INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGY APPLICATIONS ON OFFICE EDUCATION PROGRAMME IN THE FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIAIN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF BUSINESS EDUCATION DEGREE

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DECLARATION

I declare that the work in this thesis entitled Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria has been carried out by me in the Department of Vocational and Technical Education. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this thesis was previously presented for another degree or diploma at this or any other institution.

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CERTIFICATION

This thesis entitled INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGY APPLICATIONS ON OFFICE EDUCATION PROGRAMME IN THE FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA by Dekom Habila BAKO meets the regulations governing the award of the degree of Master of Business Education of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research work is dedicated to Almighty God and to my late dad, Nde Bako Dekom.

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ABSTRACT

This research was conducted to determine the Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria. Four objectives were raised in the research, four research questions were set to answer the problem of the study while four null hypotheses were formulated and tested at 0.05 level of significance. A descriptive survey research design was used for the study, the Sample of the study consisted of One hundred and twenty-nine students and eleven lecturers from Office Education Programme in three Federal Colleges of Education in North-Central Zone of Nigeria. The students were selected using random sampling technique, while there was no sampling for lecturers because of their limited number. Questionnaire was used in gathering data and the data collected were statistically analysed. The test of the null hypotheses showed no significant difference in the mean scores of both the students and lecturers. The research findings revealed, among others, that modern Information and Communication Technology equipment are not available for effective teaching and learning of Office Education in the selected colleges of education in North Central zone of Nigeria and that the available ICT facilities were not in their functional state to achieve the desired influence on Office Education programme. Based on the findings, it was concluded that the introduction of ICT in Office Education Programme has had no influence which implies that students of Office Education from Federal Colleges of Education do not have adequate knowledge, skill, and competencies in ICT needed for survival in a globalized economy. The research recommended, among others, that government Federal and State, TETFUND and Stakeholders should provide relevant and

modern ICT facilities in the Colleges of Education in North-Central Zone of Nigeria, so as to produce the much desired manpower to man the modern day office that is ICT-driven.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

Information and Communication Technology (ICT) plays a critical role in a society's educational systems. In these societies, the stakeholders in education policy, redesign and reconstruct their education systems based on the new educational paradigms such as constructivist theory, so that both teachers and students develop the necessary knowledge and skills sought in this digital age. Hence, most countries around the world are focusing on approaches to integrate ICT in teaching and learning to improve the quality of education by emphasizing competencies such as critical thinking, decision-making, handling of dynamic situations, working as a member of a team, communicating effectively (Anderson & Weert, 2002). Also governments especially in developing countries have tried to improve their national programs to integrate ICT into education.

ICT has been variously defined. It can be broadly defined as "technologies that facilitate the acquisition, storage, processing, transmission, and disseminating of information in all forms of application areas including voice, text, data, graphics and video" (Bulent, Pinar, Bahar, & Tarik, 2009). This definition mainly focuses on the importance of the intersection of information technology, information content and telecommunications in enabling new forms of knowledge production and interactivity. ICT allows many people to generate and disseminate information, thus playing an active role in the process of interaction among professionals, learners, policy makers, peers and among others. In the definition of the ICT in education, four main elements can be taken into consideration; ICT as an object that refers to learning about ICT, an

assisting tool, a medium for teaching and learning and finally a tool for organisation and management in schools (Bulent et'al, 2009).

The integration of ICT into education has been assumed as the potential of the new technological tools to revolutionize an outmoded educational system (Albrini, 2006). In the last 20 years, initiatives, projects and implications related to use of ICT into education motivate teachers to gain necessary knowledge and skills in using ICT in their instruction.

ICT has very strong influence in education as it provides enormous tools for enhancing teaching and learning. There have been many studies that have highlighted the various ways that ICT may support teaching and learning processes in a range of disciplinary fields such as the construction of new opportunities for interaction between students and knowledge; accessing information and so on. ICT can have a useful influence on teaching and learning if it is used under right conditions including suitable sources, training and support. ICT also offers the potential to meet the learning needs of individual students, to promote equal opportunity, to offer learning material, and also promote interdependence of learning among learners (Bulent, et'al 2009).

The advent of ICT applications and their adoption in human endeavour has necessitated a change of procedures and methods. In particular, the educational sector has had to change its methods of delivery from traditional (face-face) to use of alternative delivery methods. Increase in complexity and worldwide interaction of business, industry, education and government numerous technologies and the changes they have brought have affected the way things are done in office. These technologies include facsimile machines, interactive technologies, Internet, electronic mail, voice mail, teleconferencing and other new information systems. These unique innovations

in office technology have almost completely altered the nature, environment, content, tasks and competencies in Office Technology and Management all over the world.

College of Education is one of the most reliable teacher training institutions set up by the federal government under the Federal Ministry of Education; supervise by National Commission for Colleges of Education (NCCE) which is saddled with the responsibility of training and producing Nigeria Certificate in Education (NCE) Teachers and Business Education is one of the numerous departments saddled with this responsibility.

Office Technology and Management is viewed as training in business practices and in specific skills such as information processing, keyboarding/ word processing, recordkeeping, and shorthand. It can also be seen as training for administrative support personnel in business and industry and for business teacher preparation. In office technology and management for example, there are now such terms as word processing, data processing, reprographics, micrographics that are used to describe many technological processes that have evolved from traditional office occupations.

The subjects in office education as noted by Igbinoba, (2008) are shorthand, typewriting, office practice, record-keeping, word processing, secretarial duties, business methods, office practice, business law, computer appreciation/ application, and consumer education. These Programmes provide the necessary skills and knowledge needed for employment in the area of business in the office. Each of these areas has experienced one type of innovation or the other with the advent of ICT. These innovations are all aimed at preparing and equipping the individuals with present realities of life in the workforce.

