THE SIGNIFICANCE OF INTERACTIVE BOARD TECHNOLOGY IN TEACHING VOCATIONAL/TECHNICAL COURSES IN RIVER STATE UNIVERSITIES

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ABSTRACT

Interactive board technology is a screen that works in interactive conjunction with a computer and a projector. It is mostly used in the classroom to enhance effective teaching and learning. The study looked at the significance of interactive board technology in teaching vocational courses in Rivers State universities. The study adopted two research questions and one hypothesis. The study was limited to the use of interactive board technology in vocational courses. The study adopted a survey research design. The population of the study consists of a total of 25 academic staff in vocational/technical education department in Rivers State Universities. The entire population was used as sample of the study. The researchers used an instrument titled "Interactive Board Technology Application in Vocational Education" (IBTAVE). The instrument was subjected to content validation by two experts in the department of vocational education in Nnamdi Azikiwe University, Awka, Anambra State. Test-retest method was used to obtain the reliability of the instrument. The figure obtained from the test was computed using Pearson Product Moment Correlation Coefficient to a value of 0.75. The data obtained from the research questions were calculated using mean and standard deviation. The data obtained from the hypothesis was calculated using t-test at 0.05 level of significance. The findings of the study revealed that interactive board aid in improving teaching skills in vocational interaction classes. The findings of the study revealed that interactive board has the potential to improve lecturers' skill in ICT. Further, the findings obtained from the hypothesis revealed that there is significant difference between the use of interactive board to improve lecturers' skill and the potential of interactive board to improve lecturers' ICT skills. It was recommended that school management should provide interactive board in regular lecture hall in the university. Also, training and seminars should be organized by school management through the ICT unit to train lecturers on the use of interactive board.

Keywords: *Interactive Board Technology and Vocational/Technical Courses*

Introduction

Information and Communication Technology is an advanced system that supports activities involving information. Such activities include assembling, processing, keeping and providing data. Allowing more access to these programs encourages collaboration and communication network. In this regard, IT is likened to ICT. The knowledge of ICT is applicable in all aspect of life. A significant area where ICT is growing massively is in the educational sector.

The involvement of ICTs in educational sector is categorized into two broad areas like ICTs in education and ICTs for education (Okoro and Ekpo, 2016). ICTs in education entail the implementation of the overall members of ICTs in the teaching-learning activities while ICTs for education implies the development of ICT for teaching/learning objective. Nyika (2015) opined that the application of ICT in educational curriculum relies on the instructor that applies ICT to educate the students/learners. This spurs the necessity for teachers to have the needed skill to introduce ICT into the classroom teaching/learning process. The National Board for Technical Education (NBTE) in its sitting has influenced a new curriculum for teachers in which ICT has been embedded in the new teacher education program curricula guide (Aliyu, Abubakar, Abdullahi & Abdulrahman, 2016). However, Aliyu et al. stated that some teachers in technical colleges still find it difficult to properly fit into ICT instructional tools such as audio, video clips, computers, slides, visual aids, interactive board and electronic conferencing material with the objective of their instructional goal which influences an information search and attribution formulation. Moving with the current trend, multimedia and internet has presented an incredible opportunity for teachers and students around the globe to utilize all types of information and technology instantly. Educational devices in technologies and ICT devices such as slides, projectors and interactive board are maximally utilized in advanced classroom to initiate learning among students/learners.

The introduction of interactive board as a modern educational technology used in the classroom teaching has boosted the activities of learning among students. It is a large display that can be able to link programs to a computer and an interactive projector. The projector projects the computer images into a floor stand, where learners and teachers can effectively control the computer with pen, mouse, finger, or other device. Robert and Marzaur (2015) stated some functions exhibited by interactive board as; a response device which is provided for the students to send their responses to questions, the use of visuals to represent information and the interactive board reinforcement application that teachers can utilize to give an answer to present information in an unusual content.

When the teacher uses an interactive board in classroom to teach, he/she calls upon the students to interact with the interactive board themselves. In lecturing, the instructor sits in front of the computer and the student faces the interactive board during lessons. The use of interactive board in teaching skill-oriented vocational courses/subjects may increase students' attention and interest in the subjects, improves their level of interaction with the teachers as well as boost their academic achievement. In line with the view of Digregorio and Sobel-Lojeski in Ajelabi (2015), interactive board encourages group discussion and participation. The authors stated that it is an efficient tool for brainstorming as notes and observation made to the screen can be changed into text, reserved and distributed in subsequent lessons. The interactive board is an ideal tool for small

group project and collaborate learning, as learners can easily bring out concepts, and then save the work for sharing over a network or by email. Interactive board further gives room for greater focus during teaching and learning activities. As a result, students' academic output is influenced positively (Termit and Singh-Abdul, 2012).

