



**KWARA STATE UNIVERSITY, MALETE, NIGERIA  
SCHOOL OF POSTGRADUATE STUDIES (SPGS)**

**INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGY  
COMPETENCIES ON THE TEACHING OF OFFICE TECHNOLOGY AND  
MANAGEMENT COURSES IN POLYTECHNICS**

**Ramat Omolola, IMMAM  
18/27/MBE006**

*July, 2022*



## **SCHOOL OF POSTGRADUATE STUDIES (SPGS)**

# **INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGY COMPETENCIES ON THE TEACHING OF OFFICE TECHNOLOGY AND MANAGEMENT COURSES IN POLYTECHNICS**

**A M.Sc. THESIS SUBMITTED**

***BY***

**Ramat Omolola, IMMAM  
18/27/MBE006**

**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF  
MASTERS OF SCIENCE (M.SC) IN BUSINESS EDUCATION,  
DEPARTMENT OF BUSINESS AND ENTREPRENEURSHIP EDUCATION,  
FACULTY OF EDUCATION,  
KWARA STATE UNIVERSITY, MALETE  
NIGERIA**

***July, 2022***

## DECLARATION PAGE

I hereby declare that this Thesis titled Influence of Information and Communication Technology on the Teaching of Office Technology and Management Courses in Polytechnics is a record of my research. It has neither been presented nor accepted in any previous institution for higher degree.



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**Ramat Omolola Immam**

02/08/2022


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Date

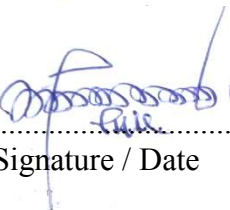
## APPROVAL PAGE

This to certify that this Thesis by Ramat Omolola Immam has been read and approved as meeting the requirements of the Department of Business and Entrepreneurship Education for the award of the degree of Master of Science (M.SC.) in Business Education


Prof. Titus A. Umoru  
Main Supervisor

 02/08/2022  
Signature / Date


Dr. Joshua S. Mamman  
Co-Supervisor

 02/08/2022  
Signature / Date

Asst. Prof. Bibiana N.  
Head of Department,  
Business and Entrepreneurship Education

 02/08/22  
Signature / Date

Asst. Prof. Stephen Afolabi  
Internal Examiner

 02/8/2022  
Signature / Date

Prof. (Mrs) Ezeani N.S  
External Examiner

 25/07/2022  
Signature / Date

Prof. Hamzat I. Abdulraheem  
Dean, School of Postgraduate Studies (SPGS)

.....  
Signature / Date

## **DEDICATION**

This Thesis is dedicated to my late parents Mallam and Mrs. Jimoh. A.M.

## ACKNOWLEDGEMENTS

All praises and adoration be to Almighty ALLAH, the ruler of the whole universe and custodian of great wisdom, who has designed me to attain this academic height in life. He has made the beginning of my career good, the middle prosperous and the end successful despite all odds.

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## Abstract

*This study examined the Influence of Information and Communication Technology Competencies on the Teaching of Office Technology and Management Courses in Polytechnics. Four research questions with four corresponding null hypotheses guided the study. The study adopted descriptive survey research design. The population of the study was 106 lecturers of Office Technology and Management Department in ten accredited Polytechnics in North Central Nigeria. All the entire population was used for the study due to the manageable size of the respondents. The instrument for data collection was “Influence of information and communication technology competencies questionnaire (IICTCQ)” to gather data from respondents. Cronbach Alpha was used to determine the reliability of the instrument. The reliability coefficient calculated for the instrument was 0.88. This coefficient is high and positive, therefore the instrument was adjudged reliable. The mean and standard deviations were used to analyze the research questions while independent t-test was used to test the hypotheses at 0.05 level of significance. The findings of the study revealed that basic computer operation competencies influence the teaching of OTM courses in polytechnics to high extent (Mean = 3.18); networking competencies influence the teaching of OTM courses in polytechnics to high extent (Mean =3.47); media competencies influence the teaching of OTM courses in polytechnics to high extent (Mean 3.45); telecommunication competencies influence the teaching of OTM courses in polytechnics to high extent (Mean = 3.06). There is no significant difference in the mean rating of male and female respondents on the extent to which basic computer operation competencies influence the teaching of OTM courses in Polytechnics. Based on the findings, it was concluded that Information and communication technology competencies has positive influence on the teaching of Office Technology and Management Courses in polytechnics. School authority should ensure that OTM lecturers are given opportunity of training and re-training to acquire computer competencies needed for higher education teaching by undergoing advanced computer courses in the area of management information system, desktop publishing and webpage among others.*

## **CHAPTER ONE**

### **INTRODUCTION**

#### **Background to the Study**

Adaptation of new curriculum in teaching Office Technology and Management (OTM) courses demands that lecturers adequately possess relevant new technologies competencies in Polytechnics. This has added responsibilities on the part of lecturers and students of OTM, particularly in the acquisition of relevant competencies for teaching and learning in order to make OTM graduates acquire saleable and marketable skills needed for the world of work. According to Ezeahurukwe and Ameh (2017), OTM is an efficient, effective, productive and functional education which can lead to self employment, self reliance, paid employment and consequently self-actualization. This therefore, involves the need for competencies in new Technology by OTM lecturers which will help the students in skills related outcomes.

Competency is the knowledge, skills, ability and attitude to carry out an assigned duty well; Commission for Information and Communication Technology (CICT) (2011) defined competency as the knowledge, skills, characteristics associated with high performance. Ojukwu and Ojukwu (2012) asserted that lecturer's teaching competence means the knowledge, skills and behaviour that enable a lecturer to meet and establish performance criteria. Akiri and Usborusbo (2010) posited that lecturer's teaching competence is a multi-dimension concept that measures numerous interrelated aspects of sharing knowledge with students which include communication skills, subject matter expertise, lecture attendance, teaching skills and lecturers' attitude. Students' academic performance can be measured using different methodologies. According to Folorunsho (2012) students' academic achievement is the summation of academic gains of a student at the end of a semester.

Al-Mutairi (2011) stated that out of the many factors that influence students' academic performance, lectures remain one of the important factors. Office Technology and Management (OTM) programme is designed to equip students with office management skills for employment in various fields of endeavour. Okoji (2012) further stated that in addition to acquisition of vocational skills in Office Technology and Management, the students are equipped with effective ICT competencies and Social- psychological work skills which are very essential in every day interaction with others. It is a course of study designed to develop skills, abilities, understanding, attitudes, work habits and appreciation of encompassing knowledge and information needed by individuals to enter and progress in employment (be it paid or self employment) on a useful and productive basis.

To accomplish the objectives of competencies in line with the current realities in office situation, a number of Information and Communication Technology courses were introduced into new Office Technology and Management curriculum. These courses are ICT I, ICT II, Modern Office Technology, Desktop Publishing, Webpage Design, Data Base Management System, Advanced Desktop Publishing sand Advanced Webpage Design. The National Board for Technical Education (NBTE) and Commission for Information and Communication Technology (CICT) categorized these ICT courses as follows: ICT Application, Desktop Publishing Application, Data Base Management System Application and Webpage Design Application which is in line with provision of the National Policy on Education, Federal Republic of Nigeria. The policy stated further that the goal of Polytechnic Education shall be among others, the acquisition of appropriate skills, abilities and competencies both mental and physical as equipment for the individual to live and contribute to the development of his/her society.

Thus, the invention of modern technology posed an enormous challenge to OTM lecturers and the society as a whole. For instance the influence of ICT office application skills

will enable the lecturers to use computers and multi-media projectors to improve their instructional delivery system. In teaching ICT office application, the lecturers should among other things be able to load application software and explain the environment and basic functions like creating files and folders, entering and editing text accurately, copying, cutting, pasting, saving and deleting files, previewing and printing document. Desktop Publishing competence is also needed by OTM lecturers. It is a skill that is used for creation of documents like newsletters, brochures, posters and books (Azuka, 2012)

Another area of ICT competence that was given due consideration in the 2004 (NBTE) curriculum and course specification for OTM is Data Base Management System. The aim was to enable the students to have deeper knowledge of office information system with particular emphasis on file creation, storage, management and manipulation (NBTE, 2004). Webpage is also included in OTM programme. Students should be taught design software application to enhance online or networking performance and using of internet for commercial and business purposes. The user can create an e-mail address, username, password, composing, replying and sending of e-mails. Advancement in Information and Communication Technology made it possible for people in different parts of the world to communicate face to face through satellite, video conferencing as well as transmit faxes embodying complex designs. Lecturers have to be prepared to confront the challenges of the emerging technologies in order to fit into the industrial and information society of this global era.

The rapid advancement in technology and new innovations has created various business needs and has opened new opportunities like e-business, e- communication, e-purchasing, e-marketing and e-learning. All these make use of electronic device to conduct business practices on-line and these opportunities pose enormous challenges to OTM lecturers and society at large. There is urgent need to ensure that those coming through Business

Education and those currently in the workforce have the right skills. ICT competencies are essential for driving these on-line practices and OTM lecturers must acquire these skills in order to deliver the new methods of communication in their teaching programmes for instance acquisition of power point sub skills will enable the lecturers to use computers and multi-media projectors to reform their instructional delivery. Office Technology and Management lecturers are required to possess ICT competencies covering computer operation competencies, networking competencies, media competencies and telecommunication competencies among others in order to make OTM graduate to be relevant for the world of work.

Basic computer operation competencies are used by OTM lecturer to demonstrate his/her ability to perform college level basic computing work. Office Technology and Management education in Nigeria has been evolving and developing with the advancement in office work and technology. As a response, many tertiary institutions in Nigeria have changed the nomenclature from Secretarial Education/Studies to Office Technology and Management. Igbinedion (2011) said that Secretarial Education which gave birth to Office Technology and Management started in the United States of America in the 17<sup>th</sup> and 18<sup>th</sup> centuries, and expanded rapidly to some developed countries and developing countries by the 19<sup>th</sup> and 20<sup>th</sup> centuries. Igbinedion also stated that OTM education is a specialized phase of vocational education that prepares students to enter teaching and office occupations as capable and intelligent members of the work force. The use of secretarial services permeates all facets of a country's socio-economic and political life ranging from schools hospitals, corporate settings legal, medical offices among others. Amoor (2010) also affirmed that OTM/Secretarial education came to limelight in the last decades of the 19<sup>th</sup> century when some Nigerians in business partnerships with overseas exporters had to learn simple commercial subjects for the purpose of facilitating business transactions. The stages of

development of OTM is taken from the manual typewriting stage, electric typewriting stage, electronic typewriting stage to word processing stage which ushered in information and communication technology era.

Rapid advancement in ICT has made it possible for people in different parts of the world to communicate face to face through satellite, video conferencing as well as transmit faxes embodying complex designs and drawings via regular telephone line. Lecturers have to be prepared to confront the challenges of the emerging technologies in order to fit into the industrial and information society of this global era. The rapid advancement in technology and new innovations have created various business needs, wants, challenges and has opened new opportunities like e-business e-communication, e-purchasing, e-marketing, e-finance, e-learning and e-service. All these make use of electronic devices to conduct businesses on-line. These opportunities pose enormous challenge to OTM lecturers and the entire society. There is an urgent need to ensure that students and different categories of workers acquire the right skills for the 21<sup>st</sup> century. There is no doubt that a comparative advantage of any nation is a function of the capacity of her population to embrace new technologies and incorporate them into the production process. This comparative advantage increases with the ability of the populace to efficiently utilize the new technologies.

ICT competencies are essential for driving these on-line practices. OTM lecturers must acquire them in order to deliver the new methods of communication in their teaching programmes. For instance, the acquisition of power point user's skills will enable them use presentations in their instructional delivery. The study is motivated by the fact that there has been excitement of the introduction of ICT for the training of OTM students, the situation on ground and qualities of OTM graduates does not seem to support the enthusiasm. Observation in many tertiary institutions where OTM is taught, the complementary ICT gadgets seem to be in short supply and these manifest on the quality of student graduates in OTM in our

tertiary institutions. This study is therefore, significant as it will provide requisite information on the computer and networking competencies possessed by OTM lecturers in tertiary institutions and it will help the tertiary institutions in packaging professional development programs for lecturers to update their ICT knowledge and skills.

Stuart (2011) reiterated that the new trends in teaching and learning include varying the type of content-images, sounds and text work together to build memory in the brain and result in better retention of the material, creating interaction that engages the attention, providing immediate feedback because each step of learning builds upon the previous steps, encouraging interaction with other e-learners through chat rooms, discussion boards, e-mail among others. Tella, Toyobo, Adika and Adeyinka, (2010) explained the importance of ICT to include, heightening of motivation, helping recall of previous learning, providing new instructional stimuli, activating the learners' response, providing systematic and steady feedback, facilitating appropriate practice, sequencing learning appropriately, and providing a viable source of information for enhanced learning. Teachers who use ICT for instruction are able to kindle in the learners a desirable attitude towards information technology tools in their entire way of life.

Office Technology and Management lecturers should be competent to teach students all forms of communication sent and received through the electronic means. Messages sent and received through the electronic means can be achieved either with the use of SMS or E-mail. SMS (Short Message Service): this is a communication service that allows sending short text messages (up to 160 characters for a page) over the mobile phones.

E-mail: this is referred to as electronic mail. The e-mail provides its services through the internet which offers real time communication at a very low cost and has the ability to transfer files. E-mail involves transfer of textual messages through which documents from any program can be sent. Graphical illustrations and pictorial materials can equally be

forwarded through the e-mail with the aid of attachment. Such documents can be scanned and sent as attachment to the recipient. In sending messages through the e-mail, it is mandatory for the sender and the receiver to have an e-mail address which is the language the network understands. E-mail equally provides the opportunity for the sender to send a message to many recipients at a time. Computer technology has opened wide opportunities for teachers to integrate computers in teaching-learning process. Computers greatly facilitates teaching-learning process for various curricular subjects especially language, mathematics and science. Computer technology is also being increasingly applied in non-instructional (record keeping, grade averaging, communication, among others.) and pre-instructional (developing materials, researching instructional content, among others.) uses. Various educationists have interrelated computer use with constructivist, collaborative, and inquiry-based learning and also, with pedagogical change (Ejide, 2016)

Studies carried out around the world in various industrialized as well as information-based countries have affirmed on time and again that computer technology on its own shall never be able to substitute teachers and teachers shall always remain the principal actors who would facilitate harnessing the true potential of computer technology in education. Hence, it is important for teachers to become computer literate, and be prepared to use information technology in schools. Being prepared to adopt and use technology and knowing how that technology can support student learning must become integral skills in every teacher's professional repertoire. Various initiatives, mandates, recommendations put-forth by different government organizations and policies have definitely served as catalysts to motivate school teachers in this direction. Various developing countries are currently following in the footsteps of the developed countries in promoting the use of technology in education (Ofodu, 2017)

Networking competencies are used by the OTM lecturers to teach students how the world is becoming a global village which is the integrating force. Educators are beginning to gain insight in how internet/networking can enhance learning. The opportunity provided by the internet is of great importance to technical education. However to gain the most out of the potentials of the internet in enhancing the learning process, technical teachers need to be competent in handling the internet.

One greatest contribution of the new information and communication technology is the ability to create a global environment that is drawing the people of the world closer and closer together. The new ICT has gone a long way in reducing/removing distance, cost and time which have limited human transactions in the past. It is now possible to transact /communicate with someone billions of miles away in seconds. The internet is the integrating force, which has melded the technology of communication and computing to provide instant connectivity and global information services to all its users at a very low cost (Yusuf, 2015).

Akude and Ebeniza (2012) stated that the Internet is revolutionizing our society, economy and technological systems. According to them, no one knows for certain how far or in what direction the Internet will evolve, but no one should underestimate its importance.

The Internet was the result of some visionary thinking by people in the early 1960s, who saw great potential value in allowing computer to share information on research and development in scientific and military fields. The Internet is a global network of networks connecting millions of computers or computer networks and computer users. The Internet provides up-to-date information on a variety of classroom related topics unavailable from other sources. The content of textbook, library and teacher knowledge is enhanced by this new medium (Robinson, 2017).

Media competencies are used by the OTM lecturers to combine basic types of media into learning environment e.g. video, sound, graphic and animation, thus providing a

powerful teaching and learning environment. Multimedia document encourage deep reflective thinking and empower student to create and design rather than absorbing representations created. Examples of multimedia facilities are video conferencing interactive whiteboard, DVD, slide, multimedia projector among others. Multimedia projector is designed to project video signal and computer video to a screen. Such projector is a complex electronic device, however it is quite easy to control. With multimedia projector, the students no longer have to crowd around a computer monitor to view representation, website or training programmes. It directly engages students and makes impact to each lecture. Popular reference material, enclopedia, textbook, projects work can be recorded in DVD and used for teaching and learning. Information such as seminars, conference, project defense, new OTM textbooks and journals can be placed on the electronic notice board.

Stuart (2011) stated that the new trends in teaching and learning include varying the type of content-images, sounds and next work together to build memory in the brain and result in better retention of the material, creating interaction that engages the attention, providing immediate feedback because each step of learning builds upon the previous steps, encouraging interaction with other e-learners through chat rooms, discussion boards, e-mail among others. Tella, Toyobo, Adika and Adeyinka, (2010) explained the importance of ICT to include, heightening of motivation, helping recall of previous learning, providing new instructional stimuli, activating the learners' response, providing systematic and steady feedback, facilitating appropriate practice, sequencing learning appropriately, and providing a viable source of information for enhanced learning.

Teachers who use ICT for instruction are able to kindle in the learners a desirable attitude towards information technology tools in their entire way of life. Media as a tool in enhancing effective teaching and learning in office technology and management education, users of media can connect to each other without regulation of national boundaries, culture or

religion within field and across industries. This platform is very vital to education sector for purpose of effective teaching and learning. The emergency of multi-media has forced educator to think about the way learning occurs.

