



PERCEPTION OF TEACHERS AND STUDENTS ON FACTORS AFFECTING THE TEACHING AND LEARNING OF INFORMATION AND COMMUNICATION TECHNOLOGY COURSES IN THE POLYTECHNICS

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Abstract

This study was undertaken to identify the factors affecting the teaching and learning of information and communication technology courses in Office Technology and Management programs in Plateau State Polytechnic. The new trend in ICTs place greater responsibilities on lecturers/instructors requiring them to be versatile with the ICT skills in order to adapt to the technological changes in the Polytechnics. More so, for any graduate of Office Technology and Management program to be relevant, competitive and effectively productive, he or she must acquire ICT skills as they are essential tools for performance in today's electronic office. The study adopted the survey research design. Population of the study was ten lecturers/instructors and forty HND students in OTM department of Plateau State Polytechnic. No sample was taken as the population was a manageable one. The instrument for data collection was a four-point rating scale questionnaire. The data generated was analyzed using mean and standard deviation. The findings of the study revealed among others that ICT tools were insufficient therefore hindering its proper utilization in teaching/learning of ICT courses in OTM. It was concluded that effective application of ICT tools in the teaching/learning of ICT courses in the Polytechnic will go a long way in making ICT learning real and more interesting, no longer abstract. It was recommended that Administrators of the Polytechnic should pay more attention to the needs of OTM department so as to provide the much needed ICT infrastructure and human capacity building required to deliver the mandate of OTM programs.

Introduction

The progression of Information and Communication Technology (ICT) on education program has swept through many countries in only a short time. The education system, business environment and world of work have witnessed tremendous changes in

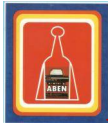


their modus operandi due to the exponential growth rate of ICTs. Ubulom, Enyekit, Onuekwa and Amaehule (2011) observed that the emergence of ICT has totally transformed the way we access, process, exchange, store, retrieve and disseminate information within organizations and/or across the globe whether it is in vocal, pictorial, textual or numeric form. ICT has completely revolutionized the world and with its attendant effect on education generally and Office Technology and Management (OTM) program in particular. Today courses in typing are being dropped for Information and Communication Technology (ICT), keyboarding, database management, desktop publishing, management information systems to mention but a few. Nwanewezi (2013) opine that the use of ICT in acquiring knowledge and skills has become an essential element in education and training and higher education without the support of ICT makes the lives of the learner and teacher equally difficult.

Information and communication technology refers to the process of gathering accessing and dissemination of data for an enhanced learning which is daily giving rise to new concepts and ideas, innovation and invention, and making impact not only in the industries/ businesses but also in the education sector (Miller and Akume, 2009). Due to advances in ICTs, modern offices according to Agomuo (2005) have transited from the manual operations to the present electronic erasing challenges on workers to adapt to the rapidly changing techniques, new equipment and work processes. Drucker (2010) posits that knowledge workers are now needed by knowledge organizations that operate in knowledge economy.

Office Technology and Management program, being a skill acquiring discipline, remains a relevant channel for the transmission of the appropriate ICT skills and knowledge in order to make its graduates ICT savvy to embrace globalization and meet the demands of today's work place. This fact has propelled both Federal Government and States to give students fair access to equipment and software that can directly increase their employability in almost any field of study. As already stated, students who are experienced with some of these technologies will be employable as well as promotable. The basic goals of Office Education/ OTM program have not changed, only the equipment used have changed. Students still need to input, edit, print, file, reproduce, organize, manipulate, and use information to make sound business decisions. For any graduate of Office Technology and Management course to be relevant, competitive and effectively productive, he or she must acquire ICT skills as they are essential tools for performance in today's electronic office.

ICT related courses are the core courses that are currently learnt by OTM students with the greatest number of contact hours in the curriculum as specified by the National Board for Technical Education aiming at ensuring that the recipients upon graduation would be proficient in the utilization of ICT resources at workplace. The use of ICT in teaching and learning of OTM is inevitable because it assists to meet the need of both the



teachers and students for greater individualization of instruction and greater relevance of the subject matter (Eze and Aja, 2014). At present, the caliber of students that graduate from both office education and office technology and management programs, according to Odunaike et al (2012), exhibit inadequate exposure to modern office technology, information systems and the rudiments of office administration. Supporting this assertion, Akinola (2012) observes that it appears that the teaching of ICT courses has not been effectively carried out by lecturers and instructors. This is because student's success on result grades does not seem to reflect their proficiency in the practical application of ICT knowledge to the accomplishment of specific real-work situation tasks.

