

ASSESSMENT OF THE EXTENT OF UTILIZATION OF DIGITAL INTERNET SMART BOARD COMPETENCIES BY LECTURERS FOR EFFECTIVE INSTRUCTIONAL SERVICE DELIVERY IN OFFICE TECHNOLOGY AND MANAGEMENT

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Abstract

The study was aimed at assessing the extent of utilization of digital internet smart board and competencies by lecturers for effective instructional service delivery in Office Technology and Management programme in Delta State. Two research questions and two hypotheses were used for the study. Survey research design was adopted for the study. The population of the study was 57 lecturers in Delta State Polytechnics and Southern Delta University, Ozoro . An 18 items checklist indicating the various digital facilities in internet network and smart board was designed by the researcher and used for data collection. Two experts validated the instrument. The reliability of the instrument was established using Cronbach Alpha method which yielded correlation co-efficient of 0.78. Mean and standard deviation were used to answer the research questions, while t-test was used to test the hypotheses. The study revealed that Office Technology and Management lecturers were competent in the use of internet network and smart board for instructional delivery. It was recommended among others that lecturers should embark on seminar and other related training to enhance their competencies on the utilization of internet and smart board facilities for effective instructional delivery service.

Keywords: Digital Internet Smart Board, Utilization, Instructional Service Delivery, Office Technology and Management, ICT facilities.

Introduction

Office Technology and Management programme is offered in Nigerian Universities, Polytechnic and Colleges of Education. The aim of OTM programme is to train and equip graduate of the programme with skills needed to manipulate office machines and serve as supporting staff to management of organization where they are employed (Igbinedion, 2012). It is an integral part of Technical Vocation Education programme, is an efficient and effective, productive and functional education which leads to self-employment and relevant to paid employment and consequently self-actualization (Ezeahurukwe and Omale, 2017). No doubts OTM graduates are trained to acquire skills for today and the future.

In teaching and learning of office technology and management programme, one-size fits all approach to instructional delivery could be ineffective and probably counterproductive.

Instructional delivery is a process in which teachers apply a repertoire of strategies and patterns in the teaching and learning processes, to communicate and interact with students around academic content, and to support students' engagement (Virginia Department of Education, 2010). Since the aim of OTM is to produce competent manpower in a nation, institutions offering OTM courses especially universities therefore should aim at graduating employable students with high technical skills, as about 80% of jobs world-wide require vocational skills (Chinien & Kot-sik, 2003). OTM education/training for employability places greater emphasis on learning, rather than on teaching. Most theories of learning emphasize the importance of engaging learners in activity based learning (Bransford, Brown, & Cocking,

1999). There are varieties of technologies designed to support learners' engagement in learning such as the interactive white board.

The interactive whiteboard technology is an instructional tool that allows computer images to be displayed onto a (touch sensitive) board using a projector. The information exchange mechanisms of the interactive whiteboard involve the use of hardware and software. The hardware include the white electronic-board, computer, speakers and a projector to display digital lesson materials in audio-visual form from video-discs (both analogue and digital), the internet and other data storage mediums linked to the computer. The software on the other hand include: internet browsers, word-processing applications, spread sheets, desktop publishing programmes and simulation applications (Bannister, 2020). The instructor can manipulate elements on the board by using the finger or a stylus (pen) as a mouse, directly on the screen. Items can be dragged, clicked and copied and notes can be written by hand, which can be transformed into text and/or slides. Interactive smart board is a powerful tool for interactivity and collaboration, integration of media contents into teaching and cooperative learning in the classroom. The use of the digital internet smart board and other pedagogical technology is to meet the needs of OTM especially as world of work moves from industrial age to information and technology era (Maja, David, Naing & Tapio, 2013). OTM teachers must be empowered on the effective use of the technology in the classroom to ensure improvement in instructional delivery as it enhances teaching methods and learning styles (Majumdar, 2013).

Statement of the Problem

The importance of digital internet smart board in teaching and learning in tertiary institution cannot be over emphasized. Its utilization has become a valuable assets in the university, polytechnics and colleges of education. Digital internet smart board as a modern tool in teaching and learning makes it meaningful in academic world due to practical oriented strategy, where teachers and students have the opportunity to interact in teaching and learning.

Despite the benefit of internet smart board, for it to be effective, students and teachers should acquire basic internet skills that enable them flow effectively in teaching and learning. Lack of these internet skills and availability of smart phone and other computer technologies and tools may make the utilization of internet smart board difficult to achieve its purpose. Against this background that this paper wishes to study the extent of utilization of digital internet smart board competencies of lecturer for effective instructional services delivery in Office Technology and Management.