Telecommunication competencies are used by OTM lecturers to teach students all forms of communication sent and received through the electronic means. Messages sent and received through the electronic means can be achieved either with the use of SMS or E-mail. SMS (Short Message Service): is a communication service that allows sending short text messages (up to 160 characters for a page) over the mobile phones. E-mail: is referred to as electronic mail. The e-mail provides its services through the internet which offers real time communication at a very low cost and has the ability to transfer files. E-mail involves transfer of textual messages through which documents from any program can be sent. Graphical illustrations and pictorial materials can equally be forwarded through the e-mail with the aid of attachment. All these competencies which are basic computer operations competencies, networking competencies, media competencies and telecommunication competencies are influenced by gender. The polytechnic is an institution that is owned by either public or private individuals or organizations. This study is particularly centered on public polytechnic that are owned either Federal or State governments. It is as a result of this background that this study was conducted to examine influence of information and communication competencies on the teaching office technology and management courses.

### **Statement of the Problem**

The renaming of Secretarial Studies Programme to Office Technology and Management (OTM) has paved way for the introduction of new skilled courses in the field. This innovation has posed challenges to both lecturers and students of OTM in their respective functions of teaching and learning. The researcher has observed that most OTM lecturers in polytechnics do not possess the basic ICT competencies in some area for effective

implementation of OTM curriculum. This was further buttressed by Umoru (2015) who reported that in Nigeria many Business Education Teachers lack competence in new technology application as a result of which they face their work with fear and trepidation (concern). Since the level at which a lecturer can perform depend on his level of competencies, OTM lecturers are required to possess ICT competencies covering computer operation, networking, telecommunication and media competencies among others.

In addition to technological advancements which call for a corresponding change in teaching methods, the change in 2004 from Secretarial Studies to Office Technology and Management necessitated a change not only in methods but also in the content of the programme. However, from the researcher's interactions and observations with OTM lecturers it was discovered that most of the lecturers lack ICT competencies in some area. By implication of this, most OTM lecturers who were trained in Secretarial Studies were not up to the task in handling the change brought about by the inclusion of e-world courses. These alarming state of affairs calls for study on what competencies are required of OTM lecturers to enable them operate in the e-world of higher education. This has influenced the decision of the researcher to embark on the Influence of Information and Communication Technology Competencies on the Teaching of Office Technology and Management Courses in Polytechnics.

### **Purpose of the Study**

The main purpose of this study was to determine the influence of Information and Communication Technology competencies on the Teaching of Office Technology and Management courses in Polytechnics. Specifically, it sought to:

1. Determine the extent to which basic computer operation competencies influence the teaching of OTM courses in Polytechnics.

2. Examine the extent to which networking competencies influence the teaching of OTM courses in Polytechnics.
3. Examine the extent to which media competencies influence the teaching of OTM courses in Polytechnics.
4. Ascertain the extent to which telecommunication competencies influence the teaching of OTM courses in Polytechnics.

### **Research Questions**

The following research questions guided the study:

1. To what extent do computer operation competencies influence the teaching of OTM courses in Polytechnics?
2. To what extent do networking competencies influence the teaching of OTM courses in Polytechnics?
3. To what extent do media competencies influence the teaching of OTM courses in Polytechnics?
4. To what extent do telecommunication competencies influence the teaching of OTM courses in Polytechnics?

### **Research Hypotheses**

The following null hypotheses were formulated and tested at 0.05 level of significance

1. There is no significant difference in the mean rating of male and female respondents on the extent to which basic computer operation competencies influence the teaching of OTM courses.
2. There is no significant difference in the mean rating of male and female respondents on the extent to which networking competencies influence the teaching of OTM courses.
3. There is no significant difference in the mean rating of male and female respondents on the extent to which media competencies influence the teaching of OTM courses.

4. There is no significant difference in the mean rating of male and female respondents on the extent to which telecommunication competencies influence the teaching of OTM courses.

### **Significance of the Study**

The findings of this study when published in a reputable journal are expected to be of benefit to the Office Technology and Management Lecturers, Students, National Board for Technical Education and Research Scholars. The findings of the study would be useful to OTM lecturers because it would enlighten them on different types of competencies that will help them to improve and enhance teaching and learning. The lecturers would also know the extent of their current competencies and upgrade themselves through in-service training to be given by Tetfund in order to remain relevant to the present Information and Communication Technology era.

The findings of the study would also be of benefit to National Board for Technical Education by guiding the curriculum planners to make necessary review towards enriching the office automation teaching competencies by introducing courses that would promote the acquisition of requisite competencies that can be integrated into the curriculum to enable the lecturers to live up to their profession in the area of advanced technology and office automation to ensure effective instruction.

Finally, the outcome of this study would contribute to the existing literature for the use of other researchers embarking on similar topic.

### **Delimitation of the Study**

This study was delimited to the influence of Information and Communication Technology competencies on the teaching of OTM courses in ten accredited public Polytechnics in the six States in North Central Nigeria. The target population for the study was male and female lecturers in OTM Department in six State Polytechnics and four Federal

Polytechnics in North Central Nigeria. The content was also delimited to determine the influence of ICT competencies to be possessed by OTM lecturers which includes: basic computer competencies, networking competencies, media competencies and telecommunication competencies among others.

### **Operational Definition of Terms**

The following words are defined according to their usage in the thesis:

**Lecturer's teaching Competencies:** this mean the expected skill norms and values that will provide effective teaching delivery.

**Office Technology and Management:** Skills acquisition programme in Polytechnic.

**ICT:** A tool to process information.

**Basic Computer operation competencies:** Ability of OTM lecturers to use computer to teach OTM students,

**Networking competencies:** Ability of lecturers to teach students how to work with internet,

**Media competencies:** Ability of lecturers to teach students how to use text and images to send messages.

**Telecommunication competencies:** Ability of lecturers to teach student on how to use computer to send and receive mails.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

This chapter of the research study reviewed related literature in relevant journals, textbooks, magazines, internet, technical reports and newspaper publications. The review are presented under the following sub-headings:

#### **Theoretical Framework**

Diffusion of Innovation Theory by Rogers (2003)

Conceptual Framework

Concept of Information and Communication Technology

Concept of Teaching

Office Technology and Management (OTM)

Lecturers' Teaching Competencies

Basic Computer Operation Competencies for Teaching of OTM Courses

Networking Competencies for Teaching OTM Courses

Media Competencies for Teaching OTM Courses

Telecommunication Competencies for Teaching OTM Courses

#### **Review of Related Empirical Studies**

#### **Appraisal of Literature Review**

#### **Theoretical Framework**

The theory considered most appropriate for this study is illustrated below:

#### **Diffusion of Innovation Theory**

Diffusion of Innovation Theory was propounded by Rogers in 2003. This research was based on Rogers Diffusion of Innovations Theory (2003) because it dealt with the adoption of technology which this current research looked at. Stuart (2011) described Rogers' Theory as a widely used theoretical framework in the area of technology diffusion and

adoption. Similarly, Medlin (2011) stated that Rogers' Diffusion of Innovations Theory is the most appropriate for investigating the adoption of technology in higher education and educational environments. Rogers (2003) usually used the word "technology" and "innovation" as synonyms. He opined that, adoption is a decision of full use of an innovation as the best course of action available and rejection is a decision not to adopt an innovation.

There are four main elements contained in the theory, the first element is innovations which according Rogers (2003) refers to an idea, practice, or project that is perceived as new by an individual or other unit of adoption. An innovation may have been invented a long time ago, but if individual perceives it as new, then it may still be an innovation for individual. The newness characteristic of an adoption is more related to the three steps (knowledge, persuasion, and decision) of the innovation-decision process. According to Rogers (2003), uncertainty is an important obstacle to the adoption of innovations. An innovation's consequences may create uncertainty. To reduce the uncertainty of adopting the innovation, individual should be informed about its advantages and disadvantages to make them aware of all its consequences. Moreover, Rogers claimed that consequences can be classified as desirable versus undesirable, direct versus indirect, and anticipated versus unanticipated.

The second element of the diffusion of innovations process is communication channel, For Rogers (2003) communication is a process in which participants create and share information with one another in order to reach a mutual understanding. This communication occurs through channels between sources. Rogers (2003) stated that a source is an individual or an institution that originates a message. A channel is the means by which a message gets from the source to the receiver. Rogers (2003) stated that diffusion is a specific kind of communication and includes these communication elements: an innovation, two individuals or other units of adoption, and a communication channel, mass media and interpersonal communication are two communication channels, while mass media channels

include a mass medium such as television, radio, or newspaper, interpersonal channels consist of a two-way communication between two or more individuals. On the other hand, diffusion is a very social process that involves interpersonal communication relationships. Thus, interpersonal channels are more powerful to create or change strong attitudes held by an individual. In interpersonal channels, the communication may have a characteristic of homophile, that is, the degree to which two or more individuals who interact are similar in certain attributes, such as beliefs, education, socioeconomic status, and the like, but the diffusion of innovations requires at least some degree of heterophily, which is the degree to which two or more individuals who interact are different in certain attributes. In fact, one of the most distinctive problems in the diffusion of innovations is that the participants are usually quite heterophilous

The third element is Time which Rogers (2003) said is ignored in most behavioral research. Rogers (2003) affirmed that including the time dimension in diffusion research illustrates one of its strengths. The innovation-diffusion process, adopter categorization, and rate of adoptions all include a time dimension. The fourth element is Social System which Rogers (2003) defined as the last element in the diffusion process. Rogers defined the social system of interrelated units engaged in joint problem solving to accomplish a common goal. Since diffusion of innovations takes place in the social systems, it is influenced by the social structure of the social system. For Rogers, structure is the patterned arrangements of the units in a system. He further claimed that the nature of the Social system affects individuals' innovativeness, which is the main criterion for categorizing adopters.

### **The Innovation-Decision Process**

Rogers described the innovation-decision process as an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation. According to him, the innovation-

decision process involves five steps: namely knowledge, persuasion, decision, implementations and confirmation. These stages typically follow each other in a time-ordered manner.

**The Knowledge Stage:** The innovation-decision process starts with the knowledge stage. In this step, an individual learns about the existence of innovation and seeks information about the innovation. “what?” “how?,” “why?” are the critical questions in the knowledge phase. During this phase, the individual attempts to determine what the innovation is and how and why it works. According to Rogers, these questions form three types of knowledge: (1) awareness-knowledge, (2) how-to-knowledge, and (3) principles-knowledge.

**Awareness-knowledge:** Awareness-knowledge represents the knowledge of the innovation’s existence. This type of knowledge can motivate the individual to learn more about the innovation and, eventually, to adopt it. Also, it may encourage an individual to learn about other two types of knowledge.

**How-to-knowledge:** The other type of knowledge, how-to-knowledge, contains information about how to use an innovation correctly. Rogers (2003) saw this knowledge as an essential variable in the innovation-decision process. To increase the adoption chance of an innovation, an individual should have a sufficient level of how-to-knowledge prior to the trial of this innovation. Thus, this knowledge becomes more critical for relatively complex innovations.

**Principles-knowledge:** The last knowledge type is principles-knowledge. This knowledge includes the functioning principles describing how and why an innovation works. An innovation can be adopted without this knowledge, but the misuse of the innovation may cause its discontinuance.

To create new knowledge, technology education and practice should provide not only a “how-to” experience but also a “know-why” experience. According to him, an individual may have all the necessary knowledge, but this does not mean that the individual will adopt

the innovation because the individual's attitudes also shape the adoption or rejection of the innovation.

**The Persuasion Stage:** The persuasion step occurs when the individual has a negative or positive attitude toward the innovation, but the formation of favorable or unfavorable attitude toward an innovation does not always lead directly or indirectly to an adoption or rejection. The individual shapes his or her attitude after he or she knows about the innovation, so the persuasion stage follows the knowledge stage in the innovation-decision process. Furthermore, Rogers states that while the knowledge stage is more cognitive – (or knowing) centered, the persuasion stage is more affective (or feeling) centered. Thus, the individual is involved more sensitively with the innovation and the persuasion stage. The degree of uncertainty about the innovation's functioning and the social reinforcement from others (colleagues, peers, among others.) affect the individual's opinions and beliefs about the innovation. Close peers' subjective evaluations of the innovation that reduce uncertainty about the innovation outcomes are usually more credible to the individual. Individuals continue to search for innovation evaluation information and messages through the decision stage.

**The Decision Stage:** At the decision stage in the innovation-decision process, the individual chooses to adopt or reject the innovation. While adoption refers to full use of an innovation as the best course of action available, rejection means not to adopt an innovation. If an innovation has a partial trial basis, it is usually adopted more quickly, since most individuals first want to try the innovation in their own situation and then come to an adoption decision. The vicarious trial can speed up the innovation-decision process.

However, rejection is possible in every stage of the innovation-decision process. Rogers expressed two types of rejection: active rejection and passive rejection. In an active rejection situation, an individual tries an innovation and think about adopting it, but later he

or she decides not to adopt it. A discontinuance decision, which is to reject an innovation after adopting it earlier, may be considered as an active type of rejection. In a passive rejection (or non-adoption) position, the individual does not think about adopting the innovation at all. Rogers (2003) stated that these two types of rejection have not been distinguished and studied enough in past diffusion research. In some cases, the order of the knowledge-persuasion-decision stages can be knowledge-decision-persuasion. Especially in collectivistic cultures such as those in Eastern countries, this order takes place and group influence on adoption of an innovation can transform the personal innovation decision into a collective innovation decision. In any case, however, the implementation stage follows the decision stage.

**The Implementation Stage:** At the implementation stage, an innovation is put into practice. However an innovation brings the newness in which some degree of uncertainty is involved in diffusion. Uncertainty about the outcomes of the innovation still can be a problem at this stage. Thus the implementer may need technical assistance from change agents and others to reduce the degree of uncertainty about the consequences. Moreover, the innovation-decision process will end: since the innovation loses its distinctive quality as the separate identity of the new idea disappears. Reinvention usually happens at the implementation stage, so it is an important part of this stage. Reinvention is the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation.

Also, he explained the difference between invention and innovation. While invention is the process by which a new idea is discovered or created, the adoption of an innovation is the process of using an existing idea. Rogers (2003) further stated that the more reinvention takes place, the more rapidly an innovation is adopted and becomes institutionalized. As innovations, computers are the tools that consist of many possible opportunities and applications, so computer technologies are more open to reinvention.

**The Confirmation Stage:** The innovation-decision already has been made, but at the confirmation stage the individual looks for support for his or her decision. Rogers (2003) stated that this decision can be reversed if the individual is exposed to conflicting messages but the innovation. However, the individual tends to stay away from these messages and seeks supportive messages that confirm his or her decision. Thus, attitudes become more crucial at the confirmation stage. Depending on the support for adoption of the innovation and the attitude of the individual, later adoption or discontinuance happens during this stage. Discontinuance may occur during this stage in two ways.

First, the individual rejects the innovation to adopt a better innovation replacing it. This type of discontinuance decision is called replacement discontinuance. The other type of discontinuance decision is disenchantment discontinuance. In the latter, the individual rejects the innovation because he or she is not satisfied with its performance. Another reason for this type of discontinuance decision may be that the innovation does not meet the needs of the individual.

This theory is related to this study in the sense that the study focused on adoption and diffusion of technology. The theory can be seen as being most appropriate for investigating the adoption of technology in higher educational environment. The theory saw adoption as a decision to fully utilize innovation and rejection as a decision not to adopt innovation. The four elements of this theory were critically looked into Rogers (2003). These Elements explained how technology can be used to teach students and pass across messages. It is clearly deduced, “Influence of Communication and Information Technology Competencies on The Teaching of Office Technology and Management Courses in Polytechnics” is closely related with the theory.

## **Conceptual Framework**

### **Concept of Information and Communication Technology**

Information and Communication Technology (ICT) is becoming more pronounced worldwide. It has become such that rarely is anything mentioned in any area of human endeavour without reference to this type of technology. ICT cuts across all sectors, and it is becoming the driving force for effective and efficient operations of trade and commerce, government, medicine, education, human resources development, arts and culture, agriculture, national security and other areas of human endeavors. Information and communication technology could be said to encompass all those gadgets that deal with the processing of information for better and effective communication. ICT covers Internet service provision, telecommunications equipment and services, Information Technology equipment and services, media and broadcasting, libraries and documentation centers, commercial information providers, network-based information services, and other related information and communication activities.

In the last few decades, ICT has increasingly played a critical role in all fields of human endeavors it is readily useful in the areas of agriculture, engineering, education, medicine, law, architecture, aviation, commerce, insurance, banking and finance as well as maritime activities. Information and Communication Technology (ICT) involves the use of computers, internet and other telecommunication technology in every aspect of human endeavor. Yusuf (2015) affirmed that ICT is computer based tools and techniques for gathering and using information. It encompasses the hardware and software, the network and several other devices (video, audio, photographic camera, among others) that can convert information, images, and sound into common digital form. It includes electronic information in processing technologies such as computer and internet, as well as fixed-line

telecommunication networks. It is an electric application of computing, communication, telecommunication and satellite technology.

Ejide (2016) stated that Information and Communication Technology is a set of tools that helps one work with information and to perform tasks related to information processing. Onumara (2017) stated that ICT is concerned with the aspect of managing and processing information through the use of electronics, computers, and computer software to convert, store, protect, process, transmit and retrieve information. ICT is also defined as computer based tools used by people to work with information and communication processing needs of an individual or an organization. It encompasses the computer, its hardware and software, the network and several other devices that converts information (text), images, sounds, and motion and so on into common forms (Akude and Ebeniza, 2012).