Statement of Problem

Vocational/ Technical education programs need to be improved upon in terms of service delivery and meeting up obtainable modern trends in learning. Observation shows that the neglect of vocational and technical education is economically bad as it denies the country of input that graduates would make on national development and prosperity. The Nigerian labor environment needs capable auto mechanics and truck drivers, carpenters, furniture makers, plumbers, electricians, computer technicians, advanced mechanized farmers and technicians, medical technicians and vocational nurses to encourage the labor market. This emanates from the constant depreciation of vocational education sector.

The lack of teaching materials, laboratory and workshop facilities/equipment has aided to the reduction in value of the quality of vocational education graduates in Nigeria (Raymond, 2017).

The inadequacy of facilities, both in qualitatively and quantitatively, has put the vocational education program in a state of quagmire. Thus there is a need to improve on the technology of teaching and learning of vocational education so as to produce quality graduates. Therefore, the need to teach with modern technological material such as interactive board becomes necessary.

Literature Review

Influence of interactive Board in Teaching

An interactive board is a screen that functions with a computer and a projector. The first interactive board design was initiated by SMART Technologies Incorporated in 1991. Educators were the first people to recognize the interactive board's potential application as a tool for collaboration, improving student learning outcome and streamlining lesson planning. Educators continue to compromise the largest user base for this technology, particularly in the United Kingdom. As more schools are becoming equipped with interactive boards, there is a real need for instructors to participate in an active role in specifying the ways in which this extremely powerful tool is installed and used (Technologies, 2015).

Interactive Board (IB) according to Abifarin in Nwaukwa (2015) is an easy-to-use multimedia equipment which can engage both the students and the learners. Abifarin stated that interactive board uses an electric pen with which has the potential to control the computer, write or draw on the board directly. It is useful for trainers, teachers, presenters, and for meeting participants' expectations for delivery of lectures, and workshop activities. Nwaukwa (2015) viewed interactive board as a type of multimedia facilities that facilitates exchange of information in a more interactive and efficient way. Nwaukwa stated that it is easy to use, stable and durable. It is multilingual and has free software update. It can be used by both the teacher and the students in the classroom. It works with computer (Laptop) and projector and can turn the classroom teaching

into an interactive experience, engaging learners, encouraging active participation and thus enhance learning interaction. It can equally be used for boardroom interactive discussion or remote interaction in a training room. The IB has mouse function, writing and drawing function, supplementary tools and handwriting recognition. It can also replay, save and print. It also has a remote interaction function.

In modern times, vocational school should, should be able to teach students critical thinking, it should develop their ability to solve challenges, and a more intense link to practice appears desirable. Vocational institutions are affected by technological development having, on the one hand, an impact on co-operation among schools, which is faster, more effective and less expensive in the electronic form (communication via e-mail, telebridges or other on-line transmissions of data) and, on the other hand, also on students, the contemporary student generation being often called the net-generation. It is necessary to fully adapt the educational process at vocational schools to these facts, in particular, by the application of current technological possibilities including also teaching with the use of interactive whiteboards. The application of modern ICT-based resources consisting in evaluation of the technological environment from the point of view of its interactivity enables students' active participation in the teaching process.

Modern advancements in technologies have aided the teaching job to be likable and lessons more interesting and students-centered (Hasajova, 2014). The technology of interactive teaching by means of interactive whiteboards is more of object-teaching which is enriched by elements of interactivity produced by the interactive screen. Thus, the teacher and students actively enter into the teaching process and are able to influence and adapt it to current needs. Interactive whiteboards have become a worldwide phenomenon and recently they have been increasingly applied also in the conditions of vocational education in Slovakia.

