

Challenges to the Teaching of ICT Related Courses in Office Technology and Management Programmes In Colleges of Education



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ABSTRACT: The study focused on the challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States. Two research questions and two null hypotheses guided the study. The design of the study was a survey design. The population of the study comprised one hundred and seventy-seven (177) lecturers in the Department of Business Education in the Colleges of Education in Katsina and Kano States. There was no sampling. The entire population was studied. A structured questionnaire duly validated and with reliability coefficient of 0.95 was used for data collection. One hundred and seventy-seven copies of the questionnaire were administered on the respondents. All the copies were accurately completed and returned. Mean and standard deviation were used to answer the research questions while t-test was used to test the hypotheses at 0.05 confidence level. The results of the study showed that the challenges to teaching of ICT related courses in Office Technology and Management (OTM) programmes in colleges of education are teaching facilities and human resources related. It was also found that there is a significant difference between the mean responses of male and female lecturers on teaching facilities related challenges to the teaching of ICT-related courses in OTM programmes in Colleges of Education. In addition, it was found that there is a significant difference in the mean response of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes in Colleges of Education based on ownership. The implication is that OTM education graduates may not be relevant in this era of ICT if these challenges are not well tackled by the management of colleges of education. It was recommended, among others, that management in colleges of Education should provide adequate ICT teaching facilities and adequate human resources for effective implementation of OTM programmes. Government should provide adequate funding to enable effective provision of teaching facilities and appropriate mix of the quality and quantity of human resources needed for the effective implementation of ICT related programmes in OTM in the colleges of education.

KEYWORDS: Challenges, Teaching, Information and Communication Technology Office Technology Management

INTRODUCTION

Information and Communication Technology (ICT) is an umbrella term that includes all technologies encompassing medium for recording information such as magnetic disk, tape, optical disks (CD/DVD) flash and paper record, technology for the broadcasting, information, radio, television and technology for communicating through voice and sound or image, microphone, camera, loudspeaker, telephone or cellular phones (Augustine and Akpan, 2021). It also includes a wide variety of computing hardware, desktop computers, laptops and storage devices. From the foregoing, one can define ICTs as electronic devices that encompass CD-ROM, computer hardware and software, Internet, radio, television, disk and tape that libraries and information centers manipulate to facilitate recording, organizing, storage, retrieval, transmission and dissemination of information. The advent of ICT has broadened the horizon of education including Office Technology and Management as a result of increase in information. Information in various fields is readily available at split seconds. ICT has led to a fast paced world in almost all spheres of human endeavors. The rate at which the world is moving with Information and Communication Technology in this 21st century has left no choice to the educational sector especially in the area of teaching and learning than to dance to the tune piped by recent technological trends (Augustine and Akpan, 2021).

Since the evolution of ICT, giving and retrieving information have not remained the same. Information and Communication Technology has gained global recognition in the evolution of information dissemination (National Open University of Nigeria,

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2019). Information and Communication Technology tools for teaching and learning Office Technology and Management Education programme include computer, internet, PowerPoint software, television, overhead projector, camera, radio, video, tape, audio, world wide web(www) and telephones. Information and Communication Technology has been recognized to be a very powerful tool in education reform. It has radically influenced the way knowledge and information are generated, developed and transmitted. Information and Communication Technology has also turned the entire world into a global village and reduced the use of physical strength through performing tasks with automation (Drika, 2020).

Teachers, trainers and educationists who are not familiar with Information and Communication Technology find themselves threatened by professional obsolescence (Adewonj, 2020). Since education is perceived generally as an instrument par excellence for effecting sound changes, Information and Communication Technology, according to Adewonj (2020), has become the new communication and computing technology used for creating, storing, selecting, changing, developing, receiving and displaying all kinds of information. Adewonj (2020) classified information communication into three groups namely (i) those that process information e.g. computer (ii) those that disseminate information e.g. communication in electromagnetic devices and systems, and (iii) those for presentation of information e.g. multimedia. Information and Communication Technology is a technological tool and resource used to communicate, create, organize, disseminate, store, retrieve and manage information especially in the teaching ICT related courses in Office Technology and Management (OTM) Education programme.

