as instrument for data collection and it was validated by three expects of project supervisor for modification before it was administered to the respondents. The data collected were analysed using weight Average mean and percentage distribution. The finding show that there is inadequate use of teaching aids and strongly disagree that teaching aids are used frequently in practical courses during the process of teaching Building Technology. It was recommended that educational manager's school administrators should ensure that Teaching aids are provided for lectures to teach effectively.

Keywords: Instructional Materials, audio-visual, effective communication, building technology

Introduction

Building technology as an important and integral part of Vocational and Technical education cannot be overemphasized. It represents core indices of national development. A major distinction between an advanced country and developing one is to a large measure the difference between their levels of scientific and technological development in various areas

of Technology Education, Building Technology inclusive. Thus, it is no exaggeration to assert that Technology Education is also the bedrock upon which advance nations are based (Egboh, 2009). The Federal Ministry of Education, Science and Technology (2010) states the goals of the curriculum of the Senior Secondary School in Building Construction as the Senior Secondary School students will achieve the following objectives:

- Understand the processes, materials, tools and equipment used in building construction.
- Construct or supervise the construction of a simple residential building.
- Prepare for further studies in the construction or allied professions.

In order to achieve the objectives of this course, it is suggested that a teaching strategy that involves observation, field trips and active participation of learners in the construction of simple building works should be used. Since the course is intended to be practically oriented, less theory should be taught. There is lack of technological capacity which has made developing (Third World) nations to be relatively poor. Developing nations are poor because of their negligible investment in science and technological know-how and their people do not have the capacity to inform themselves in a competitive knowledge driven world. Increased competition in a global market place, adds to the need and urgency to get the right people, with the right skills, in the right place, at the right time as well as teaching aids that will help in fostering the development of the nation through students who are seen as future leaders in the society (Odu, 2015). Agina-Obu (2015) defined teaching aids as concrete or physical objects which provide sound, visual stimuli or both to the sense organs during teaching. Ikerionwu (2010) referred teaching aids as objects or devices which help the teacher to make a lesson much clear to the learner. Ogwa (2012) is of the view that a teacher who uses teaching aid to deliver his/her lesson will convey more facts to the students at short intervals than one who use only oral speeches for lesson delivery. He also stated in four ways the importance of teaching aids during lesson presentation as follows:

- The teacher saves efforts
- The learner is active
- Classification of concept
- Retention of learned material

Teaching aids are materials that are used to aid in the transference of Information from one to another. These Teaching aids could include power point presentations (visual aids), books, articles, materials for project development. They are also content that conveys the essential knowledge and skills of a subject in the school curriculum through a medium or a combination of media for conveying information to a student. The term includes a book, supplementary materials, a combination of a book, workbook, computer software, magnetic media, DVD, CD-Rom, computer course ware, online services, or an electronic medium, or other means of conveying information to the student or otherwise contributing to the learning process through electronic means, including open- source teaching aids.

Teaching aids are also the tools used in educational lessons, which includes active learning and assessment. Basically, any resource a teacher uses to help him teach his students is an instructional materials or teaching aids. Traditional Resources, Graphic Organizers, Teacher – made Resources. Teaching aids are educational resources used to improve students' knowledge, abilities, and-skills, to monitor their assimilation of information, and to contribute to their overall development and upbringing. Teaching aids are kind of tools or equipment that can help effectively the instructor in theory teaching classroom or in practical assessment. Teaching aids are also the physical tools that facilitate teaching as auxiliary tools in text, visual or audio media both in print and digital format. Instructional materials are used to enhance learning (Ogwa, 2012).

The advantages of teaching aids in teaching are that it can be used with groups of all sizes (Agina-Obu, 2015). It gives the students an opportunity to hear and see the same information. Teaching aids are also supplements to the materials composed by a teacher. Advantages of these materials are that they add different perspectives to the teachers' knowledge, and provide additional activities for students to perform. Critically, looking at the effect of teaching aids, teaching aids make understanding concepts easier and increase attentions when learning something.

From the different points of view above, therefore teaching aids is defined as any form of materials be it electrical or non-electrical tools or equipment (media) produced or not produced by an instructor which he uses to bring proper understanding in order to help him transfer skills, ideas, knowledge etc to the learner effectively and efficiently. Teaching aids or resources are available from many sources. Modern education faces lot of problems. The attempt at solving these problems, which involves the use of, organized combination utilization of people, materials facilities, equipment and procedures to achieve the desired teaching aids, instructional media and educational media virtually mean the same thing. They all involve media materials derived from communication revolution, which can be used to promote teaching learning process.