In an experimental research on interactive whiteboards usage for teaching English Language, Mathematics and Sciences as studied by G. Moss et al. (2007). The results obtained from the research indicated that most teachers utilize interactive boards only as a supportive medium of traditional teaching. Only few teachers have the concept that the interactive whiteboard technology has the potential to innovate their own teaching methods and technique. From the study, the most innovative teachers were those who had the best experience with the application of interactive whiteboards. Observation revealed that almost 78% of the teachers reported that they prepared materials for interactive lessons themselves and only 42% of the teachers used official teaching software (Melon, 2016). The effect of interactive whiteboards on students' learning and activity in the teaching process was studied by S. Kennewell and G. Beauchamp (2003). In their research, they found out that teaching with the use of interactive whiteboards seriously aid to attract and keep students' attention. Students were considerably more active at such lessons than at traditional ones. Research carried out in the USA by Dantzker (2002) showed that almost 75% of students reported that the use of interactive whiteboard mostly aid in influencing learning process positively. Research results by P. Joaquin and M.I. Iglesias (2010) further revealed that an interactive whiteboard in combination with students' activity increase students' ability to solve problem and by constant interaction creates a conducive environment for teaching and learning.

Purpose of the Study

The study is focused on the significance of interactive board technology in teaching vocational/technical courses in River State universities. Specifically, the study sought to:

1. Find out the extent to which interactive board aid in improving teaching skills in vocational interaction classes.
2. Find out if interactive board has the potential to improve lecturers' skill in ICT.

Research Questions

The researchers used the following research questions as a guide for the study:

1. What is the extent to which interactive board aid in improving teaching skills in vocational interaction classes?
2. What is the extent to which interactive board have the potential to improve lecturers' skill in ICT?

Hypothesis

The null hypothesis was tested at 0.05 level of significance.

HO_1: There is no significant difference between the use of interactive board to improve lecturers' teaching skill and the potential of interactive board to improve lecturers ICT skills.

Scope of the Study

The study was limited the use of interactive board technology in vocational courses. It is also limited to academic staff within the department of vocational technical education.

Methodology

Research Design

The researchers adopted survey research design. The survey research design was used because questionnaires were used to obtain data for the study.

Population of the Study

The population of the study consists of a total of 25 academic staff in vocational/technical education department in Rivers State Universities. The population data was obtained from the head of the department in vocational/technical education. The population distribution consists of 18 lecturing staff in Ignatius Ajuru University of Education, Iwofe, Port Harcourt and 7 lecturing staff in the department of technical/vocational education in Rivers State University.

Sample of the Study

There was no need for sampling as the entire population was used as sample of the study.

Instrument of Data Collection

The researchers used an instrument titled "Interactive Board Technology Application in Vocational Education" (IBTAVE). The instrument consists of ten (10) items. IBTAVE test is a five point Likert scale consisting of Very Large Extent (VLE), Large Extent (LE), Fair Large Extent (FLE), Small Extent (SE) and No Extent (NE). The response options are weighed as 5, 4, 3, 2 and 1.

Validation of the Instrument

The instrument was subjected to content validation by two experts in the department of vocational education in Nnamdi Azikiwe University, Awka, Anambra State. The experts checked the language content of the questionnaires and made necessary corrections before distribution to the field.

Reliability of the Instrument

Test-retest method was used to obtain the reliability of the instrument. IBTAVE was administered to three lecturers in the department of Vocational education in Nnamdi Azikiwe University, Awka, Anambra State. After two weeks the same instrument was given to the lecturers. Their scores were collated together and analyzed using Pearson Product Moment Correlation Coefficient to obtain a value of 0.75. This value was considered adequate for the study.

Method of Data Analysis

The data obtained from the research questions were calculated using mean and standard deviation. The data obtained from the hypothesis was calculated using t-test at 0.05 level of significance.

Decision Rule:

1. Accept null hypothesis if t-calculated value is less than t-tabulated value at 0.05 level of significance or otherwise reject.
2. Decision Rule Table

Ranges of Score	Decision
4.5-5.0	Very Large Extent
3.5-4.0	Large Extent
2.5-3.0	Fair Large Extent
1.5 -2.0	Small Extent
0.5 -1.0	No Extent

Data Analysis

Research Question 1

What is the extent to which interactive board aid in improving teaching skills in vocational interaction classes?

Table 1: Interactive board aid in improving teaching skills in vocational interaction classes.

S/N	Items	Mean	Standard Deviation	Remark
1	Interactive board makes teaching easy in vocational classes	4.52	0.95	VLE
2	Interactive board enables teachers to explain different shapes and figures	3.50	0.69	LE
3	When teaching with interactive board, there is improvement in communication skills	4.00	0.79	LE
4	There is high level of interaction between the students and the teacher when using interactive board	3.78	0.74	LE
5	Teacher can manage time effectively when using interactive board	3.89	0.76	LE

The findings obtained from research question 1 revealed that mean response from respondents on items 2, 3, 4 and 5 were accepted to a large extent (LE). While item 1 was accepted to a Very Large Extent (VLE). This indicates that interactive board aid in improving teaching skills in vocational education.