Office Technology and Management (OTM) programme consists of courses that provide the business world with multi-skilled and knowledgeable workers who manage information efficiently, equipped with a comprehensive range of skills including managerial, technological and communication skills. Its graduates find employment in variety of fields in the business world. The work involves the management of information in administrative, financial, public relations, human resources, legal, e-commerce, event management or education and training environment. OTM programme was designed to equip students with secretarial/office skills for employment in various fields of Endeavour. The goals and objectives of OTM, according to the National Board for Technical Education (NBTE, 2004), are to: equip the students with the knowledge, competencies and specific skills that will enable them to successfully hold positions as secretaries, managers and administrative assistants in both public and private sectors of the economy; expose student to industrial experience thereby affording them the opportunity to practicalize their skills; develop the student's potentials for further academic and professional pursuit; develop in the students an occupational intelligence that will make them versatile and adaptable to the changing situation in the world of work.

The current OTM Education programme in colleges of education in Nigeria lays much emphasis on computer and computer related courses. Ojukwu (2018) observed that ICT related courses in the OTM curriculum include; ICT office application I and II, Database Management System, Management Information Systems, Advanced Web Page Design, Advanced Desktop Publishing, and Modern Office Technology. Thus, there is now more emphasis on ICT related courses. Some Colleges of Education, as noted by Ojukwu (2018), have indicated that there are not enough human resources to competently teach the ICT and related new courses especially in OTM Education programme. In the case of ICT office applications I and II, it was stated that lecturers who would teach the courses should be well knowledgeable in computer and its applications. Ojukwu (2018) also observed that Office Technology and Management Education teachers need to teach in line with the global demand and trends; and they should be dynamic to innovations in the education system. This would enable Office Technology and Management courses to achieve the objectives for which they are established. The modern Office Technology and Management Education teacher should be one who can source information locally and globally as the entire world has been a global village. Materials acquired in one environment should be used to solve problems in another environment.

In Nigeria tertiary institutions, OTM education has evolved as a branch of business education especially with the coming of ICTs into the education system. Its scope now includes a wider horizon of clusters of business and technological expositions to support the growth and development of individuals and nations. Extant literature has shown that one of the most immediately visible trends in OTM education across the globe is the continuous adjustment of the scope of its programs with the aim of tackling issues of global responsibility and sustainability- the most common response being the inclusion of new ICT modules in its existing programmes (Tilbury & Ryan, 2021). Mountjoy (2017) recognized significant changes in the scope of business education (OTM education inclusive) in America, which were triggered by scientific modernizations and changes in general attitudes of people towards business/vocational education. The scope of OTM education program has changed dramatically across the globe, in practice and theory and its curricular content has shifted focus from teaching typewriting, shorthand, and machine transcription to teaching ICT-related courses (Mountjoy, 2017; Isiyaku & Fidelia, 2020).

Unfortunately, despite the changes in the OTM education across the globe and in Nigerian tertiary institutions, OTM education still uses obsolete technologies (Asogwa, 2013; Isiyaku, Ayub & Kadir, 2018; Isiyaku, 2020). However, at the dawn of Nigeria's conception of the vision 2020 objectives, there were high expectations that special attention would be given to education at all

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levels, especially skill-oriented education such as OTM education. Over the past several years, Nigeria has not accorded adequate attention to the enhancement of the standard of its education system, especially with regard to Office Technology and Management Education. In 2007, the Federal Government of Nigeria recognized the importance of ICT and took the lead to integrate information technologies into OTM education programme. However, government's failure to provide adequate facilities for the implementation of such technologies in the classroom has left the situation unchanged. Hence, computers and other relevant facilities needed for the effective teaching and practice of OTM education in Nigeria's tertiary institutions have remained grossly inadequate with government continually failing to provide enough money needed for the anticipated reform in Nigeria's education (Edokpolor et al, 2017). But for an optimal teaching experience of ICT-related courses in OTM education programme, it is crucial to shift from the obsolete traditional designs and teacher-centered content delivery approach to a new model that supports the adoption of new technologies in teaching (Isiyaku, Ayub and Kadir, 2018). Doing this will entail securing solid ICT baseline, but teaching ICT-related courses in OTM education programmes in Nigerian tertiary institutions seems to be faced with several challenges including lack of adequate ICT infrastructure over the years, to effectively implement ICT-compliant teaching. These challenges according to Isiyaku (2020) could be school facilities related, human resource related, students related and/ or school administration related.