The advent of ICT has brought about a faster and more efficient ways and means of handling office procedures and decision making processes based on accurate information, hence, most business organizations and even governmental agencies are now adopting office automation – which is also referred to as e-office in their routine operations (Aliyu & Adesina, 2012). Office technology and management is an important aspect of business education which has been affected by the present technology, the application of ICT in effective teaching and learning of Office technology and management is therefore inevitable.

From the foregoing, it becomes pertinent for OTM students to be equipped with relevant skills provided by the advent of modern Information ICT applications/skills so as to attain the aim of providing trained manpower for the modern day world of work including the education sector. The study therefore delved into the Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria.

1.2 Statement of the Problem

Based on observation and interaction with some Business Educators and Students of OTM around the area of study, the researcher has much concern as to whether the introduction of ICT applications in teaching and learning of Office Technology and Management has any influence, this is because it appears some of the students and lecturers are ill-prepared as they are not aware of some of the emerging technologies in ICT applications not to talk of knowing how to operate the ICT applications such as the computer (common word processing package), digital photocopiers, accessing the internet, operating multi-media projector, using facsimile,

preparing slide presentation, video conference, handling star-board, e-presence, using mobile phones to perform certain operations (organiser, mobile banking) etc. meaning they are only aware of these facilities in theory not in practice. Observation also reveals that the teaching of office practice has not been enhanced to reflect the technological advancement taking place in the present day office since most Office Technology and Management students display some level of ignorance about modern ICT applications. Some of the lecturers in these Colleges seem naive about the operation of some of the ICT facilities. It should be noted here that teachers' expertise in ICT application is an important factor in its successful use in lessons "the ways that teachers have their students use computers are certainly affected by their own level of technical expertise" (UNESCO, 2009).

A careful look at the NCCE minimum standard (curriculum) reveals that it was reviewed in 2012, but the content and provision for the award of NCE in business education generally, and Office technology and management is still the same without any notable change. The researcher doubt if the teachings of courses like business communication, Office Technology and Management, word processing are collaborated with ICT applications. The situation causes the researcher to ask whether the three computer based courses: Computer Appreciation (BED 218) and Introduction to ICT/Computer Applications (BEA/S 328) and Word processing (BES 322) have been properly integrated with ICT.

Based on the above observation, the researcher wonders if the introduction of ICT in teaching and learning of Office Technology and Management has any positive influence on the students' levels of computer-based competence. In other words, the researcher is worried about the level of Office Technology and Management students' ICT competence in the Federal Colleges of Education in North-Central Zone of

Nigeria which necessitated the quest on the topic "Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria".

1.3 Objectives of the Study

The general objective of the study is to determine the Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria.

The specific objectives of this study are to:

1. identify the availability of modern Information and Communication Technology facilities in Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.
2. determine the influence of use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.
3. ascertain the competency of lecturers and students in the use of ICT facilities in Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.
4. identify the challenges face in the of use of ICT facilities in Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.

1.4 Research Questions

Based on the specific objectives of the study, the following research questions have been formulated:

1. What types of ICTs are available in Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria?
2. What is the influence of the use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria?
3. How competent are the lecturers and students in the use of ICT facilities in Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria?
4. What are the challenges faced in the use of ICT facilities in Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria?

1.5 Research Hypotheses

Based on the specific objectives and the research questions, the following null hypotheses are formulated:

Ho_1

There is no significant difference between the mean ratings of students and lecturers regarding the availability of modern ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.

Ho_2

There is no significant difference between the mean ratings of students and lecturers regarding the influence of use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.

Ho_3

There is no significant difference between the mean responses of students and lecturers regarding the competency of lecturers and students in the use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.

Ho_4

There is no significant difference between the mean responses of students and lecturers regarding the challenges face in the use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.

1.6 Significance of the Study

The findings of this research should be of immense benefit to the following: Federal Government, National Commission for Colleges of Education, Management of Federal Colleges of Education under study, NCE students of OTM and future researchers in the following ways:

- this study will benefit the Federal Government of Nigeria, by bringing to light the need for upgrading ICT facilities in office education programme in Federal Colleges of Education in North-central zone of Nigeria.
- the findings of the study will also help to the Management of Federal Colleges of Education to focus attention on Office education programme by providing the needed modern ICT facilities in the department to meet up the skill desired by the modern business world. This in turn will make the Management proud of their products (Graduates) as they will compete effectively in the labour market having obtained the desired skilled.

- the National Commission for Colleges of Education will see the need to review the provision of ICT facilities in the Minimum standard (curriculum of office technology and management) to be in tune with expectations of a modern office and also bring to light the need for students to be trained with modern ICT facilities instead of facilities of the office of the 60s and 70s that no longer exist.
- also this study when accomplished, will contribute substantially in making the students aware of the importance of making personal efforts to be ICT literate as their academic achievement will be greatly enhanced. Lecturers on the other hand will also be exposed to more ICT facilities and the need to developed their knowledge where such is lacking, by attending ICT related workshops and conferences.
- this study when completed will serve as a reference point to other researchers who might wish to carry out a research of similar nature.

1.7 Basic Assumptions of the Study

In this study it was assumed that:

1. modern ICT Facilities are available in Office Education programme in the Federal Colleges of Education in North-Central Zone of Nigeria.
2. use of ICT facilities has influenced Office Education programme in Federal Colleges of Education in North-Central Zone of Nigeria.
3. most lecturers and students of Office education programme are competent in the use of ICT facilities in Federal Colleges of Education in North-Central Zone of Nigeria.

4. there are no challenges impeding the use of ICTs on Office education programme in Federal Colleges of Education in North-Central Zone of Nigeria.

1. 8 Delimitation of the Study

This research was delimited to all federal colleges of education in the north central Geo-political Zone of Nigeria namely: Federal College of Education, Pankshin Plateau state, Federal College of Education Okene, Kogi State and Federal College of Education Kontagora, Niger State with particular reference to OTM in Business Education Department of these Colleges.