The tracking of academic performance fulfills a number of purposes. Areas of achievement and failure in a student's academic career need to be evaluated in order to foster improvement and make full use of the learning process. Results provide a framework for talking about how students fare in school and a constant standard to which all students are held. Performance results also allow students to be ranked and sorted on a scale that is numerically obvious, minimizing complaints by holding teachers and schools accountable for the components of every grade.

Performance in school is evaluated in a number of ways. For regular grading, students demonstrate their knowledge by taking written and oral tests, performing presentation, turning in homework and participating in class activities and discussions. Teachers evaluate in the form of letter or number grades and side notes, to describe how well a student has done. At the state level, students are evaluated by their performance on standardized tests geared toward specific ages and based on a set of achievement of students in each age group are expected to meet.

Statement of the Problem

Considering the need for technological development, coupled with the fact that Building Technology is a very vital subject for technology development, its teaching and learning as well as students' academic performance in it has become a source of concern to the researcher. It is surprising that despite the efforts of government, individuals and non-governmental agencies in enhancing the educational development in Nigeria, vocational and technical education students has shown that the general academic performance of students on basic technologies has declined greatly. It was also observed that poor performance of students in Building technology has been so high in many Nigerian colleges of Education in the recent years (Federal Ministry of Education 2014). This raises a question on the method and instructional strategies employed. Teachers seem to adopt the oral and theoretical method as a way of teaching and learning the subject rather than using teaching aids, lacking the full potential to identify basic technologies around them. (Olagunju, 2010). Esu et al (2014) affirmed that the use of teaching aids facilitate learning of abstract concepts by helping to concretize ideas and stimulate learners' imagination.

Inefficiency in relating theoretical teachings with technological demands in terms of building technology inventions. Moreover, teaching aids help to increase active participation in the learning process while saving teacher the much energy involved in all verbal instructions. Decrease in the use of teaching aids or total lack or damage of the teaching aids can be contributed from improper course work. In the same vein, Mathew (2013) stated that the use of teaching aids make teaching and learning effective as it enables learners to participate actively in lecture-room instruction. The question now is, to what extent does the use of teaching aids affect learning and students performance in building technology in tertiary institutions?

Purpose of the Study

The study focused on the effect of teaching aids on students' performance in Building Technology. Specifically, the study sought to:

1. Identify the availability of teaching aids used by the teachers in teaching building technology as a course in Technical education.
2. Identify the utilization of teaching aids used by the teachers in teaching building technology as a course in Technical education.

Research Questions

Based on the aims of the aforementioned purpose of the study, the following questions were proffered in order to elicit vital information/solutions to curb the menaces of the study which includes:

1. To what extent are teaching aids available for teaching building technology in Technical Colleges Education?

2. To what extent are teaching aids being utilized in teaching building technology in Technical College Education?

Summary of Literature Review

The availability of the use of teaching aids in educational sector cannot be overemphasized. Teaching aids include materials that facilitate learning for better results. They are any device use to assist the instructor in the presentation of a lesson, teaching of the lesson and facilitate students learning of the subject matter. They include those subjects that are commercially acquired of improvised by the teacher to make conceptual abstraction more concrete and practical to the learners. However, effective instruction in Building Technology subject cannot be fully accomplished without the availability and utilization of teaching aids.

The use of teaching aids promotes closer and effective communication between the teacher and the learners. This teaching aids could be printed such as textbooks, workshops and non-printed such as films, videotapes, television. Also, there are different instructional materials to be use in teaching basic subject effectively but not all topics require the same type and quality of material. Hence, instructional materials are classified in different ways such as audio, audio-visual, and visual. In order to achieve the objectives of Building Technology, any materials to be used as teaching aid must have the following characteristics such as, colour, visibility, flexibility, sufficiency, simplicity, appropriate, artistic, bright, clear, brief, and clean. Therefore, teachers should make teaching aids available and utilize them for effective and efficient teaching to take place. This study will enable teachers to understand the best way to handle teaching aids during lesson delivery to achieve the objectives of discipline.

Research Design

This study adopted descriptive design which was used to unveil the effect of teaching aids on student performance in Building Technology in Colleges of Education in Nigeria.