Some school facilities-related problems confronting the teaching of ICT-related courses in Office Technology and Management Education have been identified to include non-availability of computers or inadequate supply of computers in most of the Colleges of Education; inadequate or lack of physical facilities like ICT centers, virtual classrooms, lack of relevant software (Odera, 2021). To Abubakar (2016), the low rate of the adaptation and application of the new technology, especially in the Colleges of Education in Kastina and Kano States, is attributed to several factors which include inadequate ICT facilities in the schools, poor ICT policies, limited information infrastructures, poor perceptions of using ICT in education among teachers, students and the school administrators. Abubakar (2016) asserted that non-availability of ICT is often one of the most critical impediments to technology acceptance and integration in teaching and learning. They demonstrated that there is a persistent necessity for more ICT facilities if the nation is to effectively incorporate ICT into her Office Technology and Management Education. Poor Network services or poor internet services are another problem preventing effective usage of ICT facilities in teaching ICT-related courses in OTM. Odera (2021) opined that non-availability of computers or inadequate supply of computers in most of the colleges, lack of physical facilities to enable schools to introduce computer education and lack of relevant software are school facilities related challenges. Ilaonisi and Osuagwu (2010) also indicated that many factors limit the infusion of ICT in educational institutions in Nigeria. These include paucity of ICT infrastructure and lack of access; high student enrolments, inadequate funding and absence of funding allocation to technology; high cost of ownership and cost to the consumer and policy implications of the mismatch between the advertised capabilities of ICT technology and the aims of individual educational institutions

Otun and Atah (2021) noted that ownership of the colleges of education has influences in teaching of ICT-related courses in OTM programme in colleges of education in the areas of institutional funding, provision of modern ICT instructional facilities, provision of alternative power supply, employment and payment of lecturer's salary/ allowances. It is believed that Federal Government pays its staff regularly unlike the State Governments.

Furthermore, it is interesting to note that, the location of the institutions may influence the teaching of ICT-related courses in OTM programme in colleges of education. Otun and Atah (2021) defined location as a particular position, situation or geographical area. School location, therefore, refers to urban-rural school settings and this classification has influenced educational development (Abidogun, 2016). Otun and Atah (2021) explained that environment in which an employee works influences his level of utilization of emerging technologies considering the Internet connectivity and level of socio-economic development of such location or area. This area may be urban or rural area where the university is located. Location of an institution has a role to play regarding the challenges to the teaching of ICT-related courses in OTM programmes in colleges of education. Emele (2018) emphasized that lecturers in the rural areas have difficulty in the use of computer software and applications due to poor power supply and network connectivity.

In recent years, gender gap was a challenge to the teaching of ICT-related courses as have been found through many studies both locally and internationally. Lee (2017) asserted that gender is an ascribed attribute that differentiates feminine from masculine. Egbe (2019) looks at gender as a psychological term describing behaviour and attribute expected of individuals on the basis of being born either male or female. According to Offorma (2018), gender is a social construct and not biologically determined but a concept equivalent to race or class. This definition suggests that gender is socially or culturally constructed characteristics and role, which are associated with males and females in society. Danner and Pessu (2013) had established that females tended to be less interested in the utilization of modern ICT technologies in Business Education than males. In addition, Debyshire (2003) had earlier established that females are less confident than males in their computer skills, and that males perform better than females

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in Information and Communication Technology (ICT) related knowledge and skills. Notwithstanding the above findings, some studies have not found significant differences in gender towards the use of modern ICT instructional technologies in teaching of ICT-related courses in OTM programme. For instance, Adenuga, Owoyele and Adenuga (2011) did not find significant differences in the gender groups' attitudes towards ICT utilization in business education. Their study revealed that both male and female showed negative attitude towards the use of modern instructional technologies. The various studies discussed thus far show some evidence of gender disparities in the use of modern instructional technologies in Business Education pedagogy. This situation necessitated the consideration of gender disparity as one of the moderator variables in this work. Given the above background, the researchers were motivated to study the challenges to the teaching of ICT-related courses in Office Technology and Management Programmes in Colleges of Education.

STATEMENT OF THE PROBLEM

Teaching in OTM programme seems to be faced with myriads of challenges such as non-availability of new technologies which would makes it difficult to teach ICT-related courses and prepare students for the use of the technology in various fields of human endeavor. Despite the critical role of information and communication tools in sectors like banking, construction, transport and communication among others, it has not been fully adopted in the teaching process in Colleges of Education in Nigeria especially in Katsina and Kano States.

This study, therefore, was conducted to determine the challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States.

Purpose of the Study

The broad purpose of the study is to determine the challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education. Specifically, the study sought to:

1. determine the teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education.
2. ascertain the human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education.

Research Questions

The following research questions guided the study:

1. What are the teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education?
2. What are the human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education?

Hypotheses

The following hypotheses were tested at 0.05 level of significance:

HO₁: There is no significant difference in the mean ratings of male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education.

HO₂: There is no significant difference in the mean ratings of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education based on ownership.