Utoware and Chamberlain (2013) identified some challenges associated with the use of new technologies in teaching. The first to consider relates to teacher. Teachers are faced with myriad challenges occasioned by the changes caused by technologies which are occurring faster than students can be trained. Their development is a major challenge for the utilization of ICT tools. Some institutions are reluctant to arrange for refresher training for updating the skills of workers and teachers for improved performance. Staff renewal would mean opportunity to acquire new instructional methods, techniques and technologies and bridge the skill-gap already existing. Also poses some challenges is the cost of capital outlays in hardware and software and availability of pedagogically sound materials. The cost to update a computer laboratory or install a new one is tremendous. These costs are a major issue for future growth in Office Technology and Management program.

The Wikipedia Free Encyclopedia (2012) identified some quality classroom delivery tools to include: computers in the classroom, class web site, class blogs and wikis, wireless classroom microphone, mobile devices and interactive whiteboard. These technologies help to present materials in electronic form through on-line digital libraries, video projection screens, CD-ROMs, internet facilities and mobile technologies such as i-pod, smart phones, mp player, and e-book reader, among others. If these technologies are appropriately utilized, they will assist OTM students in accessing information, have access to lessons presented with software, simulate situations, build their own knowledge, improve their knowledge base, work with peers and experts across the globe, explore authentic issues and work at their own pace.

Statement of the problem

Teaching and learning process in Office Technology and management programs in Nigeria polytechnics is still at its rudimentary form. Both lecturers and students are still relying on textbooks information. Traditional method of delivery is not suitable when it comes to teaching of ICT courses which are practical and student centered in nature. Shifting from traditional learning to ICT-based learning is badly needed. It is observed that many OTM teachers and students are yet to fully utilize ICT for teaching and learning. It is on this basis that the study is undertaken.



Purpose of the study

The study was undertaken to examine the perception of teachers and students on the factors affecting the teaching and learning of Office Technology and Management courses in Plateau State Polytechnic.

Specifically, the study sought to determine

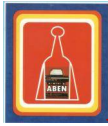
1. The availability of ICT tools for teaching/learning in Office Technology and Management courses in Plateau State Polytechnic.
2. The extent of application of ICT tools in teaching and learning of Office Technology and Management courses in Plateau State Polytechnic.
3. The factors hindering effective application of ICT tools in teaching and learning Office Technology and Management courses in Plateau State Polytechnic.
4. The supports needed for the ICT application in teaching and learning of Office Technology and Management courses in Plateau State Polytechnic.

Research Questions

1. What is the extent of the availability of ICT tools needed for teaching/learning of ICT courses in Plateau State Polytechnic?
2. What is the extent of the application of ICT tools in teaching/ learning of ICT courses in Plateau State Polytechnic?
3. What are the factors hindering effective application of ICT tools in teaching and Learning ICT courses in Plateau State Polytechnic?
4. What kinds of supports are needed for the application of ICT tools in teaching and learning of ICT courses in Plateau State Polytechnic?

Methodology

This study adopted the descriptive survey research design, because it involved eliciting information from respondents. The population of the study comprised 10 lecturers teaching ICT Courses and 40 Higher National Diploma students in the Department of Office Technology and Management, Plateau State Polytechnic. There was no sample as the population was not large enough for the sampling. A 67 items questionnaire was the instrument designed and used for data collection for the study. The instrument used to answer the research questions was structured using the four point Likert scale as follows: Research question 1, the options were: Very Much Available (VMA), Available (A), Fairly Available (SA) and Very Much Unavailable (VMU), (4, 3, 2, and 1). Research Question 2 had: Very High Extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE). Research Question 3 had: Strongly Agreed (SA), Agreed (A), Disagreed (DA) and Strongly Disagreed (DSA), (4, 3, 2, and 1). Research Question 4 had: Highly Needed (HN), Needed (N), fairly Needed (FN), and Strongly Not Needed (SNN), ((4, 3, 2, and 1).



Data generated was analyzed using mean and standard deviation. For Research Question 1, any item with a mean score of 2.50 and above was regarded as “Available”, while any item that is less than the mean score of 2.50 was regarded as “Fairly Available”. For Research Question 2, any item with mean score of 2.50 and above was regarded as “High”, while any item below the mean score of 2.50 was regarded as “Low”. Research Question 3 any item with a mean score of 2.50 and above was regarded as “Agreed”, while any item below 2.50 was regarded as “Disagreed”. For Research Question 4, any item with mean score of 2.50 and above was regarded as “Needed”, while any item below the mean score of 2.50 was regarded as “Fairly Needed”.