Information and Communication Technology refers to the handling and processing of information for use by means of electronic and communication gadgets such as computers, overhead projectors, videos, it also encompasses the computer hardware and software, the network and the several other devices (video, audio, photography camera among others.) that convert information (text), images, sound, motion, and so on into common digital form (Jimoh, 2017).

Boritz, (2010) stated that ICT as the emergence of tools of microelectronic and telecommunications that are used in the stated that ICT is the handling and processing of information (texts, images, graphs, Instruction among others} for us by means of electronic and communication devices such as computers cameras, telephone. Information and communication technology is daily giving rise to new concepts, new ideas and making impact not only in the industries automatic acquisition. Analysis, storage, retrieval, manipulation, control, movement, display, transmission, reception, and interchange of quantitative and qualitative data).

Akude and Ebeniza (2012) stated that ICT is the process of gathering, accessing and dissemination of data for an enhanced learning. Similarly, Ofodu (2017) also described ICT as an electronic or computerized devices, assisted by human and interactive materials that can be use for a wide range of teaching and learning as well as for personal use. From these definitions, ICT could therefore be seen as processing and sharing of information using all kinds of electronic device, an umbrella that includes all technologies for the manipulation and communication of information.

Today's world is a world of information explosion. This information explosion is taking place in such a fast speed that even a literate person is feeling as if he or she is illiterate being unable be to cope up with such an information explosion. It is Information Technology (IT) that can help in coping with the information explosion. Information Technology is all about coping up with explosion of Information. Information Technology (IT) is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a micro-electronics based combination of computing and telecommunication. The term in its modern sense first appeared in a 1958 article published in the Harvard Business Review, it was commented that the new technology does not yet have a single established name but shall be tentatively called information technology. It spans a wide variety of areas that include but are not limited to things such as processes, computer software, computer hardware, programming, languages and data constructs (yusuf, 2015).

Information Technology consists of two words Information and Technology. The term Information refers to any communication or representation of knowledge such as facts, data or opinion in any medium or form, including textual, numerical, graphic cartographic, narrative or audiovisual forms. It occupies a strategic role in the scheme of human existence; through communication of information, development is facilitated (Amoor, 2010).

Agomou (2015) reiterated that information is facts, instructions and processed data that have been organized in any medium or form such organized facts or data which is meaningful to the end users or recipients. It can also be seen as data which has been processed, while technology according to Galbraith (2010) is the systematic application of a scientific or other organized knowledge to practical tasks. It can also be seen as the equipment, machine and devices used in the application of knowledge to practical tasks. Technology is the practical form of scientific knowledge or the science of application of knowledge to practical.

Information Technology has been defined by many authors in different ways; according to Long (2013) Information Technology is a faculty or force that is totally permeating concrete and abstract reality and creating a new conception, new forms of interpretation, new ways of management and new insight into our life styles. Robson (2017) described Information and Communication Technology as the phase that covers all the machineries or skill concerned with the capturing, storage, transmittal or presentation of information. Olive and Chapman (2013) affirmed that IT is technology which supports activities involving the creation, storage, manipulation and communication of information together with their related method, management, and application.

Osuagwe (2013) described Information Technology as the convergence of microelectronics, telecommunications computers, and storage facilities and he further stated that Information Technology is beyond hardware and software. He rather considered it as a process of acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information. Osuwa (2012) said that Information Technology is the application of scientific study of the art of using skills in making things, the mastery and utilization of manufacturing and industrial methods. Information Technology is a scientific, technological and engineering discipline and management technique used in handing information, its

application and association with social, economical and cultural matters (UNESCO, 2013). In a nutshell, Information Technology is any equipment or interconnected system or sub system of equipment that is used in the acquisition, storage manipulation, management transmission or reception of data or information. It is anything that renders data, information or perceived knowledge in any visual format whatsoever, via any multimedia distribution mechanism, is considered part of the domains space known as Information Technology.

Communication is an integral part of human existence. Communication is a kind of social interaction where at least two interacting agent share set of signs and a common set of semiotic rules (Ochai, 2017). It is communication that decides the very identity of human beings, modern society is turning into an information society and communication is the exchange of information. The advent of technological advancements helped to foster effective information communication in education. Technology is the science of the application of knowledge to practical purposes. It is regarded as a major platform for society development. Blissmer (2013) described Technology as the practical application of knowledge, which refers to those activities directed to the satisfaction of human needs, which produce alterations in material work. Therefore, communication technology is the process of transferring information from a sender to a receiver with the use of a medium in which the communication information is understood by both sender and receiver. Communication Technology implies the knowledge, skills and understanding needed to exchange information verbally or non-verbal.

### **Concept of Teaching**

Teaching is a process in which learner, teacher, curriculum and other variables are organized in a systematic ways to attain some determined goals. Ayeni (2011) observed that teaching is a continuous process that involves bringing about desirable changes in students. Smith (2013) described teaching as a complex art of guiding students through a variety of

selected experiences towards the attainment of a widening field of learning. Adebayo (2014) said that teaching is number of ways, namely as communication, as praxis and as an art. He went further and said that teaching is a process of facilitating, guiding and generally moderating learner's behaviour through the provision of appropriate experiences so that he will achieve meaningful growth. In their own contributions, Bharadwaji and Pal (2011) stated that teaching is a deliberate and conscious effort in making a meaningful change in students' behaviors in order to be useful in the society.

Adebayo (2013) stated that teaching involves sharing of the meaning of the subject matter by teacher and learner. She stated further to argue that teaching process assumes that a person is consciously and deliberately doing the teaching, thus emphasizing that teaching activity can only be done by human beings when there is a relationship or an interaction between two or more persons. Komolafe (2012) reiterated that teaching is a purposeful and planned activity of a teacher in order to effectively communicate same to a learner with the hope of changing his orientation deliberately. Rabindra (2011) described teaching as passing information, making the students acquire some skills, changing the attitude, modifying the behaviour and giving some experiences of life to students. He stated further that a teacher can never truly teach unless he is still learning himself, a lamp cannot light another lamp unless it continues to burn its own flame. Teaching therefore, is a purposeful and planned activity which lecturers consciously communicate to students in order to modify and change their behaviour for better performance. Effective teaching and learning depends on the teaching methods and techniques employed by the teacher. Teachers require an effective and motivated teaching method which makes students want to learn more and be interested in learning. Teaching method is a style adopted by a lecturer or a teacher in order to impart knowledge that will bring about the desired change in student's behaviours' views about a problem.

## **Office Technology and Management**

The current Office Technology and Management curriculum as reviewed in 2004 by National Board for Technical Education, acting on behalf of Federal Republic of Nigeria lays much emphasis on computer and computer related courses. These courses are divided into (a) special area which includes Secretarial Studies, Techniques in Office Management and Control (b) Information and Communication Technology application which includes computer operation, web page design, desktop publishing, database management among others and (c) general education relating to contemporary problems usually called general studies. Thus, the general objectives of the programme therefore are: acquisition of secretarial skills, acquisition of general education and laying foundation for advanced studies.

Office Technology and Management is a work oriented programme which relates the functions of information system to organizational structure. It is a course of study where the students are exposed to the acquisition of vocational skills in office and management as well as enterprise (Iredia 2015). According to National Board for Technical Education (2004). Office Technology and Management programme was designed to equip students with secretarial/office skills for employment in various fields of endeavour. In addition to the acquisition of vocational skills, students are equipped with effective work competencies and socio-psychological work skills, which are essential in everyday interactions with others.

Igbinedion (2011) described Office Technology and Management programme as a specialized phase of vocational business education that prepares recipients for office occupations as office managers, secretaries, executive assistants administrative assistants, and function in other similar titles describing jobs similar or overlapping those of the traditional secretary such as office coordinator, executive assistant, office manager and administrative professional. The Office Technology and Management programme offered in the Universities and Colleges of Education, however, have the education components that give the graduates

the option to teach in secondary schools and Polytechnics or seek for employment in offices as office managers, executive assistants, personal secretaries, among others. it is a very viable career option for competent graduates. Those especially from the Universities can also function as administrative officers in the public and private sectors of the economy.

Sani (2017) stated that Office Technology and Management education involves the process of guiding and initiating the learners to acquire the necessary skills, facts, knowledge, habits and attitudes that will make them co-exist with others as useful and productive members of the society. Sani further affirmed that it is a programme of instruction designed to equip its recipients with knowledge and skills for gainful employment. The current OTM programme over led with courses in database management Microsoft excel, Microsoft power-point, word-processing, web page design, desktop publishing, business communication among others. the design of Office Technology and Management programme components appear to be a response to a global call and a new academic direction in favour of technology (Okoro, 2010).

Nwosu (2017) observed that Office Technology and Management education is to assist in the production of suitable secretarial manpower with requisite skills, knowledge and attitudes for effective participation in economy. Folorunso (2012), described OTM as an area of study within the composite of what is called business studies as offered in Universities, Polytechnics and Colleges of Education in Nigeria. Office Technology and Management course are aimed at producing personnel who, after successful training, can offer secretarial services with competence. Amoor (2010) also stated that OTM programme is a component of vocational education that provides knowledge and skills for would-be confidential secretaries to perform efficiently and effectively in the word of work. Office Technology and Management programme is offered in Nigeria at three levels of tertiary institutions namely

colleges of education, polytechnics, and universities and revolves around job skills employability and self-reliance.

Komolafe (2012) affirmed that OTM education is a process or context which has the role of preparing people for enterprises as employees, employers and or self-employed. It provides opportunities for specialization in company secretary-ship and technical secretary-ship. Okoji (2012) stated that Office Technology and Management is an educational programme, which gives its recipients the necessary knowledge and skills to enable him function effectively in an office. This is to say that Office Technology and Management programme refers to the acquisition and development of skills, competencies, attitudes and attributes to be able to function effectively in the office to meet with the new technological challenges which have revolutionary changes in the offices.

Adeyemi (2016) described Office Technology and Management as a programme provides adequate training for Nigerian citizens for the new world order of technological devices. Its graduates acquire and develop needed skills, attitudes and knowledge to meet with the new technological challenges which have revolutionary changes in the offices. They can operate with ease, dexterity, efficiency and effectiveness, the emerging technological devices which range from computer with scanning and coloured printers, to electric typewriters, e-mail, fax machines, franking machines, internet facilities, micrographic and reprographic machines, photocopiers, shredding machines, telephone with cellular and word processors.

Adebayo (2014) stated that the life and status of business education tomorrow as a discipline in the present technological age depends on how the business teacher of today is prepared to impart the knowledge and skills of ICT to the business education/studies graduates. Agoha (2011) stated that OTM lecturers today should be computer literate and teacher education program must deliberately expose teachers of all specialization

technological education teachers (OTM teachers inclusive) to ICT competencies relating courses like internet services and facilities, spreadsheet operating systems, among others.

Umara (2018) stated that Office Technology and Management programme is a vital tool in the hand of government to combat unemployment crises, while Adebayo (2014) stated that it is a tool to alleviate poverty. Office Technology and Management (OTM) education is also very useful to private organizations and individuals in terms of employability, job creation and self reliance. It permeates all facets of a country's socio-economic and political life. All organizations need good information management systems, good record keeping for effective competitiveness and profit making.

### **Lecturers' Teaching Competencies**

Competency is the knowledge, skills, ability and characteristics associated with high performance. Ojukwu and Ojukwu (2012) asserted that lecturer's teaching competence mean the knowledge, skill and behaviour that enable a lecturer to meet and establish performance criteria. Akiri and Usborusbo (2010) posited that lecturer's teaching competence is a multi-dimension concept that measures numerous interrelated aspect of sharing knowledge with students which communication skills, subject matter expertise, lecture attendance, teaching skills and lecturer' attitude. Students' academic performance can be measured using different methodologies. According to Folorunsho (2012) students' academic achievement is the summation of academic gains of students at the end of semester. Al-Mutairi (2011) stated that competency. Al-Mutairi (2011) stated that competency is the knowledge, skill, ability and attitude to carry out an assigned duty well. Commission for Information Communication Technology (2011) stated that competence is the knowledge, skills, ability or characteristics associated with high performance on a job and it can help to distinguish high performance from average and low performance.

Mulder Weigel and Collins (2016) described competence as the ability to perform the tasks and roles required to the expected standards; mastering of socially expected standards; the capacity of a person to act; knowledge, abilities and qualities in action; capability to use knowledge in practice; capability of a person to reach specific achievements. In this respect competence is seen as being holistic and it comprises not only content or subject knowledge and ability, but also core and generic abilities. Mulder, Weigel and Collins (2016) further said that when it comes to vocational education and training, capability and eligibility are both relevant since the purpose of education is to make student capable of performing certain tasks incumbent of a given occupation or profession.

Competencies can then be said to mark a level of acceptance or satisfied excellence of teaching/learning process in the educational sectors. Ejifor and Aniagohi (2014) affirmed that “the competencies of people determine the products and services they render as no organization can rise above the quality of its staff”. It is therefore imperative that all products and services should possess a high quality in order to appease the would-be customers (Learners), stand the test of time and also produce the expected results. Lecturers in schools who are at the center of learning are equally expected to possess the desirable personal and professional qualities that will enable them perform well and achieve the aims and objectives of education as spelt out in the National Policy on Education (Okoro, 2010).

Competencies include all aspects of performance. It is a complex combination of attributes (knowledge, attitudes, values and skills) and the tasks that must be performed in determined situations (Usioboh, 2012). Agomou (2015) said competences are those abilities of power and authority of knowledge, attitudes and facts necessary for accomplishing tasks. It is also believed that the more experienced a lecturer is the more productive he will be in his teaching and the more likely his students will perform more brilliantly academically in school examinations than those students taught by inexperienced ones. Aigbohese (2010) said that

“the success of any educational Institution depends solely upon the quality of lecturers employed to run the instructional programme. It is also of importance to note that their functions dictate the size, rules, policies and the general organization of their institutions. No wonder the Federal Government decided that teachers’ education be given a major emphasis in all educational planning because “no education system can rise above the competence of its teachers” (Federal Republic of Nigeria, 2013).

Darling-Hammond and Hudson (2016) stressed the above statement further that when they stated that “one way to measure the efficiency of lecturers is to look at their certification, teaching experience, academic responsibility and attitudes towards teaching”. Teaching effectiveness is determined by the lecturer’s overall performance.. The Nigerian Philosophy of Education and the National Educational goals implicitly aim at the production of quality graduates (Federal Republic of Nigeria, 2013). The attainment of these goals can only be realized if competent lecturers are engaged to manage our educational system.

Obayan (2012) reiterated that like the case in any other area of human activity, a lecturer should have both natural and acquired characteristics to be able to perform satisfactorily. Natural qualities are traits which the lecturer is born with, while acquired characteristics are, in addition to natural traits, those that come through training. A lecturer needs to develop his human and intellectual abilities which will make him/her a better lecturer, such as personality qualities, physical energy, perseverance, responsibility, initiative, self-control, decisiveness, humour, sincerity, loyalty, leadership and academic qualities. Academic ability includes intelligence, subject-matter knowledge of teaching and learning, teaching experience and certification status and vigour to carry out research (Farooq and Shafiq, 2011)

Madumere (2010) stated that since education consumes a lot of money, it is imperative that those who manage the schools should be accountable and the quality of the

products of education is part of that accountability. Teaching is an art in that lecturers, like painters, composers, actresses and dancers, make judgment based largely on qualities that unfold during the course of action. Competences are used to select, control and organize classroom qualities such as tempo, tone, pace, discussion and forward movement. The lecturer must 'read' the emerging qualities and respond with competences appropriate to the ends sought or the direction he or she wishes the students to take. In the process, qualitative judgment is exercised in the interest of achieving a high standard at the end. Competence actually is a fairly complicated concept and involves different attributes. These attributes, according to Usioboh (2012), are knowledge, skill, attitude, tasks, ethics and values.

The following assertion was made by Usioboh (2012) that a lecturer is expected to have the following qualities for effective teaching delivery: Initiative, patience, sympathy, respect, flexibility, honesty, foresight, intellectual curiosity and keenness. These are the qualities that a lecturer required for the classroom performance in order to produce the well integrated individual capable of playing significant roles in the school system. Teaching competence refers to "the right way of conveying units of knowledge, application and skills to students". The right way here includes knowledge of the contents, processes, methods and means of conveying contents and attitudes. Any definition of teaching competence depends on teaching in a particular setting, the culture, and values held in the community. It also depends on innumerable teacher and student characteristics and the classroom context (Schacter and Thum, 2017).

Adediwura and Tayo (2017) observed that different elements of teaching competencies include lecturer's subject knowledge, teaching skills, lecturer's attitude to students and class attendance. The teaching skills of lecturer can be measured based on the lecturer's abilities around comprehension and transformation of knowledge concepts to be imparted to the students. Teaching requires the lecturer to first understand the specific

outcomes of the topic as well as the subject matter structure of the respective discipline. According to Sulman (2011), teaching skills enable the lecturer to assist students gain literacy develop skills and values to function effectively in the society, equip them with the opportunity to have and discover new information that will enhance understanding of new concepts.

In his observational theory, Bandura (2011) said that behaviours are acquired by watching another (the model displays it and the learner observes and tries to imitate it). Teachers are, invariably, role models whose behaviours are easily copied by their students. What teachers like or dislike, appreciate and how they feel about their learning or studies could have a significant effect on their students. Unfortunately, however, many teachers seldom realize that the way they teach, behave and interact with students can be more paramount than what they teach. In a nutshell, teacher's attitudes directly affect students' attitudes. Lecturers' attitudes are in turn influenced by their culture and belief system. Teachers' attitudes towards their students must be favourable enough to carry students along. When the learners exhibit the expected behaviour or response, the value attached determines very significantly the effectiveness of the learning processes in any aspect of education.