METHODOLOGY

The design adopted for this study is a descriptive survey design. The study was conducted in Katsina and Kano States of Nigeria. The population for this study is one hundred and seventy-seven (177) lecturers in Business Education Departments in the Colleges of Education in Katsina and Kano States as at 2021/2022 academic year. Owing to the fact that the population is not too large, the entire population was studied. The instrument used for data collection was a structured questionnaire designed by the researchers. The instrument was subjected to validation by three experts - two ICT experts in Business Education and one expert in Measurement and Evaluation. The instrument was subjected to test of internal consistency, the entire 52 items of the instrument yielded a reliability coefficient of 0.95, which showed a very high internal consistency. One hundred and seventy-seven (177) copies of the questionnaire were administered to the respondents and fully retrieved. Mean and standard deviation were used to analyze data related to the research questions. The hypotheses were tested using t-test statistic at 0.05 level of significance.

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RESULTS

Research Question 1: What are the teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of the Colleges of Education?

Data collected with items 1 to 10 of the instrument were used to answer this research question. Summary of results is presented on Table1.

Table 1: Mean Responses on Teaching Facilities-Related Challenges to the Teaching of ICT-Related Courses in OTM Programmes.

| S/N | Teaching Facilities-Related Challenges | SA | A | D | SD | X | SD | Decision |
|-------------------|--|-----|----|----|-----|-------------|-------------|----------|
| 1 | Poorly equipped computer laboratory | 79 | 8 | 38 | 52 | 2.64 | 1.31 | A |
| 2 | Lack of internet services | 82 | 32 | 29 | 34 | 2.91 | 1.18 | A |
| 3 | Inadequate number of computers | 77 | 16 | 45 | 39 | 2.74 | 1.22 | A |
| 4 | Inadequate use of projector | 99 | 33 | 27 | 18 | 3.20 | 1.04 | A |
| 5 | Poor power supply | 78 | 54 | 32 | 13 | 3.11 | 0.95 | A |
| 6 | Inadequate use of printer | 21 | 20 | 25 | 111 | 1.72 | 1.07 | D |
| 7 | Inadequate use of scanners | 45 | 39 | 17 | 76 | 2.29 | 1.25 | D |
| 8 | Poor provision of modern furniture like chairs and tables | 56 | 22 | 24 | 75 | 2.33 | 1.30 | D |
| 9 | Inadequacy of air conditioners in computer laboratory | 101 | 24 | 28 | 24 | 3.14 | 1.12 | A |
| 10 | Inadequate provision of storage devices like CD ROMs, Flash drives and diskettes | 51 | 26 | 16 | 84 | 2.24 | 1.31 | D |
| Grand Mean | | | | | | 2.63 | 1.30 | A |

Note: A = Agree (challenge), D = Disagree (not a challenge)

Result on the Table 1 show that poorly equipped computer laboratory, lack of internet services, inadequate number of computers, inadequate use of projector, poor power supply and inadequacy of accommodations in computer laboratory are teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education with the mean rating between 2.64 to 3.20 while the respondents rejected inadequate use of printer, poor provision of modern furniture like chairs and tables and inadequate provision of storage devices like CD ROMs, Flash drives and diskettes as challenges with mean ratings of 1.72 and 2.29

Research Question 2: What are the human resources-related challenges to the teaching of ICT-related courses in OTM programme of the Colleges of Education?

Data collected with items 11 to 22 of the instrument were used to answer this research question. Summary of results is presented on Table 2 below.

Table 2: Mean Responses on Human Resources-Related Challenges to the Teaching of ICT-Related Courses in OTM Programmes.

| S/N | Human resources-related challenges | SA | A | D | SD | X | SD | Decision |
|-----|--|-----|----|----|----|------|------|----------|
| 11 | Inadequate number of ICT laboratory security personnel | 48 | 25 | 26 | 78 | 2.24 | 1.27 | D |
| 12 | Inadequate number of ICT trainers | 105 | 20 | 28 | 24 | 3.16 | 1.12 | A |
| 13 | Inadequate number of hardware maintenance staffs | 90 | 45 | 23 | 19 | 3.16 | 1.02 | A |
| 14 | Inadequate number of software maintenance staff | 93 | 31 | 30 | 23 | 3.09 | 1.10 | A |
| 15 | Inadequate number of laboratory attendants | 49 | 28 | 20 | 80 | 2.26 | 1.28 | D |
| 16 | Inadequate number of power supply control officers | 39 | 50 | 25 | 63 | 2.36 | 1.18 | D |
| 17 | Inadequate number of computer networking staff | 104 | 41 | 13 | 19 | 3.29 | 1.00 | A |