The study was also delimited to OTM students (NCE 3 only) and Office Technology and Management lecturers of Business Education Department in the research areas only. This was due to the fact that, they are in better position to respond and give useful information as regards the subject matter because of their technical knowledge of the topic in question. This research is also delimited to ICT facilities such as: Computers (desktop and laptops), digital photocopiers, facsimile machines, printers, scanners; Internet Connectivity (with fee-based web services, email, instant messaging, webmail, social media.); Electronic meeting systems (Smartboard, Videoconferencing, Tele/Video conferencing, Decision Room Conferencing) because they are the types of ICTs that are mostly used in today's modern office.

CHAPTER TWO
REVIEW OF RELATED LITERATURE

This study delved into Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria. Information extracted from Internet, Textbooks, Journals, NCCE Minimum standard, past research theses were reviewed under the following subheadings:

2.1 Theoretical Framework

2.1.1 Constructivism

2.1.2 Collaborative Theory of Learning

2.2 Business Education

2.3 Office Technology and Management

2.4 Curriculum Innovation

2.4.1 Needed Curriculum Innovation in OTM

2.5 Information and Communication Technology

2.5.1 ICT and Education in Nigeria

2.5.2 How ICT can be used effectively to enhance the Teaching and Learning of Non-ICT Subjects

2.5.3 Advantages of ICT in Teaching and Learning

2.5.4 Place of ICT in Curricula

2.5.5 ICT Innovations in Modern day Office and its Implication to Office Technology and Management

2.5.6 Challenges of the Application of ICT in OTM

2.6 Review of Empirical Studies

2.7 Summary of the Reviewed of Literature

2.1 Theoretical Framework

Learning theorists emphasize the role of environmental influences in shaping the way a person develops. According to learning theories, the same principles that explain how people can use a bicycle or computer also explain how children acquire social skills, emotional self-control, reasoning strategies, and the physical skills of walking and running.

There are so many types of learning theories, but for the purpose of this study, only two of these (Constructivism and Collaborative learning theory) are considered to be related to the topic in question and are hereby discussed as follows:

2.1.1 Constructivism: Jean Piaget is also an apostle of Constructivism, which asserts that the knowledge acquired by students should not be delivered by the teacher as a ready-made product. In other words it is a theory and teaching strategy holding that learners actively acquire or "construct" new knowledge by relating new information to prior experience. It contrasts with strategies that rely primarily on passive reception of teacher-presented information. Children do best by creating for themselves the specific knowledge they need, rather than being instructed in what they must know (UNESCO, 2005). Papert (1980) later found that such things would happen especially felicitously when learners are engaged in constructing something external or at least shareable: a sand castle, a book, a machine, a computer program. These kinds of activities lead to a model of learning that involves a cycle of internalization of what is outside, then externalization of what is inside, and so on.

Siemens (2006) asserted that this mode of collaboration paves the way to connectivism, or connectionism or connectivity of knowledge, which Papert (1980) professed after many years clinging to logical step-by-step constructivism. According to his later views: The deliberate part of learning consists of making connections

between mental entities that already exist; new mental entities seem to come into existence in more subtle ways that escape conscious (i.e. step-by-step) control. This offers a strategy to facilitate learning by improving the connectivity in the learning environment, by actions on cultures rather than on individuals.

Constructivist education must take command even in vocational and elementary schools, and a trainee must become a true learner. The priority is not the transmission of particular knowledge and skills from teacher to taught, but the development of the ability to acquire these by students on their own. All this, of course, is facilitated by new technologies of education (UNESCO, 2005).

Becker (2000) describes the two main teaching methods and their effect on the way in which ICT is used in lessons:

i. traditional transmission instruction assumes that pupils will learn through teacher explanation or reading from texts. Skills are learnt through practicing each skill in a sequence prescribed by the teacher.
ii. constructivist instruction assumes that understanding comes from relating new ideas to the learner's prior beliefs. Skills acquisition comes in an unstructured way as new skills are used as required to solve practical problems.

He concludes that when ICT is used in lessons, the constructivist approach is more likely to lead to successful outcomes. Furthermore, his study showed that teachers with the most constructivist philosophies tend to use computers more often and in a more challenging way both in their classrooms and as users themselves.

2.1.2 Collaborative Theory of Learning: Interactive computing technology was primarily conceived by academics, but the use of technology in education has historically been defined by contemporary research trends. The earliest instances of

software in instruction drilled students using the behaviourist method that was popular throughout the mid-twentieth century.

In the 1970s as cognitivism gained traction with educators, designers began to envision learning technology that employed artificial intelligence models that could adapt to individual learners.

Computer-supported collaborative learning emerged as a strategy rich with research implications for the growing philosophies of constructivism and social cognitivism (Resta & Laferrière, 2007). Computer-supported collaborative learning (CSCL) is a pedagogical approach wherein learning takes place via social interaction using a computer or through the Internet. This kind of learning is characterized by the sharing and construction of knowledge among participants using technology as their primary means of communication or as a common resource (Stahl, Koschmann & Suthers, 2006). The study of computer-supported collaborative learning draws on a number of academic disciplines, including instructional technology, educational psychology, sociology, cognitive psychology, and social psychology (Hmelo-Silver, 2006). This is related to collaborative learning and computer supported cooperative work (CSCW).

Stahl et'al (2006) sees collaborative learning as a situation in which two or more people learn or attempt to learn something together. Unlike individual learning, people engaged in collaborative learning capitalize on one another's resources and skills (asking one another for information, evaluating one another's ideas, monitoring one another's work etc.). More specifically, collaborative learning is based on the model that knowledge can be created within a population where members actively interact by sharing experiences and take on asymmetry roles. Put differently, collaborative learning refers to methodologies and environments in which learners

engage in a common task where each individual depends on and is accountable to each other. These include both face-to-face conversations and computer discussions (online forums, chat rooms, etc.). Methods for examining collaborative learning processes include conversation analysis and statistical discourse analysis. (Stahl et al, 2006).