The effectiveness or ineffectiveness of teaching is closely linked to teaching competence. Competent teacher would also create classroom conditions and climate, which are conducive for students learning. Teaching competence has various dimensions such as knowledge of the subject, instructional planning, teaching skills, student motivation, presentation and communication skills, evaluation competencies and classroom management skills. While the lecturer/teacher would require all these dimensions to a reasonable extent, it is in the manifestation of these in an integrated manner that makes him effective in the classroom context (Komoya, 2018).

There are three dimensions under which a lecturer's knowledge of subject matter can be measured: namely content knowledge, pedagogical of content and general knowledge (Eggen and Kauchak, (2018). This implies that the lecturer cannot teach what he or she does not know. Adu and Olatunbosun (2017) affirmed that there exist high correlation between what lecturer's subject knowledge is and what he teaches students. Attitude as a concept is concerned with an individual way of thinking, acting and behaving. It has very serious implication for the learner, the teacher, the immediate social group with which the individual learner relates and the entire school system. Attitudes are formed as a result of some kinds of learning experiences. They may also be learned simply by following the example or opinion of parent, teacher or friend. This is imitation, which also has a part to play in the teaching and learning situation. In this respect, the learner draws from his teachers' disposition to form his own attitudes, which may likely affect his learning outcomes positively or negatively.

Many research evidences have indicated that the disposition of teachers towards teaching couple with the subject matter has a marked influence both on student attitude and their academic performance. It does follow that teachers with positive disposition are always hardworking, committed and dedicated to their jobs, often ready to make extra effort to realize his aims and objectives within the classroom. But teachers with negative attitudes behave contrarily. Teachers' attitude towards the teaching of Office Technology and Management courses plays a significant role in shaping the attitude of students towards developing interest in the programme. Isineyi (2011) said that students' positive attitude towards Office Technology and Management programme can be enhanced by the following teacher related factors:

Teachers' thorough knowledge of the profession

Teachers' enthusiasm;

Teachers' ability to expose to the students the opportunities ahead of them.

Teachers' resourcefulness and helpful behaviour;

Research in education policy sees attitude as a consistent tendency by the lecturer to react in a particular way; often positively or negatively toward a situation. Buttressing this statement, Fazo and Rosks (2016) affirmed that attitude possesses both cognitive and emotional components which strongly influence the way a lecturer thinks and react to specific situation. Furthermore, Eggen and Kauchak (2018) stated that positive lecturers' attitudes are fundamental to effective teaching and students' academic performance.

From the above, it is clear that the role of the teacher as the facilitator of learning and his contributions to students' academic achievement is enormous. Ajah (2011) said that the success of Office Technology and Management programme depends greatly on the classroom lecturer as is the one that translates all thoughts into action. The nations' overall development is inextricably tied to its educational system. If we accept this view, then there is need to introduce quality into the system. It is the teacher's knowledge, skills, ability, resourcefulness and ingenuity to efficiently utilize the appropriate language, methodology and available instructional materials to bring out the best in learners in terms of academic achievement.

Manlove and Elliott (2010) conducted a research on lecturers 'class attendance and student' academic achievement. Further analysis from the research work discovered a correlation between lecturers' class attendance and students' academic achievement. Jebba (2010) conducted a research involving certain class revealed that lecturers who have the highest level of absenteeism recorded the lowest scores of students' academic achievements. Consistent with this finding, the results from research conducted by Pitkoff (2015) stated that lecturers who received low performance rankings missed a large number of days than those who did not. The result provides an impetus for educational administrators to develop lecturers' development plans early in the academic year for low performing lecturers

### **Basic Computer Operation Competencies for Teaching of OTM Courses**

Computer technology has opened wide opportunities for teachers to integrate computers in teaching-learning process. Computers greatly facilitates teaching-learning process for various curricular subjects especially language, mathematics and science. Computer technology is also being increasingly applied in non-instructional (record keeping, grade averaging, communication, among others.) and pre-instructional (developing materials, researching instructional content, among others.) uses. Various educationists have interrelated computer use with constructivist, collaborative, and inquiry-based learning and also, with pedagogical change.

Studies carried out around the world in various industrialized as well as information-based countries have affirmed on time and again that computer technology on its own shall never be able to substitute teachers and teachers shall always remain the principal actors who would facilitate harnessing the true potential of computer technology in education. Hence, it is important for teachers to become computer literate, and be prepared to use information technology in schools. Being prepared to adopt and use technology and knowing how that technology can support student learning must become integral skills in every teacher's professional repertoire. Various initiatives, mandates, recommendations put-forth by different government organizations, policies, have definitely served as catalysts to motivate school teachers in this direction. Various developing countries are currently following in the footsteps of the developed countries in promoting the use of technology in education. In India, in association with the global e-Schools and communities initiative (GeSCI) (Ofodu,2017).

Ofodu (2017) further stressed that the Ministry of Human Resource Development (MHRD) has formulated India's National Policy on Information and Communication Technology (ICT) in School Education in order to devise, catalyze, support, and sustain ICT

activities and processes to improve access, quality and efficiency of ICT tools and resources to all students and teachers. It promotes networking, research, evaluation and experimentation in ICT tools and practices to utilize the potentials of ICT in school education. Moreover under Public Private Partnership model in education, various technology firms such as. Intel India, Microsoft partners in Learning. Oracle Education Foundation are partnering with governments, educators, and local content and curriculum providers to create sustainable educational programs to train teachers and prepare students to succeed in the global economy.

Several initiatives and significant effort in various developing countries, interrogation of computer technology in education still has a long way to go despite the growing support for computers as tools for teaching and learning, it has often being observed that there is a general unwillingness among teachers and schools to promote use of computers across the curriculum. Computer technology availability should not be mistaken for technology adoption and use (Agbamu, 2015). As described by Alkadi (2014), “regardless of the amount of technology and its sophistication, technology will not be used unless faculty members have the skills, knowledge and attitudes necessary to infuse it into the curriculum”. A large part of this problem is the result of not having the knowledge of or expertise with computer-based instruction.

Bandura (2011) stated in his study that teachers’ computer competence predicted their positive attitudes toward technology in education. However, other researchers have stated that although teachers may have positive attitudes toward technology (Eggen & Kauchak, 2018) they may still not consider themselves qualified to teach with it or comfortable using it. A number of studies have shown that teacher’s lack of confidence is one of the major obstacles in implementation of computers in teaching-learning process (Fazo and Reskes, 2016).

It is reasonable to hypothesize that integration of computer technology in education requires much more than mere computer-related skills. In his submission, Long (2013) criticized the concentration on technical competency and suggested that teachers should focus on learning and instructional-design theories as well as integrating computers into the curriculum. Teachers should be able to confidently use and evaluate a range of software packages and understand how the use of information technology changes the pedagogy (Manlove and Elliot, 2016). A study conducted by Medlin (2011) stated that teachers wanted to be competent in using computers in instruction as they could see positive changes in teaching strategies as a result of using this technology.

The OTM Lecturers play prominent role in preparing students, hence they are expected to demonstrate professional qualities which implies that, according to Omeje (2016) they should not only have knowledge and competencies in using ICT facilities but should effectively inculcate them in their students. There are many stakeholders involved in ensuring effective integration of ICT in the educational system, lecturers have particular important role to play.

Gwang-jo (2010) affirmed that teachers are the key to whether technology is used appropriately and effectively or not. Appropriate use of ICT can catalyze the paradigmatic shift from teacher-centred pedagogy to a more effective learner-centered pedagogy. Tertiary institution should prepare teachers on how to use ICT as well as inculcate the skills and expertise required in using ICT to teach a curriculum that prepares students for the 21<sup>st</sup> century work place. There is no doubt that the status of OTM as a discipline in the present technological age depends on how the lecturers are prepared to impart the knowledge skills of ICT to the students. Office Technology and Management lecturer should be able to demonstrate his/her ability to perform college level basic computing work. Office Technology and Management education in Nigeria has been evolving and developing with

the advancement in office work and technology. As a response, many tertiary institutions in Nigeria have changed the nomenclature from Secretarial Education/Studies to Office Technology and Management (Boritz, 2010).

Igbinedion (2011) affirmed that Secretarial Education which gave birth to Office Technology and Management started in the United States of America in the 17<sup>th</sup> and 18<sup>th</sup> centuries, and expanded rapidly to some developed countries and developing countries by the 19<sup>th</sup> and 20<sup>th</sup> centuries. Igbinedion also stated that OTM education is a specialized phase of vocational education that prepares students to enter teaching and office occupations as capable and intelligent members of the work force. The use of secretarial services permeates all facets of a country's socio-economic and political life ranging from schools hospitals, corporate settings legal, medical offices among others. Amoor (2010) also stated that OTM/secretarial education came to limelight in the last decades of the 19<sup>th</sup> century when some Nigerians in business partnerships with overseas exporters had to learn simple commercial subjects for the purpose of facilitating business transactions. The stages of development of OTM is taken from the manual typewriting stage, electric typewriting stage, electronic typewriting stage to word processing stage which ushered in information and communication technology era.

### **Networking Competencies for Teaching of OTM Courses**

The world is becoming a global village and the internet is the integrating force. Educators are beginning to gain insight in how internet/networking can enhance learning. The opportunity provided by the internet is of great importance to technical education. However to gain the most out of the potentials of the internet in enhancing the learning process, technical teachers need to be competent in handling the internet. One greatest contribution of the new information and communication technology is the ability to create a global environment that is drawing the people of the world closer and closer together. The new ICT

has gone a long way in reducing/removing distance, cost and time which have limited human transactions in the past. It is now possible to transact /communicate with someone billions of miles away in seconds. The internet is the integrating force, which has melded the technology of communication and computing to provide instant connectivity and global information services to all its users at a very low cost (Yusuf, 2015).

Akude and Ebeniza (2012) stated that the Internet is revolutionizing our society, economy and technological systems. According to them, no one knows for certain how far or in what direction the Internet will evolve, but no one should underestimate its importance. The Internet was the result of some visionary thinking by people in the early 1960s, which saw great potential value in allowing computer to share information on research and development in scientific and military fields. The Internet is a global network of networks connecting millions of computers or computer networks and computer users. The Internet provides up-to-date information on a variety of classroom related topics unavailable from other sources. The content of textbook, library and teacher knowledge is enhanced by this new medium.

Researchers are only beginning to gain insight into the strength and weaknesses of the Internet in the classroom. However, there is emerging evidence that the Internet provides a variety of valuable aids to education that is; it is a relatively new resource for educators. To participate fully and gain the benefits offered by the Internet and networking, there is the need to acquire new sets of skills – digital literacy.

Allexander (2013) stated that digital literacy is “process awareness, attitude and ability of constructive social action to appropriately use digital tools and facility to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expression and communicate with others in the context of specific life situations. Alkadi (2014) stated ICT literacy as using digital technology, communication

tools and or networks to access, manage, integrate, evaluate and create information in order to function in a knowledge society. With the mass of information available online, the ability to access, select and administer relevant data is considered a key competence. Digital literacy, meaning the constructive and critical application of ICT is the key to successful participation in the information society. Proficiency in ICT also serves as a catalyst for literacy, numeracy, and many subject based competencies. Familiarity with the etiquette of text messaging, electronic mail and chat rooms is a social competence for any cyberspace user. Gaps in online access and in adequate ICT competences in part of the population could have serious repercussions for social cohesion by creating a digital divide into the information-rich and information-poor. However, engaging in online activities entails sharing information with friends and strangers all over the world. Information transferred over the network has a high security risk.

A computer security risk as stated by Adeyemi (2016) is any action that could cause loss of information to software, data, processing incompatibility or damage to computer hardware. To have positive Internet experience, it is important to develop protective behaviours to safeguard oneself, friends, family and properties while dealing with others online. When using the internet, it is important, according to Agoha (2011) to: Know how to protect computer from viruses and spyware Be aware of privacy issues related to networking and understanding safety and security risks in participating online. These changes are important to technical education program in supporting workforce development.

Aigbohese (2010) stated that the Internet promotes different style of teaching, teachers and students have to find new ways of working together in order to ensure that technical education remains valuable to the educational system, its programs must continue to be enriched to prepare students for the workforce and society. To use technologies effectively and efficiently, teachers need visions of technologies' potentials, opportunities to apply them

and time of experiment. Only then can teachers be informed and confident in their use of new technologies.

Amoor (2010) stated that there is need to brace up to the new challenges and systems of education through proper management and use of ICT in skill oriented subjects. This should be a forward-looking resolution to create qualitative opportunities for acquiring employable skills, new technical competencies and problem-solving skills through a refocused technical education system. Therefore tertiary technical teachers should stay abreast of changing technologies and current opportunities. Tertiary technical teachers are those teaching technical courses in colleges of education, polytechnics and vocational technical education departments in the universities. They must continue to value ICT and seek ways to connect programs and instructional management with appropriate ICT. Teachers' ICT competency is essential if the teachers are to be successful instructional leaders as they use and transfer this competency to their students.

In integrating ICT to education, the teachers have as part of their responsibility to ensure safety of all participants-students, teachers, and the school; as well as the safety of the ICT hardware and software. This demands a good knowledge of security risks and ethics in ICT usage. Technical teachers need to be clearly informed about what and what not to do and where to go for help. They need to know why they do what they do and limit of their responsibility. Teachers need networking safety competencies to guard against inappropriate use of the technology both on their part, students' part, school and technology hardware and software. With these skills, teachers can prevent students from using public networking sites when they are in the classroom by monitoring and allowing use of specific sites (Pikoff, 2015).

Ejide (2015) stressed that rapid advancement in ICT has made it possible for people in different parts of the world to communicate face to face through satellite, video conferencing

as well as transmit faxes embodying complex designs and drawings via regular telephone line. Lecturers have to be prepared to confront the challenges of the emerging technologies in order to fit into the industrial and information society of this global era. The rapid advancement in technology and new innovations have created various business needs, wants, challenges and has opened new opportunities like e-business, e-communication, e-purchasing, e-marketing, e-finance, e-learning and e-service. All these make use of electronic devices to conduct businesses on-line. These opportunities pose enormous challenge to OTM lecturers and the entire society. There is an urgent need to ensure that students and different categories of workers acquire the right skills for the 21<sup>st</sup> century.

There is no doubt that a comparative advantage of any nation is a function of the capacity of her population to embrace new technologies and incorporate them into the production process. This comparative advantage increases with the ability of the populace to efficiently utilize the new technologies. ICT competencies are essential for driving these on-line practices. OTM lecturers must acquire them in order to deliver the new methods of communication in their teaching programmes. For instance, the acquisition of power point user's skills will enable them use presentations in their instructional delivery. The study is motivated by the fact that there has been excitement of the introduction of ICT for the training of OTM students, the situation on ground and qualities of OTM graduates does not seem to support the enthusiasm. Observation in many tertiary institutions where OTM is taught, the complementary ICT gadgets seem to be in short supply and these manifest on the quality of student graduates in OTM in our tertiary institutions.

### **Media Competencies for Teaching of OTM Courses**

Multimedia are those ICT facilities that combine basic types of media into learning environment e.g. video, sound, graphic and animation, thus providing a powerful teaching and learning environment. Multimedia document encourage deep reflective thinking and

empower student to create and design rather than absorbing representations created. Example of multimedia facilities are video conferencing interactive whiteboard, DVD, slide, multimedia projector among others. Multimedia projector is designed to project video signal and computer video to a screen. Such projector is a complex electronic device, however it is quite easy to control. With multimedia projector, the students no longer have to crowd around a computer monitor to view representation, website or training programmes. It directly engages students and makes impact to each lecture. Popular reference material, encyclopedia, textbook, projects work can be recorded in DVD and used for teaching and learning. Information such as seminars, conference, project defense, new OTM textbooks and journals can be placed on the electronic notice board (Uche, 2010).

Stuart (2011) stated that the new trends in teaching and learning include varying the type of content-images, sounds and next work together to build memory in the brain and result in better retention of the material, creating interaction that engages the attention, providing immediate feedback because each step of learning builds upon the previous steps, encouraging interaction with other e-learners through chat rooms, discussion boards, e-mail among others. Tella, Toyobo, Adika and Adeyinka, (2010) explained the importance of ICT to include, heightening of motivation, helping recall of previous learning, providing new instructional stimuli, activating the learners' response, providing systematic and steady feedback, facilitating appropriate practice, sequencing learning appropriately, and providing a viable source of information for enhanced learning.

Teachers who use ICT for instruction are able to kindle in the learners a desirable attitude towards information technology tools in their entire way of life. Media as a tool in enhancing effective teaching and learning in office technology and management education, users of media can connect to each other without regulation of national boundaries, culture or religion within field and across industries. This platform is very vital to education sector for

purpose of effective teaching and learning. The emergency of multi-media has forced educator to think about the way learning occurs. The development and expansion of media has been a dominant trend in teaching and has attracted much scholarly attention in recent discourse (Okoro, 2010).

Media is a great avenue for educational institutions to interact with their students and potential ones. It presents a platform that involves the use of digital media, based on the concept of sharing and discussing information among online which may include Facebook, Twitter, Google, You tube among others. all of which are internet based applications that build on the ideological and technological foundation that allows the creation and exchange of user generated content. Nowadays, individuals can enter a social media site and share links, add comments and make other activities that the platform provides. It help in connecting students, they can share links, answer questions from their lecturers and even post their questions and comments to fellow students. The growing popularity of media use for educational purpose has become an international phenomenon (Ejide,2014).