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| | | | | | | | | |
|-------------------|---|-----|----|----|----|-------------|-------------|----------|
| 18 | Inadequate number of laboratory cleaners | 59 | 23 | 22 | 73 | 2.38 | 1.31 | D |
| 19 | Irregular training and retraining of lecturers on computer literacy | 90 | 19 | 26 | 42 | 2.88 | 1.26 | A |
| 20 | Lack of computer hardware skills among lecturers | 121 | 20 | 16 | 20 | 3.36 | 1.04 | A |
| 21 | Lack of computer software skills among lecturers | 99 | 32 | 26 | 20 | 3.18 | 1.06 | A |
| 22 | Lack of interest among lecturers to learn ICT skills | 76 | 15 | 14 | 72 | 2.53 | 1.39 | A |
| Grand Mean | | | | | | 2.62 | 1.16 | A |

Results on the Table 2 show that inadequate number of ICT trainers, inadequate number of hardware maintenance staffs, inadequate number of software maintenance staff, inadequate number of computer networking staff, lack of computer hardware skills among lecturers, lack of computer software skills among lecturers and lack of interest among lecturers to learn ICT skills are the human resources-related challenges to the teaching of ICT-related courses in OTM programmes of the Colleges of Education with the mean rating between 2.63 to 2.94, while the respondents rejected inadequate number of laboratory attendants, inadequate number of power supply control officers, inadequate number of laboratory cleaners as challenges with mean ratings between 2.03 and 2.41.

Research Hypotheses

HO₁: There is no significant difference in the mean ratings of male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States.

Data collected on teaching facilities-related challenges were separated across gender and subjected to a t-test of difference between means of independent samples. Summary of the data analysis is presented on Table 3.

Table 3: T-test Results of Male and Female Lecturers on Teaching Facilities-Related Challenges to the Teaching of ICT-related courses in OTM programmes

| Items | Gender | N | Mean | SD | DF | t.Cal | t_criti | Difference |
|-------|--------|-----|------|------|-----|-------------|---------|--------------------|
| 1 | Male | 124 | 2.86 | 1.30 | 175 | 3.50 | 1.96 | Significant |
| | Female | 53 | 2.13 | 1.17 | | | | |
| 2 | Male | 124 | 3.21 | 1.07 | 175 | 5.65 | 1.96 | Significant |
| | Female | 53 | 2.20 | 1.11 | | | | |
| 3 | Male | 124 | 2.75 | 1.21 | 175 | 0.30 | 1.96 | Not Significant |
| | Female | 53 | 2.69 | 1.26 | | | | |
| 4 | Male | 124 | 3.13 | 1.04 | 175 | 1.30 | 1.96 | Not Significant |
| | Female | 53 | 3.35 | 1.02 | | | | |
| 5 | Male | 124 | 3.06 | 0.96 | 175 | 1.04 | 1.96 | Not Significant |
| | Female | 53 | 3.22 | 0.93 | | | | |
| 6 | Male | 124 | 1.63 | 1.04 | 175 | 1.65 | 1.96 | Not Significant |
| | Female | 53 | 1.92 | 1.10 | | | | |
| 7 | Male | 124 | 2.04 | 1.27 | 175 | 4.40 | 1.96 | Significant |
| | Female | 53 | 2.90 | 1.00 | | | | |
| 8 | Male | 124 | 1.98 | 1.24 | 175 | 5.94 | 1.96 | Significant |
| | Female | 53 | 3.15 | 1.06 | | | | |
| 9 | Male | 124 | 3.09 | 1.13 | 175 | 0.81 | 1.96 | Not Significant |
| | Female | 53 | 3.24 | 1.09 | | | | |
| 10 | Male | 124 | 1.91 | 1.24 | 175 | 5.68 | 1.96 | Significant |
| | Female | 53 | 3.03 | 1.10 | | | | |
| | | | | | | 3.02 | | Significant |

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Summary of the results presented on Table 3 indicates that the calculated t-value (3.02) is greater than the critical t-value of 1.96 at 0.05 level of significance. Based on the result, the null hypothesis is rejected indicating that there is a significant difference between male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education. The researchers concluded that there is a significant difference between the mean responses of male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States. This means that the gender of the respondents influenced their responses.

HO₂: There is no significant difference in the mean ratings of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States based on ownership.