Purpose of the Study

The main purpose of the study is to assess the extent of utilization of digital internet smart board competencies by lecturers for effective instructional service delivery in officer technology and management. Thus the specific purpose of this study is to determine;

1. The required skills,
2. The extent of use, and
3. The possible challenges facing the use of digital internet smart board in tertiary institution in Delta State.

Research Questions

1. To what extent do lecturers of OTM in Delta State utilize smart internet board for instructional delivery?
2. To what extent do lecturers in OTM in Delta State possess digital internet smart board competency skill utilization for instructional delivery?

Hypotheses

1. There is no significant difference between mean ratings of the perception of OTM lecturers in polytechnics and the universities on the extent of utilization of digital internet smart board instructional delivery in Delta State.

2. There is no significant difference between mean ratings of the perception of OTM lecturers in polytechnics and the universities on the competency skills possessed in the utilization of digital internet smart board technology in instructional delivery in Delta State.

Method

The study reviewed literature on the use of interactive white-board technology in to provide information on the need and benefits of the technology in the pedagogical system. The study adopted descriptive survey research design and was carried out in three (3) tertiary institutions in Delta State that offer OTM courses and make use of the interactive whiteboard technology for instructional delivery. Delta State Polytechnic, Ogwashi-Uku, Delta State Polytechnic, Otefe-Oghara and Southern Delta University, Ozoro and The population for the study was 57 OTM lecturers drawn from the three institutions. There was no sampling because of the manageable size of the population. Structured questionnaire was used for data collection and was divided into 2 sections based on the specific purposes of the study. Each item in the questionnaire was assigned a four response options of Very High Extent/Highly Possessed (VHE/HP=4), High Extent/Average Possessed (HE/AP=3), Low Extent/Slightly Possessed (LE/SP=2) and Very Low Extent/Not Possessed (VLE/NP=1) for research purposes respectively. The instrument was validated by three experts at the Department of Office Technology and Management, Delta State Polytechnic, Ogwashi-Uku. Reliability of the instrument was determined using Cronbach Alpha method which yielded 0.78. 57 copies of the research instrument were administered but 47 were returned and used for analysis. The study used statistical tools such as Mean ($\bar{x}$) and Standard Deviation (σ). Mean real limit of numbers was used to interpret the result while standard deviation was used to validate the closeness of the respondents from each other in their responses and from the mean. Items with mean values: equal to or greater than 3.50 were regarded as VHE/HP; ranging from 2.50 – 3.49 as HE/AP; 1.50 – 2.49 as LE/SP; and equal to or less than 1.49 as VLE/NP. t-test was used to test hypotheses at 0.05 level of significance.

Results

Research Question 1: To what extent do lecturers of OTM utilize smart internet board for instructional delivery?

Table 1: Mean ratings of OTM lecturers on the extent of utilization of the digital internet smart board for instructional delivery of OTM courses.

S/ N	Extent of use of the interactive whiteboard technology	Polytechnics		Universities		Mean	SD	Remark
		X	SD	X	SD			
1.	In presentation of course content during lecture periods	1.50	0.55	1.60	0.64	1.55	0.54	LE
2.	During practical classes to show simulations	1.15	0.44	1.60	0.77	1.05	0.61	VLE
3.	During examination, to show exam questions	1.28	0.41	1.72	0.65	1.50	0.53	VLE
4.	During examination to show timer for exam duration	1.17	0.42	1.11	0.52	1.24	0.47	VLE
5.	Display of images and videos that are related to the topic being taught	1.48	0.47	1.34	0.67	1.41	0.57	VLE
6.	In recording and saving class activities during the lecture period to be replayed later for further discussion	1.19	0.50	1.60	0.78	1.40	0.64	VLE
7.	To involve students in interacting with games and other classroom learning activities found within the course content	1.20	0.41	1.22	0.76	0.98	0.59	VLE

Table 1 which focuses on the extent of utilization for effective service delivery showed Low Extent and Very Low Extent, this means that OTM lecturers utilize of smart internet board for instructional delivery is to a very low extent?

Research Question 2: To what extent do lecturers in OTM possess digital internet smart board competency skill utilization for instructional delivery

Table 2: Mean ratings of OTM lecturers on the extent of possessed skills required for effective utilization of the digital internet smart board in instructional delivery.