Collaborative learning is heavily rooted in Vygotsky (1986) which views that there exists an inherent social nature of learning which is shown through his theory of zone of proximal development (Siemens, 2006). Often, collaborative learning is used as an umbrella term for a variety of approaches in education that involve joint intellectual effort by students or students and teachers. Thus, collaborative learning is commonly illustrated when groups of students work together to search for understanding, meaning, or solutions or to create an artefact or product of their learning. Further, collaborative learning redefines traditional student-teacher relationship in the classroom which results in controversy over whether this paradigm is more beneficial than harmful (Johnson & Holubec, 2002). Collaborative learning activities can include collaborative writing, group projects, joint problem solving, debates, study teams, and other activities. The approach is closely related to cooperative learning. Technology in education has historically been defined by contemporary research trends. The earliest instances of software in instruction drilled students using the behaviourist method that was popular throughout the mid-twentieth century.

Though the focus in CSCL is on individuals collaborating with their peers, teachers still have a vital role in facilitating learning. Most obviously, the instructor must introduce the CSCL activity in a thoughtful way that contributes to an overarching design plan for the course. The design should clearly define the learning

outcomes and assessments for the activity. In order to assure that learners are aware of these objectives and that they eventually met proper administration of both resources and expectations is necessary to avoid learner overload. Once the activity has begun, the teacher is charged with kick-starting and monitoring discussion to facilitate learning. He or she must also be able to mitigate technical issues for the class. Lastly, the instructor must engage in assessment, in whatever form the design calls for, in order to ensure objectives have been met for all students (Shank, 2008).

Without the proper structure, any CSCL strategy can lose its effectiveness. It is the responsibility of the teacher to make students aware of what their goals are, how they should be interacting, potential technological concerns, and the time-frame for the exercise. This framework should enhance the experience for learners by supporting collaboration and creating opportunities for the construction of knowledge (Kobbe, Weinberger, Dillenbourg, Harrer, Hämäläinen, Häkkinen, & Fischer, 2007).

Schoonenboom (2008) asserted that another important consideration of educators who implement online learning environments is affordance. Students who are already comfortable with online communication often choose to interact casually. Mediators should pay special attention to make students aware of their expectations for formality online (Stahl & Hesse 2009). While students sometime have frames of reference for online communication, they often do not have all of the skills necessary to solve problems by themselves. Ideally, teachers provide what is called "scaffolding" or a platform of knowledge that they can build on. A unique benefit of CSCL is that, given proper teacher facilitation, students can use technology to build learning foundations with their peers. This allows instructors to gauge the difficulty of the tasks presented and make informed decisions about the extent of the scaffolding needed (Lu, Lajoie & Wiseman, 2010).

From the foregoing review, it is pertinent to note that all the theories discussed above centers on the learners ability to interact with one another, which eventually leads to learning therefore, applying ICT for teaching and learning requires the availability of ICT facilities.

2.2 Business Education

Business education has been variously viewed. It is seen as a program which teaches its learners skills in courses such as secretarial skills; bookkeeping and accounting; data processing; business communication, mathematics, and law; computer; and business management.

Oyedele (2000) considered business education as a broad and diverse discipline that is included in all types of educational delivery systems; primary, secondary, and post-secondary. It equally believes that the programme can begin at any level, it can be interrupted for varying periods of time, and it can be continued throughout the life span of an individual. According to Ezeji (2001) business education is a field which provides training for individuals to enable them acquire skills, knowledge and attitudes required for gainful employment both with the private and the public sector and equally to become self-reliant. It also trains the individuals to acquire the right attitudes towards the economy and to be able to take part in making economic decisions for the development of his nation. Nation-building on the other hand is the individual's contribution in the areas of economy, agriculture, industrialization, commerce, defence, etc to the development or the growth of the nation.

Aliyu (2002) opines that Business Education programme is an umbrella under which all business courses take cover. These include Business Administration,

Marketing, Accounting, Purchasing and supply, Business studies; Secretarial studies etc. while at the teacher education level three major components are identified, thus: Accounting Education, Distributive/Marketing Education and Office/Secretarial Education. Osuala (2002) opines that it is a training system that enables the beneficiary to acquire skills that will make him fit into the world of work.

Similarly, National Policy on Education (2004) defined Business Education as that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. It thus goes without saying that the study of technologies, related sciences and the acquisition of practical skills, attitudes, understanding and knowledge in relation to occupations in various sectors of economic and social life are of paramount importance. Udoh (2010) stated that business education encompasses knowledge, attitudes and skills needed by all citizens in order to effectively manage their personal resources and participate effectively in the economic system.

Based on the aforementioned, business education covers a wide range of economic activities in a given society by educating and preparing people, among other things, for a career in enterprises which covers knowledge and skills that will make them secure gainful employment and self-reliant.

2.3 Office Technology and Management

Office Technology and Management is an aspect of business education that equips students with all secretarial/office skills, knowledge and attitudes that enable its recipients to enter into and advance in any secretarial domain in other to be efficient and effective. According to Osagie (1992) in Peter (2010) office education is a type of education that is concerned with office occupation or the acquisition of the

skills, aptitudes, attitudes and knowledge for carrying out successfully, the function in the office. Osuala (2004) considers office technology and management as an integral part of business education, which is a programme of instruction aimed at developing skills, knowledge, and understanding that are necessary to facilitate business information, control and processing. Office technology and management makes significant influence on the nation's economy through the preparation of clerical workers for entry into the labour market.

Aliyu and Adesina (2012) asserts that it is the vogue in Nigeria today, that any employer who puts up an advert to recruit workers, demands that prospective applicants should possess knowledge in computer operation and word processing as an added advantage. The implication of technology to office education is that, the more knowledgeable we are in this new trend, the better it is for the economic, political, social and educational development of Nigeria. The use of technology has increased greatly in this modern dispensation. Education has moved from manual operational procedures to full automation of most of the teaching learning processes. In the OTM (an integral part of business education), for example, there are now such terms as word processing, data processing, reprographics, micrographics that are used to describe many technological processes that have evolved from traditional office occupations.