Data collected on human resources-related challenges were separated across ownership (Federal and State owned Colleges of Education) and subjected to a t-test analysis. Summary of the data analysis is presented on Table 4

Table 4: T-test Result of on Human Resources-related Challenges to the Teaching of ICT-Related Courses in OTM programmes of Colleges of Education based on ownership.

| Items | Variables | N | Mean | SD | DF | t.Cal | t-crit | Difference |
|-------|-----------|-----|------|------|-----|-------------|--------|--------------------|
| 1 | Federal | 127 | 1.92 | 1.20 | 175 | 5.85 | 1.96 | Significant |
| | State | 50 | 3.06 | 1.05 | | | | |
| 2 | Federal | 127 | 3.25 | 1.07 | 175 | 1.82 | 1.96 | Not significant |
| | State | 50 | 2.92 | 1.22 | | | | |
| 3 | Federal | 127 | 3.09 | 1.07 | 175 | 1.44 | 1.96 | Not significant |
| | State | 50 | 3.34 | 0.87 | | | | |
| 4 | Federal | 127 | 3.04 | 1.11 | 175 | 0.94 | 1.96 | Not significant |
| | State | 50 | 3.22 | 1.05 | | | | |
| 5 | Federal | 127 | 1.94 | 1.23 | 175 | 5.62 | 1.96 | Significant |
| | State | 50 | 3.06 | 1.07 | | | | |
| 6 | Federal | 127 | 2.41 | 1.19 | 175 | 0.90 | 1.96 | Not significant |
| | State | 50 | 2.24 | 1.13 | | | | |
| 7 | Federal | 127 | 3.31 | 0.99 | 175 | 0.33 | 1.96 | Not significant |
| | State | 50 | 3.26 | 1.04 | | | | |
| 8 | Federal | 127 | 2.14 | 1.32 | 175 | 3.92 | 1.96 | Significant |
| | State | 50 | 2.98 | 1.11 | | | | |
| 9 | Federal | 127 | 3.06 | 1.24 | 175 | 3.02 | 1.96 | Significant |
| | State | 50 | 2.44 | 1.21 | | | | |
| 10 | Federal | 127 | 3.29 | 1.07 | 175 | 1.54 | 1.96 | Not Significant |
| | State | 50 | 3.56 | 0.95 | | | | |
| 11 | Federal | 127 | 3.13 | 1.08 | 175 | 1.05 | 1.96 | Not significant |
| | State | 50 | 3.33 | 0.99 | | | | |
| 12 | Federal | 127 | 2.15 | 1.37 | 175 | 6.41 | 1.96 | Significant |
| | State | 50 | 3.50 | 0.86 | | | | |
| | | | | | | 2.73 | | Significant |

The result in the Table above shows that the calculated t-value (2.73) is greater than the critical t-value of 1.96 at 0.05 level of significance. Hence, Ho₂ is rejected. It was therefore concluded that there is a significant difference in the mean responses of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education based on type of ownership. The researchers concluded that there is a significant difference in the mean responses of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes in Colleges of Education based on ownership (Federal or State) in Katsina and Kano States.

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DISCUSSION

The findings of this study in respect to the first research question identified teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of colleges of education, to include poorly equipped computer laboratories, lack of internet services, inadequate number of computers, inadequate use of projector, poor power supply. The findings agreed with Abubakar (2016), that low rate of the adaptation and application of the new technology especially in the Colleges of Education is attributed to several factors which include inadequate ICT facilities in the schools, poor ICT policies, limited information infrastructures, poor perceptions of using ICT in education among teachers, students, and the school administrators. Abubakar (2016) asserted that non-availability of ICT is often one of the most critical impediments to technology acceptance and integration in teaching and learning. These findings are also in line with the views of Odera (2012) that non-availability of computers or inadequate supply of computers in most of the colleges, lack of physical facilities to enable schools to introduce computer education and lack of relevant software are school facilities related issues. Ilaonisi and Osuagwu (2010) also indicated paucity of ICT infrastructure and lack of access; high student enrolments, inadequate funding and absence of funding allocation to technology; high cost of ownership and cost to the consumer and policy implications of the mismatch between the advertised capabilities of ICT technology and the aims of individual educational institutions.

However, the findings on the hypothesis tested showed that there is a significant difference in the mean responses between male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education. This means that the opinion of male and female lecturers differs regarding the teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education. This is in line with the findings of Danner and Pessu (2013) who established that females tend to be less interested in the utilization of modern ICT technologies in Business Education than males. In addition, studies like Debyshire (2003) also established that females are less confident than males in their computer skills, and that males perform better than females in Information and Communication Technology (ICT) related knowledge and skills. Notwithstanding the above findings, some studies have not found significant differences in gender towards the use of modern ICT instructional technologies in teaching of ICT-related courses in OTM programme.