S/ N	Skill possession	Polytechnics		Universities		Mean	SD	Remark
		X	SD	X	SD			
1.	Power input-output connectivity skill	2.17	0.75	2.15	0.66	2.16	0.72	SP
2.	Basic computer appreciation skills	2.67	1.03	2.34	1.04	2.51	1.04	AP
3.	Multimedia creation and presentation skill	2.00	0.63	2.04	1.56	2.02	1.09	SP
4.	Graphical design skill	1.83	0.75	1.76	0.72	1.80	0.74	SP
5.	Word processing and document preparation skill	2.33	1.37	2.22	1.30	2.30	1.34	SP
6.	Slide preparation and presentation skill	2.17	0.75	2.16	0.74	2.16	0.75	SP
7.	On-the-board measurement, drawing, marking and highlighting skills	2.00	1.10	2.02	1.08	2.01	1.09	SP
8.	Internet browsing skill	2.83	0.98	2.98	0.84	2.91	0.89	AP
9.	Stylus (pen) handling and/or finger placement skill	2.17	1.17	2.15	1.11	2.16	1.14	SP
10.	Pedagogical software and application skills	1.83	0.75	1.68	0.75	1.76	0.75	SP
11.	Digital video/audio recording and editor application skills using the interactive whiteboard technology to create podcasts, record classroom activities for students continuous learning	1.67	0.82	1.66	0.82	1.67	0.85	SP
12.	Manipulative skills for efficient use of generic tools such as shape creators, spotlight, screen capture, magnifier, font and color changing, line tools, digital eraser and note taking	1.76	0.82	1.82	0.76	1.79	0.79	SP

Table 2 focuses on the extent of required skills possessed for effective utilization of digital internet smart board in instructional delivery. The 10 items on the table showed slightly possessed while item 2 items showed averagely possessed.

Test of Hypotheses

Hypothesis 1: There is no significant difference between of OTM lecturers in polytechnics and the lecturers in the universities on the extent of utilization of digital internet smart board instructional delivery in Delta State.

Table 3: T-test result on OTM lecturers in the polytechnic and universities on the extent of utilization of digital internet smart board for instructional delivery.

Respondents	N	X	SD	Df	t-cal	t-crit	Level of sig	Decision
Polytechnic lecturer	31	2.12	0.46	55	0.49	1.96	0.05	Accepted
University lecturer	26	2.03	0.83					

Table 3 shows the calculated value of 0.49 is less than the table value of 1.96 at 0.05 level of significance and 55 degree of freedom. Therefore the null hypothesis was accepted. The result therefore is that there is no significant difference in the mean ratings of OTM lecturers in the polytechnics and lecturers in the universities in Delta State in the utilization of smart internet board for instructional delivery.

Hypothesis 2: There is no significant difference between mean ratings of OTM lecturers in polytechnics and lecturers in the universities on the competency skills possessed in the utilization of digital internet smart board technology in instructional delivery in Delta State.

Table 4: T-test result on competency level of OTM lecturers in polytechnics and universities in Delta State on the utilization of internet smart board in instructional delivery service of OTM programme.

Respondents	N	X	SD	Df	t-cal	t-crit	Level of sig	Decision
Polytechnic lecturer	31	2.12	0.82	55	0.51	1.96	0.05	Accepted
University lecturers	26	2.35	0.91					

Table 4 shows that the calculated value of 0.51 is less than the table value of 1.96 at 0.05 level of significance and 55 degree of freedom, therefore the null hypothesis was accepted. The result therefore is that there is no significant difference in the mean ratings of OTM lecturers in the polytechnics and lecturers in the universities in Delta State on the extent of possessed skills/competencies required for effective utilization of digital internet smart board for instructional delivery in Delta State.

Discussion of findings

Findings of the study in table 1 revealed that the digital internet smart board is poorly utilized by the OTM lecturers in Delta State, Nigeria. This finding corroborate that of Bannister (2020) and Avril (2022) which stated that, in many universities where the whiteboards are available, they are poorly utilized and are more of glorified blackboards. The finding is not surprising as many lecturers in the studies lacked the skills to use the technology.

Findings in table 2 indicated that the OTM lecturers averagely possess the operational skills for the use of computers and web browsers but slightly possess the required skills for the effective use of the digital internet smart board. Such lacking skills include power input-output understanding, multimedia, graphical and the use of web tools for building teaching and learning systems among others, as outlined by Bannister (2020).

Conclusion

The study concludes that OTM lecturers be encouraged by concerned authorities to use the digital internet smart board and other available pedagogical technologies during demonstration (simulations) of practical before field experience as this will reduce much emphasizes on theories rather than practical as most OTM courses are vocational and practically oriented in nature.

Recommendations

The study has identified the required skills and extent of use of digital internet smart board in tertiary institutions in Delta State. The study, thus recommends that;

1. training sections should be organized for all OTM lecturers on the usage of the digital internet smart board in the classrooms;
2. constant power supply be provided in the OTM workshops and laboratory by institutions authorities to encourage frequent use of the technology;

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