Population of the Study

The population of this study comprised of 100 students (Building Technology of different levels) in College of Education in Nigeria offering Building Trades as a course.

Sample and Sampling Techniques

Simple and Random Sampling Technique was used to select ninety (90) out of the whole population from two different institutions in Lagos State. Forty-five (45) students were selected randomly from the institutions listed below:

- Federal College of Education Technical Akoka, Lagos State
- Adeniran Ogunsanya College of Education Ojo, Ijanikin, Lagos State.

Instrument for Data Collection

The instrument for data collection is a questionnaire. The questionnaire was divided into two sections. Section A; focused on the demography of the participant which include, level of the learner. While section B contains twenty items which were systematically constructed using four points' types of Likert scale to answer the research questions. Participants were expected to indicate their level of agreement or disagreement to the statement; based on the

response patterns of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD)

Validity of the Instrument

To ensure the content and face validity of the instrument, the draft copy of the questionnaire was given to the project supervisor for modification. Based on the supervisor's corrections, the final copy was be prepared and used for data collection.

Reliability of the Instrument

The researcher intends used a test retest method with a correlation co-efficient of 0.78 which helped ensured the reliability of the research instrument. The questionnaires were based on the topic of the study.

Method of Data Collection

The questionnaires for data collection were administered to the respondent directly. Respondents were briefed on how to complete the questionnaire and assured them of the importance and confidentiality of the information to be supplied.

Data Presentation

This chapter deals with analysis and interpretation of the data collected in the process of this research work. This exercise aimed at proving the validity or other wise of research questions generated on chapter one.

Data Analysis of Research Questions

A total number of ninety (90) questionnaires were administered and returned. Therefore, the collected questionnaires were used for the analysis. The statements for research questions were also presented in table and frequency counts were used to analyze them. But decisions on each statement were based on the weighted mean rating for each statement.

Table 1: Distribution According to Level

Variables	Frequency	Percentage
100Level	20	22%
200Level	45	50%
300Level	25	28%
Total	**90**	**100%**

From the above table, it could be observed that 20 respondents representing 22% were in 100level, 45 respondents representing 50% were in 200level while 25 respondents representing 28% were in 300level. From this, it could be deduced that most of the respondents were in 200 levels

Table 2:

Research Question 1: To what extents are Teaching Aids available for Teaching Building Technology in Technical Education?

S/N	STATEMENTS	SA	A	D	SD	N	X	Remark
1.	ICT devices are provided in my College for teaching and learning.	4x6 24	3x10 30	2x43 86	1x31 31	90 171	1.90	Disagreed
2.	Practical courses related materials are easily accessible.	4x3 12	3x7 21	2x37 74	1x43 43	90 150	1.66	Disagreed
3.	Sand and cement mixer are used by teachers for teaching.	4x15 60	3x12 36	2x33 66	1x30 30	90 192	2.13	Disagreed
4.	Head pan is always available and accessible.	4x15 60	3x19 57	2x39 78	1x17 17	90 212	2.35	Disagreed
5.	Video tape players and recorders are available for teaching.	4x32 128	3x26 78	2x17 34	1x15 15	90 255	2.83	Agreed
6.	Spade is accessible during teaching.	4x20 80	3x20 60	2x23 46	1x27 27	90 213	2.36	Disagreed
7.	Technical Drawing materials are available.	4x14 56	3x22 66	2x42 84	1x12 12	90 218	2.42	Disagreed
8.	Trowel is easily accessible.	4x12 48	3x8 24	2x46 92	1x24 24	90 188	2.08	Disagreed
9.	Building machines are easily accessible.	4x14 56	3x26 78	2x40 80	1x10 10	90 224	2.48	Disagreed
10.	Plum is easily available and accessible.	4x22 88	3x20 60	2x38 76	1x10 10	90 234	2.60	Agreed

From the statement above, the respondents disagreed that ICT devices is provided in their school. They also disagreed that video tape players and recorder, computer overhead projector, building machines, trowel as well as head-pan are easily available and accessible for teaching but agreed with statement 5 and 10 that Video tape players and recorders are available for teaching, Plum is easily available and accessible.

Table 3:
Research Question 2: To what extent are Teaching Aids being utilized in Teaching Building Technology in Technical Education?