### **Telecommunication Competencies for Teaching of OTM Courses**

Ighinedion (2011) affirmed that office technology and management lecturers should be competent to teach students all forms of communication sent and received through the electronic means. Messages sent and received through the electronic means can be achieved either with the use of SMS or E-mail. SMS (Short Message Service): is a communication service that allows sending short text messages (up to 160 characters for a page) over the mobile phones. E-mail: is referred to as electronic mail. The e-mail provides its services through the internet which offers real time communication at a very low cost and has the ability to transfer files. E-mail involves transfer of textual messages through which documents from any program can be sent. Graphical illustrations and pictorial materials can

equally be forwarded through the e-mail with the aid of attachment. Such documents can be scanned and sent as attachment to the recipient. Telecommunication facilities includes:-

**Radio and Television:** These are audio and audio visual technology widely used in education as educational tools. Radio and television as instructional technology is aimed at improving the quality of classroom teaching.

**Faxmile (fax) Transmission:** It involves machines designed to transmit graphical information via normal telephone lines after a special fax number is dialed and the phone connection established documents are fed through the machines which takes approximately one to six minutes to scan and convert the information into electrical impulse. The impulse are carried across phone line and receiving machines changes the impulse back to text or graphics, making a copy of facsimile of the document in the sending machine fax communication has become a popular alternative to express mail because it is faster and generally less expensive.

**Mobile Phone:** It is one of the most prized possessions among users today mobile phones can be used by lecturer for class assignment through text messages. Mobile phone is being used in imparting information fast and very effective. It provides e-mail facility also.

**Teleconferencing:** It can also aid educational activities through telephone. Teleconferencing refers to interactive electronic communication among people located at two or more different places. It's also refers to telephone calls where more than two people can discuss at the same time.

**Telex:** It is a switched network of tele-prints similar to a telephone network, for purpose of sending text based messages. Teacher can group OTM students to perform certain educational activities during holidays. The group can discuss and carry out the assignment through teleconferencing. Teacher can teach students with the help of teleconferencing, when

he/she is not disposed to enter the classroom, radio and television can aid in the teaching of shorthand and aid illustration of concept in the office practice.

Communication skills and modern office change is the only thing that is vital in life and office technology and management profession is facing new technological changes since the office environment has turned into e-office, so it is vital for office managers to have the necessary skills that will make them relevant in the world of work and contribute their quota to the development of the country. They can only do this by acquiring the necessary skills needed for today's e-office before graduation (Amoor, 2010).

### **Review of Related Empirical Studies**

Studies on Information and Communication Technology have received major focus by scholars. Researchers that have contributed to the aspect of ICT include among others; the following:

Alexander (2013) carried out a research on lecturers' competencies and student' academic performance among higher education and training students in Regenesys Business School, South Africa. The objective of the research was to analyze the effects of lecturers' competencies on students' academic performance. A sample of 115 students was selected and used for the study using simple random sampling procedure. A structured questionnaire was used to gather data on students' level of agreement on the extent to which distinct variables measuring lecturers' competencies determine their academic performance.

The data collected with the survey instrument was processed and analyzed using SPSS statistical package. The results indicated that subject knowledge, teaching skills, lecturer's attendance and lecturer's attitude have significant positive influence on academic performance of students. Alexander study is relevant to this current study because both of them investigated the lecturer's competencies, however the previous study and current study

differed in term location, purposes and research questions. The previous study failed to show how 115 sample was selected.

Vajargah, Jahaniand and Azadmanesh (2010) investigated application of ICTs in teaching and learning at University level: the case of ShahidBeheshti University Tehran, Iran. The objective was on the facilitators and the risks of using these technologies in teaching and learning in higher education. The Research population consisted of the three major groups: University academics, curriculum planners and ICT's professionals. The population of University professors was 578. A sample was selected using stratified sampling technique 231. Due to the smallness of the sizes of other sections of population (23 for curriculum planners and 18 for ICT's professionals) all of them were requested to participate in the study bringing the sample total to 272.

The researchers employed a survey research method using a questionnaire and designed in 4 sections with 40 items in likert scale system. Validity of the instruments was reviewed by employing a specialist dominated focus group with participation of 10 experts and the questionnaire was revised based on the session results. The questionnaire's reliability was calculated through two methods: Alpha coefficient (0.90) and Split-half (0.91) and the results confirmed the instrument reliability.

The findings revealed several challenges pertaining to ICT application in Iran such as lack of National Policy for using ICT in Higher Education, Lack of adequate investments, cultural obstacles, financial challenges, lack of continuity in ICT use, and lack of systematic training and development programs. In view of these the researchers recommended that the institution should provide training programs aimed at keeping Lecturers informed on new developments in ICT, improving faculty members' belief on effectiveness of ICT.

The research conducted by Vajargah,Jahaniand and Azadmanesh is related to present study because both studies are concerned with ICT application in teaching and learning.

However, study conducted by Vajargah, Jahani and Azadmanesh differed from the present study because the study was conducted in Iran and the objective was on the facilitators and risk of using ICT in teaching and learning while the present study was conducted in Nigeria on the influence of ICT on the teaching of OTM courses in Polytechnic. The previous study adopted Alpha coefficient and split half for reliability instrument while the present study adopted Cronbach Alpha Coefficient.

Ubulom, Onuekwa, and Amaehule, (2011), carried out a study titled: Analysis of Information and Communication Technology Accessibility and Utilization in Teaching Business Studies in Secondary Schools in Andoni Local Government Area of River State, Nigeria. The study's main objective was to investigate information and Communication Technology (ICT) accessibility and utilization in teaching of business studies in secondary schools. These researchers adopted the descriptive survey design. Sixty- six business studies teachers drawn from 30 secondary schools were used. From the above population, 40 were males while 26 were females. A 20 item questionnaire titled Information and Communication Technology Facilities Accessibility Questionnaire (ICTFAQ) and Information and Communication Technology Facilities Utilization Questionnaire (ICTFUQ) were designed for data collection for the study. Respondents were asked to rate each of the items on 4 point scale.

A split-half method was used with a pilot group of 10 business studies teachers from neighboring communities in Ogoni to derive the reliability coefficient of 0.86 using the Spearman Brown formula. The data gathered from the study were analyzed using the mean ( $\bar{x}$ ) and standard deviation as statistical tools. The mean of 2.5 was regarded as "Reject" while a mean response on or above 2.5 were regarded as "Accept" for research questions, while the null hypotheses were tested at 0.05 level of significance such that any calculated t-test value of 1.96 or above at 0.005 level of significance ( $P > 0.05$ ) were regarded as

“significant”. The findings revealed that ICT facilities were not available, and accessible by teachers in secondary school in Andoni. It was also revealed that business studies teachers in schools do not also have the skills of utilizing ICT for teaching of the subjects.

The study conducted by Ubulom, Onuekwa, and Amaehule, is similar to the present study because both studies sought to investigate the influence of ICT on the teaching and learning. However, Ubulom, Onuekwa, and Amaehule, study differed in term of location, variables and the method of conducting pilot study.

In the South- East of Nigeria, Akude and Ebeniza (2012) investigated a study on Application of information and Communication Technology in Teaching and Learning in State Owned Colleges of Education. The purpose of the study was to examine the level of application of ICT in teaching and learning. Four specific objectives and four research questions were formulated to guide in the achievement of the purpose of the study. The research design adopted for the study was the descriptive survey. The researchers employed the use of questionnaire to gather information from the sampled population. The reliability index of the questionnaire was calculated using the Pearson Product Moment Correlation Coefficient and it gave 0.71. There are four (4) State owned Colleges of Education in the South East of Nigeria having a total of six hundred and forty one (641) Lecturers.

However, the researchers purposively sampled 50% of the Lecturers. Thus, a sample of 321 Lecturers was arrived at and used. Data were collected using a questionnaire of a four point modified Likert type scale. The reliability of the instrument was ascertained by using ten teachers from another College of education to carry out a test – re-test exercise, and a reliability coefficient of 0.71 was established using Pearson Product Moment Correlation Coefficient Statistics. Data were analyzed using the mean and standard deviation statistical tools. Generally, the study revealed that the extent of Lecturer’s utilization of the ICT

facilities was very low as a result of poor electricity power supply, insufficient ICT facilities and lack of basic computer operational skills.

The researchers recommended that Lecturers at all levels should try to improve on their capacity and ICT competencies, through training and workshops participation and that the government and college authorities should provide sufficient ICT facilities to enable lecturers and students use them in teaching and learning. The study conducted by Akude and Ebeniza, is related to present study because both examined the application of ICT in teaching and learning. They are however differed in term of respondents, location and the sampling.

Similarly, Adegbemile (2012) carried out a research on Information and Communication Technology (ICT) Availability and Utilization in Management of secondary Schools in Kaduna State, Nigeria. The purpose of the study was to investigate the availability and utilization of ICT facilities in the management of secondary schools. The study adopted the descriptive survey design. The population of this study comprised of all secondary schools in Kaduna State. 50 secondary schools were selected by stratified random sampling from all the 118 Senior Secondary Schools located in the state. The principals in the 50 schools were the sample used for this study. A 20 item questionnaire titled Information and Communication Technology Facilities Availability and Utilization Questionnaire (ICTFUAQ) was designed for data collection for the study. Respondents were asked to rate each of the items on a 4 point scale.

To ensure the reliability of the instruments, a test-re-test technique was employed. A pilot study was carried out by administering the ICTFUAQ instrument at intervals of two weeks on 10 non participating Secondary School Principals in Sabon – Gari Local Government Area of the State. The reliability index was calculated using the person product moment correlation. A correlation co-efficient index of 0.98 was obtained. The mean of 2.5 was regarded as “Reject” while a mean response on or above 2.5 were regarded as “Accept”.

The independent t – test was used to test hypothesis 1 and 2. The two null hypotheses were tested at 0.05 level of significant. The study revealed that the available ICT facilities in the State were not adequate in schools and their utilization was a matter of concern.

The study further revealed that the views of both the Male and Female Principals on ICT facilities availability and utilization in the management of secondary schools did not differ. It was recommended that Government should as matter of urgency sponsor the training of principals on the utilization of ICT facilities in Educational Management and The Federal and State Ministries of Education should ensure the provision of electricity in every school. The researcher recommended based on the results and findings of the study that government should also sponsor the re-training of principals on the utilization of ICT in Education Management, and that school principals should involve the parent-teacher associations in the provision of ICT facilities in schools.

The study investigated by Adegbemile, is relevant to this present study because both studies was conducted on ICT. However they differed in term of variables because previous study was talking about utilization of ICT in Managing school in Kaduna State while the present study is on influence of ICT competencies in teaching of OTM courses in Polytechnic in North Central Nigeria.

Inibehe (2012) carried out a researcher on ICT Resource Utilization, Availability sand Accessibility by Teacher Educators for Instructional Development in College of Education Kastina-Ala. The study investigated the utilization of ICT in the instructional mix by teacher educators in College of Education (COE) Kastina-Ala, Benue state, Nigeria. A total of forty COE Kastina-Ala teacher educators from 5 schools randomly selected, formed the sample size from a population of 287. The study adopted the Ex post Facto design based on the fact that the variables had already occurred. The population of the study comprised all 287 teacher

educators (academic staff) in COE Kastina-Ala, Benue State. Forty (40) teacher educators out of the 287 were sampled for the study using the random sampling technique.

The instrument designed and used for data collection was the Teacher Educators' Information and Communication Technology Resource Utilization Questionnaire (TEICTRUQ). Its reliability was ascertained in a test run in a private COE not used in the main study using Cronbach Alpha that yielded 0.71 co-efficient, proving that the questionnaire was reliable. Furthermore, the Yes/No response category were adopted for the instrument in collecting data while frequencies and percentages were used in analyzing data. A score of less than 50% meant that the item was of no effect while a score of 50% and above meant that the item had significant effect.

The findings revealed that ICT resources were not available and for that reason, teacher educators could not access them for instructional development purposes. Based on these, it was recommended that the college authority should avail teacher educators in the institution with ICT resources and sponsor them on training and retraining programmes to produce ICT complaint students. While this researcher used a single institution, and a yes or no response questionnaire, the current researcher considered 6 institutions and a four-point-scale questionnaire.

The study conducted by Inibehe is relevant to the present study because both studied ICT in teaching and learning. However the previous study differed in term of variables because the previous study investigated utilization, availability and accessibility of ICT by teacher educators in colleges of education in Katina Ala while the present study was on influence of ICT competencies on the teaching of OTM courses in Polytechnic in North Centre Nigeria. The study also differed in term of sampling, the previous use forty teacher educators out of 287 population while the present study considered all the population.

### **Appraisal of Review of Related Literature**

The review of literature explored diffusion of innovations theory as the theoretical foundation upon which this study is built. The relevance of this theory to the current study was also examined. The review went on to consider the concept of competence which mean the ability, skills and knowledge to perform a specific task very well. It involves the accurate application of both the conceptual and practical measure to effectively carry out a task. The 2004 curriculum of Office Technology and Management programme was critically referred with particular attention given to the ICT courses with a view to sift out the specific ICT competencies required to effectively impart on students. This study revealed that Information and Communication Technology are evolving technologies hence required that Office Technology and Management lecturers need to continuously upgrade their skills and keep abreast of the latest development and best practice.

From the discussion on review of related literature, the place of information and communication technology in Office Technology and Management curriculum is crucial. This is a pointer to the fact that the extent to which the objectives of the programme can be achieved is dependent on how competent the lecturers are in the required areas of competencies. Yet the level of teaching competencies of polytechnic Office Technology and Management lecturers regarding Information and Communication Technology courses is unknown.

Six related empirical studies were extensively reviewed. Based on the revised empirical studies the researcher observed that the previous studies centered on subject knowledge, challenges of ICT, availability, utilization and accessibility of ICT in teaching and learning of OTM courses. None of the studies focused on influence of ICT on the teaching of OTM courses in Polytechnics in North Central Nigeria and none of the studies combined the variables (basic computer operation competencies, networking competencies,

media competencies and telecommunication competencies) to the best knowledge of the researcher. This constituted the gap which the current study bridged.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This chapter presented the different methods that were adopted to collect and analyze the data for this study under the following sub-headings:

Research Design, Population of the study, Sample and Sampling Technique, Instrument for Data Collection, Validity of the Instrument, Pilot study, Reliability of the Instrument, Procedure for Data Collection and Procedure for Data Analysis.

#### **Research Design**

The descriptive survey research design was used in this study. This research design is a reliable tool for educational research because it is one of the least expensive methods of carrying out research. It allows the researcher to examine many variables. It also helped the researcher to detect what people think and what they do; it can be used for both small and large sample population. Mamman (2011) stated that descriptive research design is suitable for the collection of large amount of data from a sizeable population in an economical way, based often on questionnaire, those data are standard, allowing easy comparison. This design is easily understood. Descriptive research design therefore gives a remarkable accurate picture of a phenomenon.

#### **Population of the Study**

The population of this study consists of 106 male and female lecturers of the Department of Office Technology and Management in the accredited polytechnics within the North-Central in Nigeria.

**Table I: Population of the study**

<b>North-Central Nigeria</b>	<b>Names of Institutions</b>	<b>No. of Lecturers</b>
Benue	Benue State Polytechnic,	08
Kogi	Federal Polytechnic, Idah	12
	Kogi State Polytechnic, Lokoja	13
Kwara	Federal Polytechnic, Offa	11
	Kwara State Polytechnic, Ilorin	09
Nasarawa	Federal Polytechnic, Nasarawa	10
	Nasarawa State Polytechnic, Lafia	09
Niger	Federal Polytechnic, Bida	13
	Niger State Polytechnic, Zungeru	09
Plateau	Plateau State Polytechnic, Barikin-Ladi	12
<b>Total</b>		<b>106</b>

**Sources:** (1) *JAMB Brochure (2013), Polytechnics offering Office Technology and Management.*

(2) *Figures from Head of Departments of Office Technology and Management of the various State and Federal Polytechnics (2020).*

### **Sample and Sampling Technique**

The entire population was used as sample since they were few in number. This is also in line with the recommendation by Ademiluyi and Okwuanaso (2011) who stated that it is ideal to study the entire population wherever it is not more than 250. Based on the size of the population, there was no sampling procedure.

### **Instrument for Data Collection**

The main instrument for data collection was a four-point scale structured questionnaire developed by the researcher titled: Influence of Information and

Communication Technology Competencies on the Teaching of Office Technology and Management in Polytechnics (IICCTOTM). The questionnaire items were generated based on the literature reviewed and it is divided into two parts; 1 – 2.

Part 1 of the instrument sought personal information of the respondents. Part 2 contains 48 items divided into four sections; (A - D). Section A covers research question one and consists of 16 items which were used to determine the level of lecturers' basic computer operation competencies for teaching of OTM courses. Section B contains information on research question two and consists of 9 items which were used to determine lecturers' networking competencies for teaching of OTM courses. Section C deals with informations on research question three and consists of 8 items which were used to determine lecturers' media competencies for teaching of OTM courses. Section D covers research question four and consists of 11 items which were used to determine lecturers' telecommunication competencies for teaching of OTM courses in Polytechnics in North Central Nigeria. Items in sections A - D were placed on a four-point rating scale of Very High Extent (VHE) High Extent (HE) Low Extent (LE) and Very Low Extent (VLE). The items were scored as follows: VHL = 4, HE = 3, LE = 2 and VLE = 1. This is in line with the recommendation of Agbamu (2015), who stated that this will enable the respondents to indicate the degree of their opinion on a given statement.

### **Validity of the Instrument**

The instrument on the influence of information and communication competencies on the teaching of office technology and management courses in polytechnics was face and content-validated by researcher's supervisors and two other experts in the Business and Entrepreneurship Department, Kwara State University, Malete. The experts were presented with the instrument containing the purpose of the study, research questions and hypotheses.

During the validation exercise, the experts were asked to scrutinize the instrument in term of suitability, relevance and clarity of language. Fifty-six (56) items were presented but reduced to forty-eight (48) items. After the validation, the instrument was amended to reflect the experts' suggestions and contributions. The suggestions and corrections were incorporated into final draft of the instrument.