Adesina and Aliyu (2012) maintains that the advent of technology has brought about a faster and more efficient ways and means of handling office procedures and decision making processes based on accurate information, hence, most business organizations and even governmental agencies are now adopting office automation – which is also referred to as e-office in their routine operations. This innovation therefore is a challenge to our educational systems, and the curriculum must be

revisited to embrace these changes or else, we would be producing Nigeria Certificate in Education, and Nigeria University graduates in office education whose certificates would be obsolete. The skills they have so acquired while in school may not fit approximately with the current demands in the world of work. Office Technology and Management has gone beyond typewriting or computer appreciation/application we offer in the formal schools to the use of sophisticated interconnected computers, computerized telephone systems, tele-conferencing, dictating machine, modern reprographic facilities to perform office work and many others have helped to facilitate the quality and efficiency of the work of the secretary.

From the foregoing, it is very obvious that, a graduate of office technology and management trained with only Olympia/Olivetti Manual typewriter will obviously find it difficult to fit into the automated business office. In an era of high competition for scarce job opportunities, there will be no place for graduate of office-education who have no knowledge of these technologies because employers are out to employ and retain only the best that are functional in order not to waste scarce resources.

2.4 Curriculum Innovation

Human societies are not static; they undergo social and political changes. Nigeria is a developing country; she witnessed some educational reforms over the years to address the lapses in the quality of education. Nigerian educational system was a product of the colonialists. The initial concern then was the maintenance of law and order. Emphasis was on the three Rs-reading, Writing and Arithmetic. The system simply intended to produce people who would serve as teachers, interpreters, pastors, clerks, tax collectors, administrators and policemen. However, there was

little improvement in the school curriculum by providing opportunities for technical and scientific education.

Curriculum change or innovation becomes necessary when the curriculum fails to meet the desired goals, or to reflect change in the economy, politics, agriculture, industrialization and technology of the country, to meet this change a revision of the curriculum is required (Adesina & Aliyu, 2012).

Olaitan (2003) explained that curriculum innovation is a process by which new ideas, Knowledge, skills and attitudes are included in a curriculum to bring about new changes and new goals in the educational set-up of a society as a result of technological development of improvement. Change occurs in the area of science and technology, politics, industrialization, education, business etc.

Adesina and Aliyu (2012) observe that innovation in secretarial business education has become a necessity as the existing curriculum has failed to achieve the desired objectives of business education due to the new ideas, skills and attitudes of doing things globally, especially with rapid changes in technology, office works which is being done with automotive machine, hence the need to produce personnel who are able to manipulate such. Curriculum innovation in OTM would entail revisiting the curriculum content of OTM with, a view to adding new business ideas, skill, knowledge and attitudes in business. They further observe that it is rather unfortunate, that the products of the existing curriculum in business education lack some necessary modern ideals, skills and attitudes to function in an information technology based world of work. This gave rise to the production of graduates without employable skill. Instead of producing job providers, the curriculum continues to produce job seekers. Nigeria educational system is meant to give rise to the best political leaders, doctors, engineers, administrators, executive directors of business

enterprises, which will in-turn give us the best political system, public health sectors, power and steel sector, agricultural sector, tourism, industries etc. Nzekwe (2007) stated that in our society, the system has produced leaders who have mismanaged our economies. Instead of being noted as one of the developed nations, and fast growing, it is rated as one of the poorest nation and also between 1st and 3rd most corrupt country in the world. This calls for repositioning of the curriculum so as to identify the barriers and introduce changes that might overcome these lapses and also add new things to the curriculum.

2.4.1 Needed Curriculum Innovation in Office Technology and Management (OTM)

Office Technology and Management is an aspect of business education; which is an integral part of vocational education, that gives training to individuals for the acquisition of practical skills and knowledge needed for employment in both public and private sectors and also for self-reliance. Owing to the change in labour market needs, changes in technology, there is therefore the need for secretarial education curriculum to be reviewed in order to meet these current societal needs. The subjects in secretarial education as noted by Igbinoba (2008) are shorthand, typewriting, office practice, record-keeping, word processing, secretarial duties, business methods, office practice, business law, computer appreciation/ application, and consumer education. These Programmes provide the necessary skills and knowledge needed for employment in the area of business in the office. Each of these areas has experienced one type of innovation or the other with the advent of IT. These innovations are all aimed at preparing and equipping the individuals with present realities of life in the

workforce. Each new curriculum's objectives according to Ezeji (2001) should be in two fold, viz:

i. It must prepare the students for initial employment,

ii. It must provide a foundation for career development.

To be able to meet these objectives in business education, persons involved in drawing up the new curriculum, should bear in mind these facts. These objectives expose the fact that secretarial education only functions if it enables the individuals to become actually perfect in doing a job. The individual offering secretarial education will appreciate it if his interest and understanding are the primary factors involved in the planning of the new curriculum.

Office Technology and Management must establish appropriate work habits; habits are important because if a man lacks the habit of thinking and the habit of doing his required work, that man is of no use in a productive economic or social factor job. Olaitan (1999) stated that even if the man possesses the required skills and the knowledge, Business Education is concerned with the establishment of certain habits through repetitive training both in thinking and in doing. Therefore the concern of those planning the new curriculum should be how those habits should be and how they should be taught, so that business education would be characterized by specific habits training.

Office Technology and Management curriculum should include the opportunity for all students to gain an understanding of the business world and the consumer world, thus facilitating intelligent consumer usage of the services and products of business. It should be organized to permit each student to progress at his own pace until he achieve his goals and interest, and to challenge him in order to maximize his opportunities and abilities. The curriculum of secretarial education

should be constantly reviewed, adjusted and improved by administrators/teachers to ensure that it continues to be appropriate to the needs of the community, students' social body and the economic which it serves.