S/N	Statements	SA	A	D	SD	N	X	Remark
11.	It facilitate learning of abstract concepts	4x38 144	3x45 135	2x5 10	1x2 2	90 291	3.23	Agreed
12.	It increases active participation in the learning process	4x31 124	3x35 105	2x12 24	1x12 12	90 265	2.94	Agreed
13.	It simplifies the teaching and learning processes	4x33 132	3x42 126	2x8 16	1x7 7	90 281	3.12	Agreed
14.	It assists the teachers to teach more effectively	4x36 144	3x32 96	2x13 26	1x9 9	90 275	3.05	Agreed
15.	It helps the teachers to teach with ease	4x29 116	3x34 102	2x17 34	1x10 10	90 262	2.91	Agreed
16.	It enable the students to learn more readily	4x27 108	3x35 105	2x16 32	1x12 12	90 257	2.85	Agreed
17.	It enable learners to learn without stress	4x38 152	3x26 78	2x14 28	1x12 12	90 270	3.00	Agreed
18.	They give an accurate impression of the concept	4x27 108	3x30 90	2x22 44	1x11 11	90 253	2.81	Agreed
19.	It provides useful sources of information to teachers	4x22 88	3x20 60	2x38 76	1x10 10	90 234	2.60	Agreed
20.	It is used by teachers in all practical classes	4x38 152	3x40 120	2x5 10	1x2 2	90 284	3.15	Agreed

From the statements above, the respondents agreed that teaching aids form a focal point and attract attention of students. They agreed that it arouse their interest and also promote their desire to learn. They also agreed that it help to explain words and processes. It helps to consolidate what has been learned. Learners have chance to share idea during and after lesson. It helps to save time. It makes learners enjoy and appreciate their subjects of study. The respondents disagreed with statement 28 that teaching aids make learners to have self-esteem.

Discussions of Findings

The result obtained from the statistical tool shows that there is inadequate use of teaching aids use in the teaching and learning of Building Technology in Colleges of Education. The respondents strongly disagree that teaching aids is used frequently in Practical courses during the process of teaching and learning of Building Technology. This finding is in line with the assertion of (Onyeozu, 2009) that teaching aids is not available, accessible as well as being utilized. Meanwhile, they are resources or materials which help to facilitates teaching and learning. This finding is also consistent with Ikerionwu (2010), Adekola (2012) and Isola (2011) who concluded that print and non-print resources such as computers, telephone, radio,

posters, realia, overhead projectors among others have a significant effect on teachers teaching performance as well as students' achievement in each of the subjects.

Also, from the finding, it was discovered that teaching aids make learners get motivated and as well help them have self-esteem in tackling their academic work independently. The outcome of the statements posed, also indicated that the use of teaching aids will arouse students' interest and promotes their desire to learn and also help explain difficult words and processes. The use of instructional materials will also aid Learners in having the chance to share idea during and after lesson. The use of teaching aids during teaching and learning forms a focal point and attracts attention of students so as to make them enjoy and appreciate their subjects of study. This is in line with the summation of Azikwe (2009) that resources materials to be used, if carefully selected and utilized will bring about a positive outcome in the students. It was also observed that teaching aid is used to facilitate the learning of abstract concepts and as well helps the teachers to teach with ease. It is believed that teaching aids is not used by teachers in all practical classes. This will not help to simplify the teaching and learning processes. The outcome of the statements also showed that teaching aids is used to give an accurate impression of the concept. It was disagreed that teaching aids is used frequently during teaching and learning processes. This finding is in line with the findings of Osokoya (2009) and Ikot (2010) who discovered that there is a significant relationship to teachers teaching performance and student interest when taught with teaching aids.

Conclusion

It is obvious that to prove the academic performance of students in Building Technology, there is need for using teaching aids by teacher to instruct the students. Effective use of teaching aids can help to overcome the failure of students prevalent in Building Technology examination and it can also be used as an advantage to help teaching and learning activities go smoothly with less frustration.

Recommendations

Based on the findings of this study, the following recommendations are made by the researcher:

1. More seminars/workshops on the use of diverse instructional materials available should be organized at least bi-annually to acquaint lecturers on how to use them in teaching Building Technology as a Vocational and Technical subject
2. A state organized committee should be set up, to monitor the lecturers' use of teaching aids during the teaching of Building Technology.
3. Educational managers should ensure that Building Technology lecturers have educational qualification in accounting in accounting as a way of acquainting them with the principles and administration of teaching aids in Colleges of Education.
4. School administration should ensure that teaching aids are provided for lecturers to allow them to teach more effectively and efficiently.

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