Data Presentation and Analysis

Research Question 1

Table 1: Mean and Standard Deviation scores of teachers and students on the extent of the ICT tools available for teaching/learning of ICT courses in Plateau State Polytechnic. N= 50

S/N	Availability of ICT Tools	Mean	S. D	Decision
1.	Internet Facilities	2.50	0.98	A
2.	Overhead Projector	2.85	0.89	A
3.	Internet and Local Area Network	2.78	0.92	A
4.	Workable Generator	2.73	0.81	A
5.	Light Pen	1.95	0.98	FA
6.	Fax Machine	2.15	0.92	FA
7.	Video Cassette Recorder	2.43	1.03	FA
8.	Ready-made courseware	2.20	1.01	FA
9.	Computer Laboratory	2.83	0.81	A
10.	Application Software	3.00	0.59	A
11.	Electronic Scanners	2.10	0.95	FA
12.	Video/ Audio Conference Equipment	2.10	0.95	FA
13.	Electronic chalk board	2.40	1.08	FA
14.	On-line/ Internet computer	2.48	1.01	FA
15.	Off-line /Ordinary Computers	3.60	1.89	VMA
16.	Printers	2.78	0.89	A
17.	Multimedia Television	2.50	1.19	A
18.	Digital Camera	2.70	1.01	A



Table 1 shows the extent of availability of ICT equipment needed for teaching and learning in OTM program. The table revealed that 10 out of 18 ICT items are available indicating with the mean scores of 2.50 and above, while the respondents indicated that 8 out of 18 ICT tools are fairly available indicating with the mean score below 2.50.

Research Question 2

Table 2: Mean and Standard Deviation scores of teachers and students on the extent of the adoption of ICT tools for teaching/learning of ICT courses in Plateau State Polytechnic.

S/N APPLICATION OF ICT TOOLS	MEAN	S D DECISION
1 Computers with internet	1.95	1.03 LE
2 Off-line Computers	3.60	1.89 HE
3 Computer Laboratory	3.70	1.92 HE
4 Overhead Projector	2.80	0.96 HE
5 Light Pen	2.48	1.01 LE
6 Workable Generator	2.48	1.03 LE
7 Ready-made courseware	2.03	0.93 LE
8 Application Software	2.15	1.02 LE
9 Electronic Scanners	1.75	0.84 LE
10 Video and Audio Conference Equipment	1.68	0.79 LE
11 Electronic chalk board	1.95	0.84 LE
12 Printers	2.50	1.13 HE
13 Telephone / wireless Applications	1.75	0.84 LE
14 E-mail Facilities	2.38	1.10 LE
15 Multimedia Television	1.90	0.98 LE
16 Digital Library	1.53	0.55 LE

Data presented in Table 2 shows that the respondents agreed only 4 out of 16 items are used in high extent in the teaching of ICT courses to students in the department of OTM based on the mean scores of 2.50 and above. However, the respondents indicated that 12 out of 16 items of the ICT tools have been used in low extent in the teaching/learning of ICT courses as shown with the mean scores below 2.50.



Research Question 3

Table 3: Mean responses of respondents on factors hindering effective application of ICT tools in teaching and learning ICT courses.

N=50

S/N FACTORS HINDERING EFFECTIVE APPLICATION OF ICT MATERIALS	MEAN	S.D	DECISION
1 Insufficient number of computers	2.70	1.13	Agree
2 High cost of ICT equipment and facilities	2.78	0.80	Agree
3 Inconsistent electric power supply	2.20	0.96	Agree
4 Insufficient laboratory	3.05	0.93	Agree
5 Insufficient consumables	3.05	0.90	Agree
6 Lack of experienced technical assistance	2.85	0.97	Agree
7 Lack of training programs for ICT teachers	2.78	1.12	Agree
8 Insufficient time for students practice	2.65	1.05	Agree
9 Lack of quality ICT personnel(teachers)	2.98	0.97	Agree
10 Inadequate feedback on students class performance	2.98	0.89	Agree
11 Lack of appropriate teaching and learning software	2.88	1.04	Agree
12 Computer breakdowns	3.50	1.87	Agree
13 Lack of quality software and insufficient hardware	3.00	0.96	Agree
14 Inadequate computers	3.08	0.99	Agree
15 Difficulty in developing and keeping high quality instructional product up-to-date	2.78	1.12	Agree

Data presented in Table 3 shows that the respondents agreed on all the 15 items as the barriers that hinder the effective application of ICT tools/materials in teaching and learning ICT courses in the department of Office Technology and Management based on the mean scores of 2.65 and above.



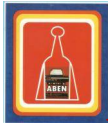
Research Question 4

Table 4: Respondents mean rating of the kind of supports needed for the effective application of ICT tools in teaching and learning of ICT courses to OTM students.