It should use only physical facilities and facilities that will:

a. Meet the standard of modern business, and
b. Assist in building pride on the part of the student in their achievement and their preparation for a career, as noted by Talago (1970) in Osuala (2002). For innovation in secretarial education curriculum to achieve the desired goals, it must be subjected to continuous evaluation in order to ensure that the production of skill manpower is maintained to meet the demand of those changes in the labour market.

2.5 Information and Communication Technology

Information and Communication Technology is the processing and distribution of data using computer hardware and software, telecommunications, and digital electronics. Information Storage and Retrieval, in computer science, is a term used to describe the organization, storage, location, and retrieval of encoded information in computer systems.

ICT is often perceived as a catalyst for change, change in teaching styles, change in learning approaches and in access to information (Watson, 2005). It refers to technologies that provide access to information through telecommunications. Use of ICT has changed our conventional ways of learning and proposes the need to rethink education in terms of a more current context (White, 2010). ICT capability is fundamental to participation and engagement in modern information society. ICT can

be used to find, develop, analyze and present information, as well as to model situations and solve problems.

According to Ubaru (2005), information and knowledge have become the world's most important currencies for productivity, competitiveness and increased wealth and prosperity; hence nations are now placing greater priorities on the development of human capital. Knowledge is potential power and the depth of knowledge will determine the height of achievement. Supporting this opinion, Ciwar (2005) stated that Information and communication make the existence of society possible. They provide the bond that binds individuals, families, nations and other various groups together. They determine the volume of knowledge and skills available in any society and thereby constitute the bedrock for development and progress.

The educational sector is one sector that can be described as dynamic rather than static and much of the dynamism can be traced to the revolution triggered by Information and Communications Technologies (lCTs). Ubaru (2005) added that lCTs have transformed the way we do everything, most especially the way that teaching and learning is done. ICTs present the teacher and leaner with plethora of tools that can potentially raise the educational standard tremendously if properly applied. With the use of ICTs globally, distance no longer presents a barrier to effective and profitable communication.

Umar (2005) observes that the primary goal of educational reforms in Nigeria is to bring sanity into the way and manner in which teaching and learning enterprise is being conducted in our schools. This may include among others, improvement in the availability and access of instructional materials. The Application of ICT in our school system brings along with it global access to volume of teaching and learning resources and network. Resource sharing which is the spirit of ICTs opens the door of

opportunities to inter school exchange of vital/valuable information as well as collaborative problem solving. Since ICT-based learning is more learner focused and friendly, multi dimensional and multimedia in character and content, it makes the teaching and learning process simpler, easier and more exciting.

The concept lies in using the electronics, other digital means and the Internet to teach and develop. Shettima (2012) summarizes the Nigeria's ICT policy thus:

i. ensures that ICT resources are readily available to promote efficient national development.
ii. guarantees that the country benefits maximally, and contributes meaningfully, by providing the global solutions to the challenges of the Information Age.
iii. empowers Nigerians to participate in software and ICT development.
iv. encourages local production and manufacture of ICT components in a competitive manner.
v. establishes and develop ICT infrastructure and maximize its use nationwide.
vi. empowers the youth with ICT skills and prepare them for global competitiveness.
vii. integrates ICT into the mainstream of education and training.
viii. creates ICT awareness and ensure universal access in promoting ICT diffusion in all sectors of national life.

Nigeria started implementing its ICT policy in April 2001 after the Federal Executive Council approved it by establishing the National Information Technology Development Agency (NITDA), the implementing body. The policy empowers NITDA to enter into strategic alliances and joint ventures and to collaborate with the private sector to realize the specifics of the country's vision of, "making Nigeria an Information Technology capable country in Africa and a key player in the information

society by the year 2005 through using IT as an engine for sustainable development and global competitiveness" (NITDA, 2007).

2.5.1 ICT and Education in Nigeria

It is no longer a mere say that in order to remain relevant in today's wired world is increasingly necessary for nations to invest in ICTs. It is in line with this development that Litchfield (2000) in Shettima (2012) noted that education providers need to integrate online communication, activities and resources into their curriculum and award offerings. ICT facilitates learning, teaching, research and access to education. These benefits are fully tapped by developed nations.

The Federal Republic of Nigeria has an Information Technology Policy that has as its mission statement using ICT for education and one of its objectives to integrate IT into the mainstream of education and training. The Federal Ministry of Education created its ICT Department in February 2007, notwithstanding several government agencies and other stakeholders in the private sector having initiated ICT-driven projects and programmes to impact all levels of the educational sector (Agyeman, 2007) cited in Shettima (2011). In December 2005, the National Council on Education (NCE) directed Nigerian Educational Research and development Council (NERDC) to develop a school curriculum for the implementation of the effective UBE programme. NERDC has developed a high quality 9-year Basic Education Curriculum. The high points of the new curriculum include the-introduction of Basic Technology and IT as one of the core compulsory subjects. The primary education level has enjoyed government attention in respect of harnessing ICT for learning. ICT in secondary-level education is not left out in the ICT effort. There is the SchoolNet Nigeria, a non-profit organization created to address the use of

ICT in Nigerian secondary schools with the support of Federal Ministry of Education, MTN Nigeria and BusyNet computer. Shettima (2011) maintained that SchoolNet creates learning communities of educators and learners to use ICTs to enhance education by:

a. Implementing, supporting, and co-coordinating ICT development projects in education.
b. Providing and supporting lower-cost, scalable technology solutions and Internet for schools
c. Providing support mechanisms for schools for technical infrastructure and connectivity.