Research Question 2

What is the extent to which interactive board has the potential to improve lecturers' skill in ICT?

Table 2: Interactive board has the potential to improve lecturers' skill in ICT.

S/N	Items	Mean	Standard Deviation	Remark
1	Interactive board improves teachers' computer operation skill	4.53	0.95	VLE
2	Interactive board operation develops teachers' skill on the use of projectors	3.55	0.71	LE
3	Interactive board expands teachers knowledge on the use of educational software	4.33	0.82	VLE
4	Interactive board setting and arrangement gives teachers the ability to operate and connect other ICT devices	3.88	0.76	LE
5	Interactive board operation gives teachers the skill to use and operate iPhone and iPad during classroom session	3.70	0.72	LE

The findings obtained from research question 2 revealed that items 1 and 3 were accepted to a very large extent (VLE) and items 2, 4 and 5 were accepted to a large extent (LE). This implies that interactive board has the potential to improve lecturers' ICT skills.

Hypothesis

There is no significant difference between the use of interactive board to improve lecturers' teaching skill and the potential of interactive board to improve lecturers ICT skills.

Table 3: T-test analysis of the use of interactive board to improve lecturers' teaching skill and the potential of interactive board to improve lecturers' ICT skills

S/N	Items	X	SD	N	DF	T-CAL	T-TAB	DECISION
1	Interactive board to improve lecturers' teaching skill				3.94	0.79	25	Significant
2	Interactive board to improve lecturers' ICT skills	48	2.41	2.01	3.40	0.79	25	

The findings obtained from table three reveal that t-calculated value of 2.41 was greater than t-tabulated value of 2.01 at 0.05 level of significance. Going by the decision rule, it implies that the null hypothesis is rejected. Therefore, there is significant difference between the use of interactive board to improve lecturers' teaching skill and the potential of interactive board to improve lecturers' ICT skills.

Summary of the Findings

The following are the summary of the findings:

1. Interactive board aid in improving teaching skills in vocational education.
2. Interactive board has the potential to improve lecturers ICT skills.
3. There is significant difference between the use of interactive board to improve lecturers' teaching skill and the potential of interactive board to improve lecturers ICT skills.

Discussion of Findings

The Effect of Interactive Board in Classroom

The interactive board as a modern ICT facility has influenced classroom teaching and learning in various ways. The study was able to show that interactive board can aid in improving teaching skills in vocational education. This is in agreement with the view of Jan and Maria (2016) who revealed that 77.39% of the teachers who have attended training in the use of interactive whiteboards showed great achievement on students' performance and motivation in vocational subjects.

The findings also showed that interactive board has the potential to improve lecturers' ICT skills. This is in line with the view of Edwin (2011) that interactive board complexity has influences on an instructor's ability to assess other ICT devices. This implies that teachers functioning with interactive board during teaching process may be attracted to know the operations of other electronic devices.

Further findings from the study indicate that there is significant difference between the use of interactive board to improve lecturers' teaching skill and the potential of interactive board to improve lecturers' ICT skills.

Educational Implication of the Study

The results obtained from this study have been able to show that interactive board can aid in improving teaching skills in vocational education. Based on this, it is necessary for teachers in vocational education to learn on how to use and operate effectively interactive board technology in order to boost teaching and learning in the classroom.

Further, the use of interactive board by implication would enable teachers to learn how to operate other ICT devices which will enhance better collaboration and application of e-learning materials to create a rich learning environment. This is because when the learning environment is enriched with ICT materials, students can adapt and flow with classroom activities which in turn will boost academic achievement.

Conclusion

In all, the study looked at interactive board use in vocational courses. The study was able to reveal that interactive board aids in improving teaching skills in vocational education and it has the potential to improve lecturers' ICT skills. Further, the study showed that there is significant difference between the use of interactive board to improve lecturers' teaching skill and the potential of interactive board to improve lecturers' ICT skills.

Recommendations

Based on the findings of the study, it was recommended that:
1. School management should provide interactive board in regular lecture hall in the university.
2. Training and seminars should be organized by school management through the ICT unit to train lecturers on the use of interactive board.

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