N=50

S/N SUPPORTS NEEDED FOR APPLICATION OF ICT TOOLS	MEAN	S.D DECISION
1. Provision of ICT tools, facilities and infrastructure	2.88	1.06 N
2. Connection of classrooms to the internet	2.58	1.13 N
3. Procurement of multimedia systems	2.93	0.99 N
4. Provision of incentives for courseware development	2.58	1.10 N
5. Provision of digital libraries	3.03	1.07 HN
6. Provision of standby generators for regular power supply	2.73	1.15 N
7. Adequate re-training of OTM teachers for effective teaching of ICT courses to facilitate student's learning	3.90	1.97 HN
8. Government funding and procurement of ICT tools	2.85	1.05 N
9. Proper supervision of students using ICT tools	2.35	1.14 FN
10. Provision of quality technicians for maintenance of ICT tools	2.93	0.94 N
11. Collaboration of public sector in the provision of ICT tools	2.50	1.08 N
12. Provision of sufficient time form students practice	2.55	1.03 N
13 Provision of software copies	2.70	1.04 N
14. Integration of ICT to instruction	2.95	0.93 N
15. Provision of sufficient peripherals	2.95	0.81 N
16. Provision of enough computers for students instructions	3.05	0.93 HN
17. Provision of enough simultaneous access	2.68	1.02 N
18 Creation of time to check students work/assignments	2.80	1.09 N

Data presented in Table 4 shows that the respondents agreed that all the 18 items listed are the kind of support needed for proper application of ICT tools to enhance effective teaching and learning of OTM courses based on their mean ratings of 2.50 and above.



Discussion of Findings

The findings presented in Table 1 shows the extent of ICT facilities available for the teaching and learning in OTM Department. The respondents agreed that items 1-4, 9-10 and 15-18 are available for the teaching and learning OTM courses. However, items 5-8 and 11-14 were found to be fairly available for the teaching and learning OTM courses. This finding is in line with Adelabu and Adu(2014) who averred that the level of accessibility of ICT resources depends on their availability and that poor availability level of ICT resources in schools can hinder both teaching and learning.

Findings with regards to the second research question revealed that only 4 items out of 18 are adopted in high extent in the teaching and learning of ICT courses. Odunaike, Ijaduola and Epetimehin (2012) agreed with the present findings that currently, the caliber of students that graduate from both office education and office technology and management programs exhibit inadequate exposure to modern office technology, information systems and the rudiments of office administration. ICT resources when frequently used enhance interaction, presentation of ideas, simulation of discoveries and challenging thinking.

Research question three revealed that all the listed items are barriers/challenges faced by OTM educators to effectively apply ICT resources in the teaching and learning of OTM courses. Ezeani and Ishaq (2013) supporting the findings, gave reasons why ICT tools are not properly utilized in delivering of OTM courses to include the following: difficulty to integrate ICT to instruction, insufficient teacher's time, not enough simultaneous access, poor internet connection, scheduling of computer time, poor peripherals, teachers lack of ICT knowledge/skills, lack of technical personnel to mention but a few.

Research question four revealed that the respondents agreed that all the items listed are the kind of supports needed for the effective application of ICT tools in teaching and learning. This finding collaborates with the findings of Nwanawezi (2013) that training and retraining of OTM lecturers/instructors lacked some doses of ICT practical and wondered how a teacher would be expected to teach what he/she does not know. The researchers are of the view that teachers should be adequately exposed to ICT training for acquisition of skills/competencies to enable them make effective use of the ICT tools in delivering OTM courses.

Conclusion

It can be concluded from this study that, effective application of ICT tools in the teaching/learning of ICT courses in Plateau State Polytechnic is affected by non-availability of ICT resources. Provision of the needed resources will go a long way in making ICT learning real and more interesting, no longer abstract. It will also assist OTM students in accessing information, have access to lessons presented with software,



simulate situations, build their own knowledge, improve their knowledge base to work with peers and experts across the globe, explore authentic issues and work at their own pace. The need to equip OTM lecturers/instructors with adequate ICT skills and infrastructure also becomes imperative.

Recommendations

Based on the findings of the study, the following recommendations are made and if implemented would go a long way to solve the problems of ICT availability and application in Polytechnics.

1. Government should encourage and put in place policies to attract international Agencies and Non-Governmental Organizations (NGOs) to invest on ICT projects in tertiary institutions in the State.
2. Distance learning is recommended for teachers whereby selected courses or complete teacher preparation programs is carried out over the internet to help prepare themselves to teach using current information-processing technologies.
3. Since ICT is power driven, Nigerian government should address the issue of incessant supply of electric powers to help institutions achieve their ICT program objectives.
4. Administrators of the Polytechnic should pay more attention to the needs of OTM department so as to provide the much needed ICT infrastructure and human capacity building required to deliver the mandate of OTM programs.

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