Shettima (2011) stressed that another initiative by Zinox Computers, a private computer company, in collaboration with Microsoft, is set to revolutionize ICT use in education from the primary to the University level. Zinox's strategy is targeted at students, lecturers, and the institutions themselves. The company wanted to achieve 75% ICT application in Nigerian schools by 2010. The ICT revolution has also registered corporate backing not only with computer companies like Zinox but also with the banks. Over 80 schools have benefited from the Zenith Bank's ICT for Youth Empowerment scheme. The scheme focuses on assisting Nigerian youth to bridge the digital divide through early introduction to ICT. The stride is not any different at the tertiary-level of education. The National Universities Commission (NUC), the government agency responsible for registering and regulating universities, has prescribed PC ownership for universities as follows: one to every four students, one PC to every two lecturers from the grade of Lecturer I and below, one PC per Senior Lecturer, and one notebook per Reader/Professor. Most Universities in collaboration

with financial institutions provide loans for procurement of laptops for lecturers and other staff.

The British Council has initiated a Digital Library Project (DLP) which is meant to assist Universities to digitalize their libraries. Acquisitions of basic ICT skills and capabilities have recently been made mandatory as part of the national minimum standard for teacher education at the Nigeria Certificate of Education (NCE) and first degree in education levels. Also, some tertiary institutions in Nigeria have made ICT skills a requirement for continuing and graduating students. Thus, the teacher education colleges have also been impacted by the current ICT revolution (Agyeman 2007) cited in (Shettima, 2012).

2.5.2 Use of ICT in enhancing teaching and learning of non-ICT Subject

Having described some examples of poor use of ICT in teaching, it is important to discuss how ICT can and is used effectively for teaching and learning. There is a considerable amount of research describing how ICT is being used very effectively in schools. Department for Education and Skills (2003a) sets out the objectives for effective use of ICT in teaching and learning as:

a. broadening horizons with more opportunities for creative expression;
b. flexibility to study where, when and how best suits individual needs and preferences;
c. increased motivation through learning that stimulates and stretches;
d. wider access to learning and participation;
e. sensible choices about when, when not and how to use new technology to enhance, enrich and extend learning."

ICT can make a significant contribution to teaching and learning across all subjects and ages. It can engage and motivate children and young people and meet individual learning needs" (DFES, 2003a). Summarily importance of ICT in teaching and learning can be follows:

a. Increased motivation

The DFES (2003) drew on a number of research projects to support its statement that: "ICT can play an important role in motivating pupils and encouraging them to engage in learning, within and beyond the classroom". Bonnett, et al (1999) undertook research into the use of multimedia software to produce a learning resource about drugs. The ICT objectives were useful in their own right as it is a key element of the ICT curriculum that pupils learn how to present multimedia information in a professional way (Department for Education and Employment, 1999). However, some of the teachers commented that that it "was no different to traditional methods in supporting the subject learning the subject-learning objectives" (Bonnett, et' al 1999). A good example of ICT being used imaginatively to create high quality output is where pupils in a Geography lesson used PowerPoint to create animated presentations of the way that volcanoes erupt (NCaction, 2004).

b. Learn independently

It is commonplace for schools to use the Internet as a research tool to allow students to find their own information. John and Sutherland (2004) describe the way in which the Internet can be used in Geography to develop a "digital earth" concept to enhance pupils' understanding of many aspects of the subject. The Internet is often used to augment textbooks at much lower cost, for example, a secondary school Art class uses the Internet extensively for research and gathering ideas, and even for

interacting directly with contemporary artists via their websites (British Educational Communications and Technology Agency, 2001).

c. Do things that cannot be done using traditional methods

BECTA (2001) discusses the use of specialist hardware and software by pupils involved in Art projects. They use digital cameras to capture original images that are used as the basis for paintings or digitally manipulated to create new and interesting effects.

This school also uses digital scanners to explore the light filtering properties of different plastics, net curtains and film negatives. The use of digital technology allows students to experiment much more than would be possible with traditional techniques given the amount of curriculum time available. As one teacher pointed out, "technology takes out all the donkey-work. Students can find out instantly whether an idea will work – before they embark on a huge production". Given that teaching is about giving students opportunities to succeed, providing them with tools to produce high quality work can deliver very positive results.

2.5.3 Advantages of ICT in Teaching and Learning

UNESCO (2005) asserted that in creating this new teaching and learning environment, ICT offer numerous advantages and provide opportunities for:

i. facilitating learning for children who have different learning styles and abilities, including slow learners, the socially disadvantaged, the mentally and physically handicapped, the talented, and those living in remote rural areas;
ii. making learning more effective, involving more senses in a multimedia context and more connections in a hypermedia context; and

iii. providing a broader international context for approaching problems as well as being more sensitive response to local needs.

ICT enable teachers and students to construct rich multisensory, interactive environments with almost unlimited teaching and learning potential. From the learning-teaching perspective, ICT should support:

i. access to online resources that use a powerful combination of video, text and graphics, prepared by specialists in a centralized facility and delivered to individuals or groups by technology;
ii. provision for the teacher to teach a whole class or part of a class, assisted by technology as appropriate;
iii. provision for all students to learn the same way or to choose ways that suit their individual learning styles, assisted by technology as appropriate;
iv. access to individualized curriculum pathways, managed by technology;
v. access to individualized diagnostic testing and assessment of progress, managed by technology;
vi. allowing students to move independently between learning areas as necessary, managed by technology;
vii. large screen video display (projector);
viii. individualized access to network resources including wireless networking and,
ix. continuity of access to network resources away from school.

The truly crucial question of how to evaluate learning in this new ICT-created- and-supported environment is too detailed to be described here even at the most superficial level. The few points listed above present us with ways through which the use of ICT can be harnessed in a school setting.