### **Pilot Study**

A pilot study was conducted at Federal Polytechnic Ede. Twenty (20) copies of the questionnaire were administered to Business Educators in the Department of Office Technology and Management. Data generated from the pilot study were used to determine the reliability of the instrument. The reason for choosing Federal Polytechnic Ede was because the institution is outside the North Central Nigeria but share the same characteristics with the study area. The pilot study was conducted to determine whether the questionnaire would be understood by the respondents.

### **Reliability of the Instrument**

The reliability of the instrument was determined by the statistical analysis of the data collected from the pilot study. The reliability was calculated using cronbach alpha and reliability co-efficient of 0.88 was gotten for the instrument. This reliability co-efficient was adjudged reliable based on Uche (2010) who stated that when an instrument has a reliability coefficient of between 0.65 to 1, the instrument was considered reliable. Therefore the instrument for which it is calculated should be adjudged reliable and stable.

### **Procedure for Data Collection**

The researcher obtained an approved letter of introduction from the Department of Business and Entrepreneurship Education, Kwara State University, Malate to the various polytechnics under study. Data collection was carried out by the researcher and two trained research assistants. This was done by visiting the entire Polytechnics offering Office

Technology and Management to administer copies of the research questionnaire. One research assistant covered Plateau, Nasarawa and Niger State, while the second research assistant handled those of Kogi and Benue State while the Kwara State Polytechnic was handled by the researcher herself. Research assistants visited each of the institutions on a rotational basis to distribute the copies of the questionnaire and to collect the questionnaire after completion. One hundred and six copies (106) of the questionnaire that were distributed representing 100% to the lecturers in the ten (10) Polytechnics situated within the North Central Nigeria were retrieved.

### **Method of Data Analysis**

The bio-data of respondents were analyzed using percentages, and the data to answer the research questions were analyzed using mean scores. Null hypotheses of four were tested using independent t-tested at 0.05 level of significance.

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#### **Decision Rule**

Items with a mean rate of less than or equal to 1.49 was classified as “Very Low Influenced” items with mean value from 1.50 to 2.49 was classified as having “Low Extent”. items with average value between 2.5 and 3.49 was classified as having been influenced to a “High Extent” whereas items with a mean value of 3.50 and above was classified as having been influenced to a “Very High Extent”. According to Baba (2012), The principle for testing hypotheses was considered null hypotheses when the level of significance observed is higher than the level of fixed Alpha (0.05) and if not, the null hypotheses was rejected.

## CHAPTER FOUR

### PRESENTATION AND ANALYSIS OF DATA

This study was conducted to determine the influence of Information and Communication Technology competencies on the Teaching of Office Technology and Management courses in Polytechnics. This chapter deals with the presentation and analysis of the research data and discussion of findings. The analyses were carried out under the following sub-headings:

Analysis of demographic data

Analyses of data to answer the Research Questions

Hypotheses Testing

Summary of Findings

Discussion of Findings

#### **Analysis of Demographic Data**

The demographic variable for the study were analyzed in Tables 2 and 3 as follows:

**Table 2: Percentage Distribution of Respondents by Gender**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Male	61	57.5
Female	45	42.5
<b>Total</b>	<b>106</b>	<b>100.0</b>

**Source:** *Field survey, 2021*

Analysis of data in Table 2 shows the percentage distribution of respondents based on gender. The Table reveals that there are 61 respondents representing 57.5% male lecturers and 45 respondents representing 42.5% female lecturers who responded to the questionnaire. This implied that male lecturers are more in number than female lecturers in Polytechnics.

**Table 3: Percentage Distribution of Respondents by Institution Category**

<b>Category</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Federal Polytechnics	46	43.4
State Polytechnics	60	56.6
<b>Total</b>	<b>106</b>	<b>100.0</b>

**Source:** *Field survey, 2021*

Analysis of data in Table 3 shows the percentage distribution of respondents based on institution category. The Table reveals that 46 respondents representing 43.4% are from Federal Polytechnics and 60 respondents representing 56.6% are from state polytechnics. This means that OTM lecturers in State Polytechnics are more in number than OTM lecturers in Federal Polytechnics.

### **Analyses of Data to Answer the Research Questions**

Analysis of data to answer the research questions were analysed and presented in Table 4 to 7 as follows:

**Research Question 1:** To what extent do basic computer operation competencies influence the teaching of OTM courses in Polytechnics?

**Table 4: Mean of responses on the extent computer operation competencies influence the teaching of OTM courses in Polytechnics**

S/N	Item Statements	$\bar{X}$	Remark
1.	Ability to connect all hardware components of the computer system.	3.44	High Extent
2.	Ability to boot up and shutdown computer system.	2.64	High Extent
3.	Ability to effectively utilize the input device for word processing.	3.43	High Extent
4.	Ability to edit and format document effectively.	2.89	High Extent
5.	Ability to utilize secondary storage device eg. Flash Drive and CD.	3.52	Very High Extent
6.	Ability to create work sheet with Micro software.	2.55	High Extent
7.	Ability to create present materials using Microsoft Power point.	3.17	High Extent
8.	Ability to utilize Corel draw for different drawings.	3.46	High Extent
9.	Ability to utilize desktop publishing.	3.37	High Extent
10.	Ability to utilize database management system.	3.08	High Extent
11.	Ability to manipulate projector.	3.08	High Extent
12.	Ability to use scanner correctly.	3.12	High Extent
13.	Ability to manage files in the computer.	3.06	High Extent
14.	Ability to use different types of computer both black and white colour printer.	3.15	High Extent
15	Ability to maintain security of data.	3.58	Very High Extent
16	Ability to use and install Anti-Virus software.	3.29	High Extent
<b>Weighted average</b>		<b>3.18</b>	<b>High Extent</b>

**Source:** *Field Survey, 2021*

Analysis of data in Table 4 shows mean responses on the extent computer operation competencies influence the teaching of OTM courses in Polytechnics. The table revealed that the respondents indicated that ability to connect all hardware component of the computer system, ability to boot up and shutdown computer system and effectively utilize the input device for word processing as well as ability to edit and format document effectively

influence the teaching of OTM courses to high extent (mean = 3.44, 2.64, 3.43 and 2.89 respectively). The respondents also indicated that ability to utilize secondary storage device among others. Flash Drive and CD influence the teaching of OTM courses to very high extent (mean = 3.52). In addition, the respondents indicated that ability to create work sheet with Micro software, create present materials using Microsoft Power point, utilize Corel draw for different drawings and utilize desktop publishing as well as ability to utilize database management system influence the teaching of OTM courses to high extent (mean = 2.55, 3.17, 3.46, 3.37 and 3.08 respectively). The respondents also indicated that ability to manipulate projector, use scanner correctly, manage files in the computer and use different types of computer both black and colour printer influence the teaching of OTM courses to high extent (mean = 3.08 and 3.12, 3.06 and 3.15). In addition, the respondents indicated that ability to maintain security of data influence the teaching of OTM courses to a very high extent (mean = 3.58). The respondents also indicated that ability to use and install Anti-Virus software influence the teaching of OTM courses to high extent (mean = 3.29).

Table 4 reveals that the respondents indicated high extent for all the constructs because the mean are far above the fixed mean of 2.50. The table shows a ground calculated weighted average of 3.18. This implied that computer operation competencies influence the teaching of OTM courses in polytechnics to high extent (mean = 3.18).

**Research Question 2:** To what extent do networking competencies influence the teaching of OTM courses in Polytechnics?

**Table 5: Mean of responses on the extent networking competencies influence the teaching of OTM courses in Polytechnics**

S/N	Item Statements	$\bar{X}$	Remark
1.	Ability to use Internet for E-Mail and Browsing.	3.31	High Extent
2.	Ability to use Internet to update File Transfer Protocol (FTP) using newsgroup and chat for E-commerce (exchange of information between customer and vendor).	3.29	High Extent
3.	Ability to save web page to a location on a drive.	2.74	High Extent
4.	Ability to use the internet for data collection and information exchange.	3.37	High Extent
5.	Ability to use the internet for E-banking.	3.47	High Extent
6.	Ability to use the internet with students online.	3.73	Very High Extent
7.	Ability to apply internet Explorer in creating a new file folder and printing.	3.80	Very High Extent
8.	Ability to use website browser and internet search engine for surfing.	3.75	Very High Extent
9.	Ability to format web page.	3.75	Very High Extent
<b>Weighted average</b>		<b>3.47</b>	<b>High Extent</b>

**Source:** *Field Survey, 2021*

Analysis of data in Table 5 shows mean responses on the extent networking competencies influence the teaching of OTM courses in Polytechnics. The table revealed that the respondents indicated that ability to use internet for e-mail and browsing, update File Transfer Protocol (FTP) using newsgroup and chat for e-commerce (exchange of information between customer and vendor) as well as ability to save web page to a location on a drive influence the teaching of OTM courses to high extent (mean = 3.31, 3.29 and 2.74 respectively). The respondents also indicated that ability to use the internet for data collection and information exchange, use the internet for e-banking and ability to use the internet with

students online influence the teaching of OTM courses to high extent (mean = 3.37, 3.47 and 3.73). In addition, the respondents indicated that ability to apply internet explorer in creating a new file folder and printing, use website browser and internet search engine for surfing and format web page influence the teaching of OTM courses to a very high extent (mean = 3.80, 3.75 and 3.75 respectively).

Table 5 reveals that the respondents indicated high extent for all the constructs because the mean are far above the fixed mean of 2.50. The table shows a ground calculated weighted average of 3.47. This implied that networking competencies influence the teaching of OTM courses in Polytechnics to high extent (mean = 3.47).

**Research Question 3:** To what extent do media competencies influence the teaching of OTM courses in Polytechnics?

**Table 6: Mean of responses on the extent media competencies influence the teaching of OTM courses in Polytechnics**

S/N	Item Statements	$\bar{X}$	Remark
1.	Ability to effectively use distance learning desktop video conference and teleconferencing technology.	3.81	Very High Extent
2.	Ability to produce based products such as newsletters, brochures and poster.	3.78	Very High Extent
3.	Ability to produce electronics slide and overheads for electronic teaching.	3.38	High Extent
4.	Ability to use paintings and drawings to produce images.	3.39	High Extent
5.	Ability to produce print fliers.	3.25	High Extent
6.	Ability to edit and produce a video text.	3.49	High Extent
7.	Ability to demonstrate mastery of media communication resources.	3.45	High Extent
8.	Ability to use a video Tape Recorder.	3.37	High Extent
9.	Ability to use close circuit, TV via cable Satellite.	3.22	High Extent
10.	Ability to effectively manipulate a fax machine.	3.24	High Extent
11.	Ability to browse and download information from net.	3.60	Very High Extent
	<b>Weighted average</b>	<b>3.45</b>	<b>High Extent</b>

Source: *Field Survey, 2021*

Analysis of data in Table 6 shows mean responses on the extent media competencies influence the teaching of OTM courses in polytechnics. The table revealed that the respondents indicated that ability to effectively use distance learning desktop video conference and teleconferencing technology, produce based products such as newsletters, brochures and poster and produce electronics slide and overheads for electronic teaching influence the teaching of OTM courses to a very high extent (mean = 3.81, 3.78 and 3.38 respectively). The respondents also indicated that ability to use paintings and drawings to produce images, produce print fliers, edit and produce a video text as well as ability to demonstrate mastery of media communication resources influence the teaching of OTM courses to high extent (mean = 3.39, 3.25, 3.49 and 3.45 respectively). In addition, the respondents indicated that ability to use a video Tape Recorder, use close circuit, TV via cable Satellite, effectively manipulate a fax machine and ability to browse and download information from net influence the teaching of OTM courses to high extent (mean = 3.37, 3.22, 3.24 and 3.60 respectively).

Table 6 reveals that the respondents indicated high extent for all the constructs because the mean scores are far above the fixed mean of 2.50. The table shows a ground calculated weighted average of 3.45. This implied that media competencies influence the teaching of OTM courses in Polytechnics to high extent (mean = 3.45).

**Research Question 4:** To what extent do telecommunication competencies influence the teaching of OTM courses in Polytechnics?

**Table 7: Mean of responses on the extent telecommunication competencies influence the teaching of OTM courses in Polytechnics**

S/N	Item Statements	$\bar{X}$	Remark
1.	Ability to use telex facilities in sending or receiving correspondences.	3.19	High Extent
2.	Ability to teach the use of machine for massages.	3.18	High Extent
3.	Ability to install and configure telecommunication software.	3.31	High Extent
4.	Ability to practice correct communication ethics and etiquette according to guidelines and laws.	2.71	High Extent
5.	Ability to work collaboratively and cooperatively in a technology Setting.	3.00	High Extent
6.	Ability to demonstrate knowledge and skills in the effective operation of mobile cellular.	3.05	High Extent
7.	Ability to operate video conferencing equipment during net meeting.	3.11	High Extent
8.	Ability to use electronic organizer technology for information storage.	2.94	High Extent
<b>Weighted average</b>		<b>3.06</b>	<b>High Extent</b>

*Source: Field Survey, 2021*

Analysis of data in Table 7 shows mean responses on the extent telecommunication competencies influence the teaching of OTM courses in Polytechnics. The table revealed that the respondents indicated that ability to use telex facilities in sending or receiving correspondences, ability to teach the use of machine for massages and ability to install and configure telecommunication software influence the teaching of OTM courses to high extent (mean = 3.19, 3.18 and 3.31 respectively). The respondents also indicated that ability to practice correct communication ethics and etiquette according to guidelines and laws, work collaboratively and cooperatively in a technology setting and ability to demonstrate knowledge and skills in the effective operation of mobile cellular influence the teaching of OTM courses to high extent (mean = 2.71, 3.00, and 3.05 respectively). In addition, the respondents indicated that ability to operate video conferencing equipment during net meeting and ability to use electronic organizer technology for information storage influence the teaching of OTM courses to high extent (mean = 3.11, and 2.94 respectively).

Table 7 reveals that the respondents indicated high extent for all the constructs because the mean scores are far above the fixed mean of 2.50. The table shows a ground calculated weighted average of 3.06. This implied that telecommunication competencies influence the teaching of OTM courses in Polytechnics to high extent (mean = 3.06).

### Test of Hypotheses

The four null hypotheses of the study were tested using independent sample t-test. The null hypotheses were tested at 0.05 level of significance. The summary of the test of hypotheses are presented in Tables 8 to 11 as follows:

H<sub>01</sub>: There is no significant difference in the mean rating of male and female respondents on the extent to which basic computer operation competencies influence the teaching of OTM courses in Polytechnics.

**Table 8: Summary of t-test of the difference between the mean rating of male and female respondents on the extent to which basic computer operation competencies influence the teaching of OTM courses**

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Male	61	3.19	0.28	0.442	104	0.659	H <sub>01</sub> Not Rejected
Female	45	3.16	0.26				

**Source:** *Field survey, 2021* P>0.05

The data in Table 8 reveals that there are 61 male OTM lecturers and 45 female OTM lecturers. The male and female OTM lecturers' responses showed that basic computer operation competencies influence the teaching of OTM courses in Polytechnics to high extent ( $\bar{X} = 3.19$ ; SD = 0.28) and ( $\bar{X} = 3.16$ ; SD = 0.26). Their responses are close to the mean as the standard deviations are very low. The Table reveals that there was no significant difference in the mean rating of male and female respondents on the extent to which basic computer operation competencies influence the teaching of OTM courses in Polytechnics ( $t_{104} = 0.442$ ,  $P > 0.05$ ). Therefore, the null hypothesis was not rejected. This implied that male and female OTM lecturers did not differ in their responses regarding the extent which

basic computer operation competencies influence the teaching of OTM courses in Polytechnics.

H<sub>02</sub>: There is no significant difference in the mean rating of male and female respondents on the extent to which networking competencies influence the teaching of OTM courses in polytechnics.

**Table 9: Summary of t-test of the difference between the mean rating of male and female respondents on the extent to which networking competencies influence the teaching of OTM courses**

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Male	61	3.48	0.21	0.567	104	0.572	H <sub>01</sub> Not Rejected
Female	45	3.45	0.19				

Source: *Field survey, 2021*

P>0.05

The data in Table 9 reveals that there are 61 male OTM lecturers and 45 female OTM lecturers. The male and female OTM lecturers' responses showed that networking competencies influence the teaching of OTM courses in polytechnics to high extent ( $\bar{X} = 3.48$ ; SD = 0.21) and ( $\bar{X} = 3.45$ ; SD = 0.19). Their responses are close to the mean as the standard deviations are very low. The Table reveals that there was no significant difference in the mean rating of male and female respondents on the extent to which networking competencies influence the teaching of OTM courses in polytechnics ( $t_{104} = 0.567$ , P>0.05). Therefore, the null hypothesis was not rejected. This implied that male and female OTM lecturers did not differ in their responses regarding the extent which networking competencies influence the teaching of OTM courses in polytechnics.

H<sub>03</sub>: There is no significant difference in the mean rating of male and female respondents on the extent to which media competencies influence the teaching of OTM courses in Polytechnics.

**Table 10: Summary of t-test of the difference between the mean rating of male and female respondents on the extent to which media competencies influence the teaching of OTM courses**

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Male	61	3.46	0.17	0.441	104	0.660	H <sub>01</sub> Not Rejected
Female	45	3.44	0.17				

Source: *Field survey, 2021*

P>0.05

The data in Table 10 reveals that there are 61 male OTM lecturers and 45 female OTM lecturers. The male and female OTM lecturers' responses showed that media competencies influence the teaching of OTM courses in polytechnics to high extent ( $\bar{X} = 3.46$ ; SD = 0.17) and ( $\bar{X} = 3.44$ ; SD = 0.17). Their responses are close to the mean as the standard deviations are very low. The Table reveals that there was no significant difference in the mean rating of male and female respondents on the extent to which media competencies influence the teaching of OTM courses in polytechnics ( $t_{104} = 0.441$ ,  $P > 0.05$ ). Therefore, the null hypothesis was not rejected. This implied that male and female OTM lecturers did not differ in their responses regarding the extent which media competencies influence the teaching of OTM courses in Polytechnics.