The findings obtain from research question two show that lack of computer hardware skills among lecturers, lack of computer software skills among lecturers, lack of interest among lecturers to learn ICT skills, inadequate number of ICT trainers, inadequate number of hardware maintenance staffs, inadequate number of software maintenance staff and inadequate number of computer networking staff are human resources-related challenges to the teaching of ICT-related courses in OTM programmes of colleges of education in Katsina and Kano states. This finding is in line with that of Lewis (2003) who stated that without both good technical supports in the classroom and whole-school resources, teachers cannot be expected to overcome the obstacles preventing them from effective teaching of ICT related courses in Office Technology and Management. The findings are also in consonance with the finding of Toprakci (2006) who found that In Nigeria, the lack of technical support was one of two significant barriers to ICT integration in education and might be considered "serious".

Becta's survey (2004) also indicated that technical faults might discourage them from using ICT in their teaching because of the fear of equipment breaking down during a lesson. The Becta went further to note that "if there is a lack of technical support available in a school, then it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns". The findings are also in line with the work of Gomes (2005) who stated that ICT integration in teaching needs a technician and if one is unavailable the lack of technical support can be an obstacle. Sicilia (2005) also noted that technical barriers impeded the smooth delivery of the lesson or the natural flow of the classroom activity.

However, the findings on the hypothesis tested showed that there is a significant difference in the mean responses of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programme of Colleges of Education based on ownership. This means that state and federal colleges of education differs in their opinion regarding the human resources-related challenges to the teaching of ICT-related courses in OTM programme of Colleges of Education. These findings agree with Otum and Atah (2021) who noted that ownership of the colleges of education has influences in teaching of ICT-related courses in OTM programme in colleges of education in the areas of institutional funding, provision of modern ICT instructional facilities, provision of alternative power supply, employment and payment of lecturer's salary/ allowances. It is believed that federal government pays its staff regularly unlike the state government can owe many months' salary and allowances in colleges of education.

CONCLUSION

Based on findings of this study, it was concluded that that there is a significant difference between male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programme of Colleges of Education and there

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is significant difference in the mean response of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programme in Colleges of Education based on ownership. This means that gender and ownership (Federal or State Governments) influenced the mean responses of the subjects in the study.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. Management in colleges of Education should provide adequate ICT teaching facilities for effective implementation of OTM programme in Colleges of Education in Katsina and Kano States
2. Management in colleges of Education should be training and retraining OTM lecturers on computer literacy for effective implementation of OTM programme in Colleges of Education in Katsina and Kano States
3. Administrators of OTM programme in Colleges of Education in Katsina and Kano States should employ competent staff with ICT knowledge, technologists and technicians for teaching, proper installation and maintenance of the available information and communication technologies equipment in the department

REFERENCES

- 1) Abidogun, P. K. (2016). Availability, use of Information and Communication Technology and the ICT literacy skills of undergraduates in seven Nigerian universities. *Nigerian Journal of Business Education*, 2(1), 221-230.
- 2) Abubakar, D. (2016). Challenges of teacher's education for secondary schools in Nigeria. A paper Presented at a two-day National workshop on the Counting Crises of Secondary School Education in Nigeria: Confronting old and New Challenges held at Chida International Hotel, Abuja from September 13-14
- 3) Adenuga, R., Owoyele, J. W. & Adenuga, F. T. (2011). Gender and socio-economic background differentials in students' attitude towards ICT education in Nigeria Secondary School. *International Journal of Psychology and Counseling*, 3.9:162-166.
- 4) Adewonj, J. A. (2020). The place of information and communication technology in designing and utilizing instructional materials" in C.O Tihamiyu; Understanding New Technology in Instructional Media/ Materials Utilization. *A book of proceeding on a One Day Train the Trainer Open Workshop* (48-68).
- 5) Asogwa, G. J. (2013). Academic staff challenges to effective utilization of information and communication technology (ICT) in teaching/learning of agricultural education, *Academic Journal of Interdisciplinary Studies* 2(7). 180-186
- 6) Augustine & Akpan, (2021). Measures for effective implementation of Office Technology and Management Programme in Tertiary Educational Institutions in Nigeria, *Journal for the Advancement of Office Technology and Management* 5 (1)
- 7) Danner, R. B. & Pessu, C. O. A. (2013). A Survey Of ICT Computer Competencies Among Student Teaches Preparation Programmes At The University Of Benin, Benin-City, *Nigeria Journal Of Information Technology Education. Research* 12: 34-49
- 8) Debyshire, J. L. (2003). Integrating Information and Communication Technology (ICT) in Accounting Education instruction in Ekiti State Universities. *International Journal of Business and Social Science*, 5, 6(1), 195-204
- 9) Drika, D. (2020) A Survey Of ICT Computer Competencies Among Student Teaches Preparation Programmes At The University Of Benin, Benin-City, *Nigeria Journal Of Information Technology Education. Research* 12: 34-49
- 10) Edokpolor, S. Akpan, W. & Udom, F. (2017). Determinants of instructors' educational ICT use in Ethiopian higher education. *Journal of Education and Information Technologies*. 34(15), 273 – 286.
- 11) Egbe, C.I. (2019). Combined effect of mnemonics and gender on students achievement in English stress pattern. *International Journal of Educational Research*, 11 (1), 48-57
- 12) Emele, E.O. (2018). Application of New Technologies and Mentoring strategies in Business Education among Business Educators in Tertiary Institutions in Cross River State, Nigeria. *International Journal of Social Sciences (IJSS)*. 2(1), 137-149.
- 13) Gomes, F. (2005). A study of the technology based forms of instruction at the university of Missouri. A doctoral dissertation, Faculty of Graduate School, University of Missouri-Columbia. Retrieved on 11th June, 2014.
- 14) Ilaonisi & Osuagwu (2010). Problems in the Utilization of Information and Communication Technology in Teaching and Learning in Technical Colleges in Rivers State. *International Journal of Innovative Information Systems & Technology Research*, 8(3):37-45.
- 15) Isiyaku, Ayub & Kadir, (2018). Challenges and opportunities for e-learning in education: a case study," in *Educational Technology Integration and Active Learning*, pp. 317328, IGI Global, Hershey, PA, USA