H<sub>04</sub>: There is no significant difference in the mean rating of male and female respondents on the extent to which telecommunication competencies influence the teaching of OTM courses in polytechnics.

**Table 11: Summary of t-test of the difference between the mean rating of male and female respondents on the extent to which telecommunication competencies influence the teaching of OTM courses**

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Male	61	2.96	0.27	0.904	104	0.368	H <sub>01</sub> Not Rejected
Female	45	2.91	0.30				

Source: *Field survey, 2021*

P>0.05

The data in Table 11 revealed that there are 61 male OTM lecturers and 45 female OTM lecturers. The male and female OTM lecturers' responses showed that

telecommunication competencies influence the teaching of OTM courses in polytechnics to high extent ( $\bar{X} = 2.96$ ;  $SD = 0.27$ ) and ( $\bar{X} = 2.91$ ;  $SD = 0.30$ ). Their responses are close to the mean as the standard deviations are very low. The table revealed that there was no significant difference in the mean rating of male and female respondents on the extent to which telecommunication competencies influence the teaching of OTM courses in polytechnics ( $t_{104} = 0.904$ ,  $P > 0.05$ ). Therefore, the null hypothesis was not rejected. This implied that male and female OTM lecturers did not differ in their responses regarding the extent which telecommunication competencies influence the teaching of OTM courses in polytechnics. The Alpha level that was set for decision rule was at 0.05 and the P-Value was at 0.65 which is higher than the alpha level then the hypotheses were retained.

### **Summary of Findings**

The following are the major findings of the study:

1. Computer operation competencies influence the teaching of OTM courses in polytechnics to high extent (mean = 3.18). However, there is no significant difference in the mean rating of male and female respondents on the extent to which basic computer operation competencies influence the teaching of OTM courses in polytechnics.
2. Networking competencies influence the teaching of OTM courses in Polytechnics to high extent (mean = 3.47). Therefore, there is no significant difference in the mean rating of male and female respondents on the extent to which networking competencies influence the teaching of OTM courses in polytechnics.
3. Media competencies influence the teaching of OTM courses in Polytechnics to high extent (mean = 3.45). Similarly, there is no significant difference in the mean rating of male and female respondents on the extent to which media competencies influence the teaching of OTM courses in polytechnics.

4. Telecommunication competencies influence the teaching of OTM courses in polytechnics to high extent (mean = 3.06). Also, there is no significant difference in the mean rating of male and female respondents on the extent to which telecommunication competencies influence the teaching of OTM courses in Polytechnics.

### **Discussion of Findings**

This study was conducted to examine the Influence of Information and Communication on the Teaching of Office Technology and Management Courses in polytechnics. The discussion is based on four research questions and four null hypotheses presented in Chapter One which are statistically analyzed in this chapter. The results of analysis on the research question one shows that basic computer operation influence the teaching of OTM courses in polytechnics to high extent. The findings collaborated that of Morrison and Wells (2012) who affirmed that for a lecturer to be able to handle the computer such lecturer must be able to identify the purpose of an operating system, identify different operating system, describe computer user interaction with multiple operating systems; identify system limitations and describe common problems relating to operating systems. Williams. Sawyer and Hutchinson (2015) corroborated with the view of Williams and Wells that computer operating system does the work of boosting, managing storage media, providing user interface, managing resources, files and tasks of the computer. Office Technology and Management lecturers need skills in the use of operating system to enable them interact with the computer and take advantage of the computer technology while taking into consideration the limitations the system has set to protect the data on the computer.

Hypothesis one in table 8 was tested to examine the mean rating of male and female respondents on the extent to which basic computer operation competencies influence the teaching of OTM courses in Polytechnics. The data in table 8 revealed that lecturer's

response showed that basic computer operation competencies influence the teaching of OTM courses to high extent ( $X = 3.19$ ;  $SD = 0.28$ ) and ( $X = 3.16$ ;  $SD = 0.26$ ). Their responses are close to the mean as the standard deviations are very low. The Table reveals that there was no significant difference in the mean rating of male and female respondents on the extent to which basic computer operation competencies influence the teaching of OTM courses in Polytechnics ( $t_{104} = 0.442$ ,  $P > 0.05$ ). Therefore, the null hypothesis was not rejected. This implied that male and female OTM lecturers did not differ in their responses regarding the extent to which basic computer operation competencies influence the teaching of OTM courses in polytechnics.

The result of analysis on research question two shows that networking competencies influence the teaching of OTM courses in polytechnics to high extent. The findings corroborate that of Darejan (2015) who reports that networking is quickly reshaping the ways we relate to one another, communicate, educate and collaborate. Adeshina, Udoh, Ndomi and Aliyu (2013) opined that networking is also modifying our modes of accessing information, deciphering, filtering and recompiling it for practical use through applications such as world wide web, file transfer services chat applications cloud computing, file sharing, web 2.0 technologies, electronic mailing list, collaborative service blogs, online survey tools webcasting podcasting, online portfolio, live streaming and video broadcasting. Office Technology and Management lecturers need to be competent in this skill for effective implementation of OTM curriculum.

Hypothesis two in table 9 was tested to examine the mean rating of male and female respondents on the extent to which networking competencies influence the teaching of OTM courses in polytechnics. The data in table 9 revealed that lecturers' responses showed that networking competencies influence the teaching of OTM courses to high extent ( $X = 3.46$   $SD = 0.19$ ) and ( $X = 3.48$ ;  $SD = 0.22$ ). Their responses are close to the mean as the standard

deviations are very low. The Table revealed that there was no significant difference in the mean rating of male and female respondents on the extent to which networking competencies influence the teaching of OTM courses in polytechnics ( $t_{104} = 0.567, P > 0.05$ ). Therefore, the null hypothesis was not rejected. This implied that male and female OTM lecturers did not differ in their responses regarding the extent which networking competencies influence the teaching of OTM courses in polytechnics.

The result of the analysis on the research question three shows that media competencies influence the teaching of OTM courses in polytechnics to high extent. The findings collaborated that of Ajala (2015) who opined that social media help in connecting students to share links, answer questions from their lecturers and as well post the comments to fellow students. Iyiola (2014) affirmed that lecturers should be competent to teach students and encourage them to create social media account for academic purpose only, like creating a group chat to share ideas and experience.

Hypothesis three in table ten was tested to examine the extent the mean rating of male and female respondents on the extent to which media competencies influence the teaching of OTM courses in polytechnics. The data revealed that lecturers' response shows that media competencies influence the teaching of OTM courses to high extent. ( $X = 3.46; SD = 0.17$ ) and ( $X = 3.44; SD = 0.17$ ). Their responses are close to the mean as the standard deviations are very low. The table revealed that there was no significant difference in the mean rating of male and female respondents on the extent to which media competencies influence the teaching of OTM courses in polytechnics ( $t_{104} = 0.441, P > 0.05$ ). Therefore, the null hypothesis was not rejected. This implied that male and female OTM lecturers did not differ in their responses regarding the extent to which media competencies influence the teaching of OTM courses in Polytechnics.

The result of the analysis on the research question four shows that telecommunication competencies influence the teaching of OTM courses in polytechnics to high extent. The findings collaborated with that of Yusuf (2019) who opined that telecommunication competencies is needed by OTM lecturers in order to teach students how to send messages through E- mail.

The hypothesis four in table 11 was tested to examine the extent the mean rating of male and female respondents on the extent to which telecommunication competencies influence the teaching of OTM courses in polytechnics. The data in table 11 revealed that lecturers' response shows that telecommunication competencies influence the teaching of OTM courses to high extent. ( $\bar{X} = 2.89$ ;  $SD = 0.32$ ) and ( $\bar{X} = 2.97$ ;  $SD = 0.25$ ). Their responses are close to the mean as the standard deviations are very low. The table revealed that there was no significant difference in the mean rating of male and female respondents on the extent to which telecommunication competencies influence the teaching of OTM courses in polytechnics ( $t_{104} = 0.904$ ,  $P > 0.05$ ). Therefore, the null hypothesis was not rejected. This implied that male and female OTM lecturers did not differ in their responses regarding the extent to which telecommunication competencies influence the teaching of OTM courses in polytechnics. The alpha level that was set for decision rule was at 0.05 level of significant and the P-Value was at 0.65 which is higher than the alpha level then the hypotheses were retained.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the study, conclusion of the study, recommendations of the study as well as suggestions for further studies.

#### **Summary**

This study was conducted to examine influence of Information and Communication Technology on the Teaching of Office Technology and Management Courses in Polytechnics. The study had four specific purposes, four research questions while four null hypotheses were tested. The researcher adopted descriptive research design. The population of the study was 106 lecturers of OTM Department in ten accredited polytechnic in North Central Nigeria. The population remains the sample size. The four point rating scale was employed in the questionnaire to show the extent of agreement and disagreement of the respondents to the items provided. The instrument was validated by two research experts including researcher's supervisors. Cronbach Alpha method was used to determine the internal consistency of the instrument. The data collected for the study were analyzed using mean to answer the research questions and standard deviation was used to determine the closeness or otherwise of the mean response, while T- test was used to test the null hypotheses at 0.05 level of significance.

Findings in this study revealed that Office Technology and Management lecturers in accredited polytechnics in North Central Nigeria have high extent rating in basic computer operation competencies, media competencies and telecommunication competencies to influence the teaching of Office Technology and Management courses. Therefore the null hypotheses that stated that there is no significant difference in the mean rating of male and female respondents on the extent to which basic computer operation competencies,

networking competencies, media competencies and telecommunication competencies influence the teaching of OTM courses were not rejected.

### **Conclusion**

Based on the findings of this study, it was concluded that influence of information and communication technology on the teaching of office technology and management courses in polytechnics is at a high extent. The study has shown that OTM lecturers in accredited polytechnics in North Central Nigeria are highly desired and also like to achieve effective teaching. The indication of high extent in their competencies level will assist them in teaching students to meet the taste of world of work. The findings of the study and the conceptual frame work have clearly shown that the success of an academic endeavour is largely determined by the relationship between the inputs and the corresponding outputs. Inputs in this regard refer to the competencies of the lecturers to impart the necessary skills to the students which will result in the corresponding acquisition of skills needed for the world of work.

The study revealed that the difference in mean responses of male and female respondents was not significant. This shows that male and female lecturers in OTM department in polytechnics in North Central Nigeria are preparing students for skills acquisition upon graduation. It is therefore concluded that lecturers in Office Technology and Management Department in Polytechnics in North Central Nigeria have high extent ratings in basic computer operation, networking competencies, media competencies, and telecommunication competencies to adequately impart ICT courses to students.

## **Recommendations**

Based on the findings of the study and conclusion which were drawn, the following recommendations were made:

1. Office Technology and Management lecturers should be trained and re-trained to acquire more computer competencies needed in areas of management information system, desktop publishing, webpage among others.
2. OTM programme should be streamlined by National Board for Technical Education (NBTE) with a view to incorporating the relevant networking competencies that will meet the need of OTM programme as well as the demand of knowledge economy.
3. The National Board for Technical Education (NBTE) should take into account new methods and equipment used in the media world for teaching such as the online interactive software for assessment.
4. The National Board for Technical Education (NBTE) should ensure that OTM curriculum is regularly reviewed, revised and adjusted with the inputs from the academia and industry to reflect the identified new telecommunication competencies. This is in view of the fact that competencies keep changing.

## **Suggestions for Further Studies**

The researcher suggests the following area for further studies:

1. Integration of New Technologies in Teaching and Learning of Office Technology and Management courses in Nigeria Polytechnics.
2. Competencies in the use of Information and Communication Technology among Office Technology and Management Students in Tertiary Institutions in North Central Nigeria.

## REFERENCES

- Adebayo, O. A. (2013). Effective Utilization of Equipment and Machines as a Means of Improving Teaching. *Journal of contemporary issues in education*, 1 (1), 144-155.
- Adebayo, T. O. (2014). *An Assessment of Education Resources Available for Office Technology and Management Programme in Polytechnics in the South West Zone of Nigeria. A paper presented at the conference for academic staff of higher and further education institutions organized by ACME professionals (UK) IN Aston University, Aston. Triangle, Birmingham.*
- Adediwura, A. A. & Tayo, B. (2017). Perception of Teachers Knowledge, Altitude and Teaching Skills as Reviewed, 2 (7), 165 – 171
- Adegbemile, O. (2012). Information and Communication (ICT) Availability and Utilization in management of Secondary schools in Kaduna Staten, Nigeria. *Journal of Educational and Social Research* 2(7), 23 – 30.
- Ademiluyi, L. F. & Okwuanaso, S. I. (2011) Influence of NBTE Accreditation in Academic Quality Indices in Polytechnic Secretarial Studies Programme. *Business Education Journal*, 7(1), 101-113.
- Adeshina, T. J., Udoh, A., Ndomi, B & Aliyu, M. (2013). Relationship between the utilization of internet based information by Secretarial Teachers in the Nigerian College of Education and the effectiveness of their lesson delivery. *International Journal of Vocational and Technical Education*, 5(2), 13-20.
- Adeyemi, C. V. (2016). Competences Required by Teachers of Business Education for Esffective Teaching of Entrepreneurship. *Business Education Journal*, 8 (1), 192 – 205.
- Adu, J. B, & Olatunbosun P. (2017). Influence of Altitude Towards Mathematics Studies. *Journal of Quality Service Application*, 2 (6), 63 – 68.
- Agbamu, T. P. (2015) Restructuring Business Teacher Education through Information and Communication Technology Driven Curriculum. *Business Education Journal*, 4(1), 10-17.
- Agoha, C. N. (2011). Curriculum Development and Implementation for Africa. NSUKKA *mike social press.*
- Agomou, E. E. (2015). Modern Office Technology: issues, procedure and practice. Nsukka, *University press.*
- Aigbohese, O. (2010). An Overview of Modern Management Theories in the Context of University Administration. *Journal of University Administration*, 1 (1), 5 – 15.
- Ajah, O. A. (2011). Evaluation of the Triangles Facilities for Business Studies in Polytechnics in the South States in Nigeria. *Journal of business management*, 1 (1), 52 – 60.
- Ajala, A.A. (2015). Concepts of Management and Information System (first edition), 15-25.

- Akiri, A. A. & Ugborugbo, N. M. (2010). Teachers' Effectiveness and Students performance in Public Schools in Delta State, Nigeria. 3 (2), 107 – 113.
- Akude, I. and Ebeniza, A. N. (2012). Issues and Trends in Teaching of Office Technology and Management. *Association of Business Educator of Nigeria. Book of reading*, 1(9), pp 114-143.
- Akude, I. & Ebeniza, A. N. (2012). Application of Information and Communication Technology in Teaching and Learning in State owned Colleges of Education the South – East of Nigeria. Reviewed from hHp. /do1 /0591 /jesr.2012 /3n p20
- Alkadi, L. A. (2014). Internet HTML and Operating System: Louisiana *University Press*
- Allexander, M. (2013). Lecturers, Competencies and Student's Academic Performance. *International Journal of Humanities and social sciences*, 3 (1), 6 – 13.
- Al-mutairi, A. (2011). Factors affecting Business Studies Performance in Arab Open University, Kuwait, *International Journal of Business & Management* (146 – 150).
- Amoor, T. R. (2010). Issues and Trends in Teaching and Learning of Office Technology and Management. *Book of Reading in Business Education*, 1 (9), 54 – 60.
- Ayeni, A. J. (2011). Teachers' Professional Development and Quality Assurance in Nigeria Secondary Schools. *World Journal of Education*, 1 (2), 143 – 149
- Azuka, M. O. (2012). Introduction to Desktop Publishing. Onisha: Nobel press Ltd.
- Commission for Information and Communication Technology (2011). National ICT Competencies Standard for Teachers in Nigeria. Retrieved October 20, 2015 From [www.nec.gph.ph/nics - Teachers](http://www.nec.gph.ph/nics - Teachers).
- Baba, E. I. (2012). Assessment of Adequacy, Functionally and Utilization of Office Technology for Teaching in Tertiary Institutions in Kogi State *Nigeria. Business Education Journal*, 7(1), 114-123.
- Bandura, A. (2011). Self Efficiency: the exercise of control. New York: Freeman.
- Bharadwaji, B. K. & Pal, S. (2011). Mining Education Data to Analyze Students Performance. *International Journal of advanced computer science and applications*, 2 (6), 63 – 69.
- Blissmer, J. (2013). Cultural Globalization and Integration of ICT in Education in Kumpulainen (Ed), *Educational technology: History, Development and principles*: London, *Harper and Rows Publishers*.
- Boritz, J. E. (2010). The Accounting Curriculum and Information Technology of Nigeria Accountant, 33 (2), 26-34.
- Commission for Information and Communication Technology (2011). National ICT Competency Standard for Teachers in Nigeria. Retrieved October 20, 2015 from [www.nec.spy.ph/nics-Teachers](http://www.nec.spy.ph/nics-Teachers).