Challenges to the Teaching of ICT Related Courses in Office Technology and Management Programmes In Colleges of Education

- 16) Isiyaku, D.D. (2020). Evolutions in Office Education programs in Nigerian tertiary institutions within the parameters of Nigeria's vision 20:2020 objectives. -*Bichi Journal of Business Education (BIJOBE)*, 4(1), 1-16.
- 17) Isiyaku, D. D. & Fidelis, F. (2020). NBTE new curriculum in office technology and management (OTM) for ND/HND Accounting: Observations and commenets. *Business Education Journal*, 6(1), 31 – 36.
- 18) Lee, A.M. (2017). Investigating the factors influencing continuance usage intention of learning management systems by university instructors. *International Journal of Web Information Systems*, \ 1(4), 491-509.
- 19) Mountjoy, A. (2017). Opportunities and challenges for integrating ICTs in education delivery in the Institute of Continuing Education at the Open University of Tanzania. *Journal of Public Administration and Policy Research*, 3(9), 237-242
- 20) National Board for Technical Education (2014). Office technology and management curriculum and course specifications. Kaduna: NBTE.
- 21) National Open University, (2019). Applying self-regulated learning strategies in a web-based instruction: An investigation of motivation perception. *Computer Assisted Language Learning*. 18(7), 217 – 230.
- 22) Odera, H. (2021). ICT provision to disadvantage urban communities: A study in South Africa and Nigeria. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*. 2(1)
- 23) Odera, W. S. (2012). The impact of vocational education on business education students at Tai Solarin University of Education, Ijebu-Ode, Ogun State. *Journal of Business Education and Entrepreneurial Development (JOBED)*, 1(1), 81 – 95.
- 24) Offorma, G.C. (2018). Language and gender. *International Journal of Arts and Technology*, 3, 49-62.
- 25) Ojukwu, K. (2018). A review of literature on empowerment of office technology and management teachers of Nigerian Polytechnics. *Business Education Journal*, 7(1), 3-8.
- 26) Otum, N.I. & Atah, C. A. (2021). Perceived Strategies for Teaching Business Education Curriculum Content for the Acquisition of Skills Competence. *International Journal of Education and Evaluation* (5). 12-20. Retrieved from: www.iiardpub.org.
- 27) Sicilia, C. (2005). The Challenges and Benefits to Teachers' Practices in Constmctivist Learning Environments Supported by Technology. *Unpublished Master's thesis. McGill University. Montreal*.
- 28) Tilbury, G. & Ryan, F (2021). Pedagogy before technology: Re-thinking the relationship between ICT and teaching. *Education and Information Technologies*, 6(4), 251-266.
- 29) Toprakci, E. (2006). Obstacles at integration of schools into information and communication technologies by taking into consideration the opinions of the teachers and principals of primary and secondary schools in Turkey. *Journal of Instructional Science and Technology (e-JIST)*, 9(1), 1-16.



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