- Darejan, G. (2015). Using the Internet and Computer Technologies in Teaching and Learning Process. *Journal of Education and Practice*, 6(2), 67-69.
- Darling-Hammond, L. & Hudson, L. (2016). Redesigning Teacher Education. Opening the door for New Recruits to Science and Mathematics Teaching. Sata Monica: *The RAND Corp.*
- Eggen, P. & Kauchak, D. (2018). Strategies for Teacher Content and Thinking Skills 4<sup>th</sup> Ed. Needhanltheights. Allym Bacon.
- Ejide, E. C. (2016). A Comparative Analysis of Information and Communication Technologies Available in Selected Industries and Those Available for Office wTechnology and Management Training in Selected Institutions. *A project for the award of Degree in Business education UNN.*
- Ejifor, P.N.D. & Aniagohi, V. A. (2014). The Nigeria Manager: challenges and opportunities. Ibadan intec.
- Ezeahurukwe, N. L. and Ameh, A. O (2017) Entrepreneurship Opportunities Available in the Office Technology and Management Programme. *Nigeria Journal of Business Education*, 4 (2), 322 – 331.
- Farooq, M. S. & Shafiq, M. (2011). Factors Affecting Students Quality of Academic Performance: A case study of Secondary School level. *Journal of Quality and Technology Management*, 7(2), 1-14.
- Fazo, R. H. & Reskes, D. (2016). Acting as we Feel: when and how attitude guide behaviour. Boston, allym & bacon.
- Federal Republic of Nigeria. (2013). National Policy on Education. Lagos NERDC Press
- Folorunsho, I. O. (2012). Effects and Solutions to Inadequacy of in Structural Equipment for Office Technology and Management in our Tertiary Institutions, *COEDAG Journal of Business Education*, 1 (1), 1 – 6.
- Galbraith, J. (2010). Knowledge Management Technology in Education: an overview, Education Technology.
- Gwang-jo, K. (2010). ICT in Education: issues and questions. Global Symposium on ICT in Education.Co-organized by the World Bank, the Korean Ministry of Education and Research Information Service (KERIS hHp:11 web. World bark).November 9-11, 2009 Seoul, South Korea. Retrieved from. Org / WBSITE /EXTERNAL / Topics / EXT EDUCATION /O, Content MOK:22284 657 – Menu pk: 617610 – page pk: 148956 – pipk:216618 – the Site pk: 282386. Html. On march 20, 2013.
- Igbinedion, V. I. (2011). Office Technology and Management Education: a catalyst for family empowerment: *Ozean Journal of social sciences*, retrieved on August 31<sup>st</sup>, 2011 from / hHp www.ozelacademy.comojss- v3n3 – 4. Pdf.
- Inihebe, W. J. (2012) Competency Based Education: concept and use in *Business Education Journal of Occupation and Training*.

- Iredia, P. A. (2015). The tripod of liberal, Vocational and Technical Education: politics of dichotomy in Nigeria: *4<sup>th</sup> inaugural Lecture of Auchi polytechnic*, Auchi, Edo State.
- Isineyi, T. N. (2011). Challenges of Office Technology and Management Profession in Era of Globalization. *Journal of professional secretaries and administrators*, 12 (3), 4 – 33.
- Iyiola, M. A. (2014). Introduction to Information and Communication Technology: (Office Application for Secretaries and Administrators).
- JAMB (2012). Joint Admission and Matriculation Board: Unified University, Polytechnic and College of Education Bochure. Retrieved from 17/04/2013 <http://www.jamng.com/pce> Institution, php.
- Jebba, A. M. (2013). Survey of Accessibility and Usage of Information and Communication Technology among Students of Technical Education in tertiary Institutions in Niger State, Nigeria *New Media and Mass Communication* (online) 3, Retrieved from [www.iiste.org](http://www.iiste.org) on April. 2013.
- Jimoh, I. A. (2017). *Fundamental of Educational Psychology*. Bonabay Publications (Publishing and Media Consultant) Lagos, Nigeria.
- Kamoya, I. (2018). Improving Office Education in the Technological Era. *Business Education Journal*, 7(2), 123 –130.
- Komolafe, A. I. (2012). Office Technology and Management Curriculum: issues, strategies and rational *Journal for promotion and advancement of secretarial profession*. (SECFORUM) Ede: 5, 64-86.
- Liverpool, L. S. O. (2012). Information and Communication Technology in Teacher Education in Nigeria: past, present and future – Proceeding of the 1<sup>st</sup> Teacher Summit, Kaduna., National Teacher's Institute. ISSN 2043-6165 Itupale online *Journal of African Studies*, 2(2), 39-54.
- Long, I. (2013). *Introduction to Computer and Information Processing* 3<sup>rd</sup> edition prentice Hull inc, New Jersey.
- Madumere, C.A. (2010). Managing Quality Assurance in the Secondary Education sector. *A paper presented at the 18<sup>th</sup> annual congress of the Nigeria Academy of Education at University of Port-Harcourt*, 10<sup>th</sup> November 2010.
- Mamman, M. (2011). Hypothesis and Statistics. *Paper Presented at the Annual Conference of MAN held at Ado-Ekiti State University, September 2021*.
- Manlove, D. C. & Elliot, P. G. (2016) Absent Teachers: another handicap for students: the educational practioners, 13.-22.
- Medlin, B. D. (2011). The Factor that may Influence a Faculty Member's Decision to Adopt Electronic Technologies in Instruction (*Doctoral dissertation, Virginia Polytechnic Institute and State University, 2011*) ProQuest Digital dissertation (UMI No. AAT3095210).
- Morrison, C & Wells, D. (2012). *Computer literacy basics: A comprehensive guide to ICT*, Boston, USA: GEX Publishing Services.

- Mulder, M. Weigel, T. & Collins, K. (2016). The Concept of Competence in the Development of Vocational Education and Training in Selected EU states: a critical analysis. *Journal of Vocational Education and Training* 59 (1), 65 – 85. Retrieved on July 6<sup>th</sup> 2012, from <http://mmulder.nl/.../2007-01-19/Murweigel-Collins-OJVET.pdf>.
- National Board for Technical Education (2013). Curriculum and Italic Course Specification for National and Higher Diploma in Office Technology and Management studies, Kaduna.
- Nnamdi, A. (2010). Research Methodology in Behavioural Sciences. P73. Ikeja, Lagos: Longman, Nigeria Plc.
- Nwosu, A. N. (2017). Role of Office Technology and Management Training in Creating Employment, *Business Education Journal*, 6 (1), 116 – 125.
- Obayan, P. (2012). Improving Teacher Quality in Nigeria. for the 21<sup>st</sup> Century Benin: *University Press*.
- Ochai, G. (2017). Information and Communication at a Glance. Nsukka: *Excellent Press*.
- Ofodu, G. O, (2017). *Nigeria Literacy Educators and their Technological Needs in a Digital Age. Educator focus*, 1 (1), 22-30.
- Ojukwu, K & Ojukwu, F. k. (2012). Competencies Related to Modern Information and Communication Technologies that Need to be Infused into Business Teacher and Senior Secondary School Curricula. *Business Education Journal*, 3 (5), 137 – 146.
- Okoji, B. I. (2012). Information and the New Challenges in Record Management. *Workshop Proceedings of NAPSSON*, 29 – 49.
- Okoro, J. (2010). Assessment of Office Education Skills Required for Entrepreneur Lecture. *Business Education Journal*, 8 (2), 67 – 72
- Okoro, J. (2010). Information and Communication Technology Skills Required for Office Education Graduates as Perceived by Managers. *Delta Business Education Journal*, 1 (5), 147 – 154
- Olive, H. & Chapman, V. (2013). Obstacle to the Integration of ICT in Education: result from a worldwide educational assessment. *Computer and Education*, 37, 163-178.
- Omeje, T. S. (2016). Imperative for Reforming the Secretarial Curriculum. *Business Education Journal*, 6(2), 27-37.
- Onumara A. (2017). The Use of ICT In Nigeria Universities; A case study of Obafemi Awolowo University, Ile-Ife, Library philosophy and practice Retrieved on 2<sup>nd</sup> March, 2013 from <http://www.webpages.uidaho.edu/~moblin/onumara2.htm>.
- Osuagwe, D. C. (2013). The Internet Resources and Applications. This Day P. 16 1<sup>st</sup> January 2012.
- Osuwa, A. A. (2012). Information and Communication Technology in Accounting Education *Business Education Journal*, 3 (5), 40-42

- Pikoff, E. (2015). Teacher Absenteeism: what administrator can Do. *NASSP Bulletin*, 77(551), 39-45.
- Rabindra, N. T. (2011). Seven Principles for Good Practice in Undergraduate Education *AAH. Bulletin*, 39. 3 – 7.
- Robson, W. (2017). Strategic Management and Information System. 2<sup>nd</sup> edition London: *Pitman Publishing*.
- Rogers, E. M. (2003). Diffusion of Innovation (5<sup>th</sup> Edition). PP 76-123. *New York: Free Pres.*
- Sani, A. J. (2017). Current Issues and Trends in Business Teacher Education Preparation of Educators for Workforce. *Book of Reading in Business Education*, 1 (9), 86 – 92.
- Schacter, J. & T. Thum, Y. M. (2017). Paying for High and Low Quality Teaching. *Education Review* 23, 411 – 430.
- Smith, B. D. (2013). Understanding as Expanding Multicultural Competence in Teaching. A faculty guide. Office Technology resources in psychology. Retrieved from [hHp:// tea chpsy.org/ resources/Documents/otrp/resources/hHleford 0.5. pdf](http://tea.chpsy.org/resources/Documents/otrp/resources/hHleford 0.5. pdf).
- Stuart, W. D. (2011). Influence of Sources of Communication: User Characteristics and Innovation Characteristics on Adoption of a Communication Technology (Doctoral dissertation, The University of Kansas, 2000). Pro Quest Dissertations.(UmiNo.AAT 999 81115).Technology and the teacher profession. *Teacher and Teacher Education*, 21, 15-31.
- Sulman, L. (2011). Ways of Seeing, Ways of Teaching, Ways of Knowing, Ways of Learning about Teaching. *Journal of curriculum studies*, (28), 393 – 396.
- Tella, A. Toyobo, O. M., Adika, L. O., & Adeyinka, A. A. (2010). An Assessment of Secondary School Teachers Uses of ICTs: Implications for Further Development of ICTs Use in Nigeria Secondary Schools. *Online submission*, 6(3).
- Ubulom, W. J., Oneckwa, F. A. & Amaehule, S. (2011). Analysis of Information and Communication Technology: Accessibility and Utilization in Teaching Business Studies in Secondary Schools in Andomi Local Government Area, River State, Nigeria. *International Association for Teaching and learning (IATEL) proceedings of the 2011 international conference on Teaching and learning*.
- Uche, C. F. (2010). Appraisal of Information and Communication Competencies Required for Senior Secondary Business Education Graduates. *Business Education Journal*, 4(1), 122-136.
- Umara, J. P. (2018). Professional Ethics and Social Responsibility. Enugu, *Emmar press Ltd*.
- Umoru, T. A. (2015). Challenges and Opportunities of Utilization of Social Media by Business Education Students in Nigeria Universities. *International Journal of educational and pedagogical science*, (11), 3969 – 3973.
- UNDP. (2010). Educational Resources for Information and Communication Technology <http://www./index.php/itworld/36684-dbi-to-train3000-Tertiary Institution on ICT>.

- UNESCO. (2013). ICT for Education: Potential and Potency in W. D. Haddad and A. Draxler (EDS), *Technologist for Education Paris*.
- Usioboh, S. A. (2012). Information and New Challenges in Records Management: managing modern technology towards paperless office. *Workshop proceeding of NAPSSON*, 79 - 94.
- Vajargah, K.F., Janani, S. & Azadmanesh, N. (2010). Application of ICTs in Teaching and Learning at University Level: The case study of shahidBeheshti University. *The Turkish online Journal of Educational Technology*, 9 (2), 112 – 119.
- Williams, K., Sawyer, S. C. & Hutchinson, S. E., (2012). Using Information Technology (A Practical Introduction to Computer and Communication). Boston, USA: *Irwin McGraw-Hill*.
- Yusuf S. (2015). Introduction to Information and Communication Technology. *University Publication*, Ilorin PP 12- 23.
- Yusuf, S. (2019). Modern Office Management and Effective Administration Skills for Secretaries and Managers. *Delthom Publishers*, Ilorin, Kwara State.

**Appendix A**  
**LETTER OF VALIDATION**

Department of Business and Entrepreneurship Education,  
Faculty of Education,  
Kwara State University, Malete,  
P.M.B. 1530, Ilorin, Nigeria

Date:.....

.....

.....

Dear Sir,

**REQUEST FOR QUESTIONNAIRE VALIDATION**

I am a Masters (Business Education) Student in the above named Department, conducting a research on the **“Influence of Information and Communication Technology on the Teaching of Office Technology and Management Courses in Polytechnics”**.

I respectfully request you to critically examine the instrument in terms of its appropriateness and adequacy of the kerns in measuring what it is suppose to measure. Attach is a draft of the instrument. Your comments and suggestions will help to improve the quality of the instrument.

Thank you.

Yours faithfully,



**Ramat Omolola Immam**

18/27/MBE006

## Appendix B

### QUESTIONNAIRE ITEMS ON THE INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGY COMPETENCIES ON THE TEACHING OF OFFICE TECHNOLOGY AND MANAGEMENT COURSES IN POLYTECHNICS IN NORTH CENTRAL NIGERIA

This questionnaire is designed to examine the influence of Information and Communication Technology Competencies on the Teaching of Office Technology Management Courses in Polytechnics in North Central Nigeria.

All the information disclosed will be treated as confidential and shall be used for the purpose of the research.

#### Section A (Respondents' Demographic Variables)

Please tick ( ) or fill in your response as appropriate

**Category:** Federal Polytechnic Lecturers ( ) State Polytechnic Lecturers ( )

Sex: Male ( ) Female ( )

#### SECTION B

Please note the key:

**VHE** - **Very High Extent**

**HE** - **High Extent**

**LE** - **Low Extent**

**VLE** - **Very Low Extent**

**Extent of Basic Computer Operation competencies influence on the Teaching of OTM Courses.**

S/N	Please, State the Extent to which the following influence Teaching of OTM Courses	VHE	HE	LE	VLE
1.	Ability to connect all hardware component of the computer system.				
2.	Ability to boot up and shutdown computer system.				
3.	Ability to effectively utilize the input device for word processing.				

4.	Ability to edit and format document effectively.				
5.	Ability to utilize secondary storage device eg. Flash Drive and CD.				
6.	Ability to create work sheet with Micro software.				
7.	Ability to create present materials using Microsoft Power point.				
8.	Ability to utilize Corel draw for different drawings.				
9.	Ability to utilize desktop publishing.				
10	Ability to utilize database management system.				
11	Ability to manipulate projector.				
12	Ability to use scanner correctly.				
13	Ability to manage files in the computer.				
14	Ability to use different types of computer both black and colour printer.				
15	Ability to maintain security of data.				
16	Ability to use and install Anti-Virus software.				

### SECTION C

#### Extent of networking competencies influence the Teaching of OTM Courses.

S/N	Please, state the extent to which the following influence teaching of OTM Courses.	VHE	HE	LE	VLE
17.	Ability to use Internet for E-Mail and Browsing.				
18.	Ability to use Internet to update File Transfer Protocol (FTP) using newsgroup and chat for E-commerce (exchange of information between customer and vendor).				
19.	Ability to save web page to a location on a drive.				

20.	Ability to use the internet for data collection and information exchange.				
21.	Ability to use the internet for E-banking.				
22.	Ability to use the internet with students online.				
23.	Ability to apply internet Explorer in creating a new file folder and printing.				
24.	Ability to use website browser and internet search engine for surfing.				
25.	Ability to format web page.				

### SECTION D

#### Extent of Telecommunication Competencies Influence on the Teaching of OTM Courses.

S/N	Please, state the extent to which the following influence the teaching of OTM Courses.	VHE	HE	LE	VLE
26.	Ability to use telex facilities in sending or receiving correspondences.				
27.	Ability to teach the use of machine for massages.				
28.	Ability to install and configure telecommunication software.				
29.	Ability to practice correct communication ethics and etiquette according to guidelines and laws.				
30.	Ability to work collaboratively and cooperatively in a technology Setting.				
31.	Ability to demonstrate knowledge and skills in the effective operation of mobile cellular.				
32.	Ability to operate video conferencing equipment during net meeting.				
33.	Ability to use electronic organizer technology for information storage.				

## SECTION E

### Extent of Media Competencies on the Teaching of OTM Courses.

S/N	Please, state the extent to which media can influent the teaching of OTM Courses.	VHE	HE	LE	VLE
34.	Ability to effectively use distance learning desktop video conference and teleconferencing technology.				
35.	Ability to produce based products such as newsletters, brochures and poster.				
36.	Ability to produce electronics slide and overheads for electronic teaching.				
37.	Ability to use paintings and drawings to produce images.				
38.	Ability to produce print fliers.				
39.	Ability to edit and produce a video text.				
40.	Ability to demonstrate mastery of media communication resources.				
41.	Ability to use a video Tape Recorder.				
42.	Ability to use close circuit, TV via cable Satellite.				
43.	Ability to effectively manipulate a fax machine.				
44.	Ability to browse and download information from net.				

## Appendix D

SPSS Statistics is running in Unicode encoding mode. This file is encoded in a locale-specific (code page) encoding. The defined width of any string variables are automatically tripled in order to avoid possible data loss. You can use ALTER TYPE to set the width of string variables to the width of the longest observed value for each string variable.

DATASET NAME DataSet1 WINDOW=FRONT.

RELIABILITY

/VARIABLES=Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18 Q19 Q20 Q21 Q22 Q23 Q24

Q25 Q26 Q27 Q28 Q29 Q30 Q31 Q32 Q33 Q34 Q35 Q36 Q37 Q38 Q39 Q40 Q41 Q42 Q43 Q44

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE.

### Reliability Scale: ALL VARIABLES

**Case Processing Summary**

		N	%
Cases	Valid	20	100.0
	Excluded <sup>a</sup>	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.882	44

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Ann Arbor, MI 48106 - 1346 USA