2.5.4 Place of ICT in Curricula

Information and Communication Technology is an integral part of the curriculum. UNESCO (2005) stressed that every level of schooling, ICT are not a closed or self-contained subject to be taught and learned independently from other subjects. Rather, ICT are a subject that, by its very nature, should be treated as interdisciplinary, integrative, and cross-curricular. The project-oriented method of teaching and learning, introduced through the use of ICT, will help both teachers and students become more conscious of their own capacities and responsibilities. Of course, some elements of ICT can be taught in a dedicated time. However, it is important to support learning by an immediate application of technology that is meaningful and relevant to students.

In its report, the DFES (2002) opined that ICT can exert a positive influence on learning, though the amount may vary from subject to subject as well as between key stages, no doubt in part reflecting factors such as the expertise of teaching staff, problems of accessing the best material for each subject at the required level and the quality of ICT materials that are available.

2.5.5 ICT Innovations in Modern day Office and its Implication to Office Technology and Management

ICT has impacted greatly on the office education curriculum and even of practicing secretaries; hence the need to adapt and operate in accordance with the dictates of the change or else the office education curriculum would become obsolete. Innovations in every sphere of life bring about a change in needs, which invariably affect the curriculum in use at that period. If the curriculum for such a programme must be reviewed to cater for the emerging new needs, it would require finance. There

are also some courses such as secretarial duties and office practice whose skills have become out-dated; which would need be revisited and repositioned to achieve the objectives of the modern world of work. The need for the trainer to be taught with up-to-date and comprehensive curriculum to meet technological changes cannot be overemphasized. Therefore, the need for Integration of elements of IT with office education courses, like information creation, mail handling, information storage and retrieval as well as note taking and transcription. The inadequate or lack of IT facilities training/retraining of lecturers (capacity building) and scarcity of funds for effective facilities, maintenance and provision of necessary supplies and consumables are problems which should be addressed before IT integration into office education curriculum will become effective and meaningful.

Komolafe (2005) gave some positive impact ICT has on the secretaries this includes: helping to shape business world in many ways, enhances speed and accuracy, increased job opportunities for secretaries by providing additional career areas, and it leads to better decision making: because it is easier to collect, analyze and make information available more effectively and speedily. Inclusively were also some negative impacts which Komolafe (2005) cited as including:

a. Manual skills and knowledge threatened by the change to computerization.
b. Change in the office operations may lead to resistant behaviour.
c. It has made secretarial function become a job for every tom, dick and harry as everybody can now perform some secretarial duties with the aid of IT gadgets.

Despite the negative impacts, the positive impacts still outweigh them all. If the curriculum is carefully reviewed the negative impacts will to some extent be dealt with.

2.5.6 Challenges of the Application of Information and Communication Technology in Office Education Programme

Applying ICT in Office Education has some constraints. Adebayo (2006) opined that there are some problems that must be urgently looked into for IT to be sustained in order to play its proper role in the advancement of all areas. Some of the known problems include the following:

a. Constant power failure, which damages facilities,
b. High cost of facilities installation,
c. Cost of maintenance and repairs,
d. Non-availability of capable technicians to maintain or repair the facilities,
e. Lack of up-to-date library facilities,
f. Absence of enough information technology oriented courses in the secretarial or office education curricula.

Office Technology and Management at the NCE level is meant to train an individual to develop special skills to enable him/her to work in an office or to teach at the secondary school. If the secretary would take the option of working, the secretaries will work directly with chief executives in organizations or ministries. A well trained secretary is the image maker of the organization; simply put, human relations officer. In most establishments, the first officer visitors meet on entry into any office is the secretary. Every official activity of the secretary affects the public image of the organization he/she works in.

Olowo (2000) is of the opinion that "It is paramount to redefine the curriculum content of secretarial education in the light of emerging IT which is making the secretarial education graduates to face an international competition; now that the whole world has become a global village. From the above assertions, therefore, for a

secretary to be relevant in this "new world" of work, he/she must be information technology literate, hence the need to revisit the existing curriculum. Nwosu (1999) in a related study carried out said that there was no relationship between job preparation in schools and on the job activities. He observed that, word processing had not been given sufficient timing, and even the time allotted is not properly utilized. This is not unconnected with inability by those who offer the programmes to procure computers for the course, or power failure to enable the usage as and when the time comes.

It is important to note that, not much attention is given to the practical when training in shorthand and word-processing. This has contributed in some way to the failure rate being experienced. This is the reason for which some had advocated for the removal of shorthand from the secretarial education curriculum especially with the invention of ICT. It is important to note that, the consensus of opinion has it that, dictation machines would not replace shorthand entirely, but would continue to be used to a large extent to enhance the teaching and learning. The occupation of secretaries according to the United States occupational outlook handbook 2006/07 edition, ranks among the top fifty largest growth organizations in California and in 2004, it was also ranked among the largest occupation in the U.S. economy. Job descriptions of secretaries are expanding and new titles are being created such as administrative coordinators, office administrators, administration specialist, and information manager. The skills required by employers of secretaries, according to the U.S. occupational outlook handbook 2006/07 edition, include the following: typing skill - at least 50 wpm typing speed; shorthand skill - 80/100 wpm; shorthand note taking skill; interpersonal skills; decision making skills; language and communication

skills; book-keeping skills; computer operating skills; skills in selecting, operating and maintaining modern office facilities.

Igbinoba (2008) stated that, "changes in the office environment would increase the demand for secretaries who are adaptable and versatile. Nevertheless, job opportunities will be best for secretaries with extensive knowledge of software applications" For secretarial students, according to Olowo (2000) it is that, the curriculum has painted typewriting and shorthand as the "only" core subjects of secretarial/ business education as though they are the only subjects that run throughout the 3 year program" this is very erroneous. It is noteworthy also that some aspects of the course description does not reflect the changes that are currently taking place in the business world and this could have a consequential adverse effect in the area of imparting the appropriate know-how to the students. The computer aspects of the curriculum need to be enriched and not limited to computer application introduced at the 1st semester of the 3rd academic session. Many arguments have been made in favour of Information Technology in modern offices. Ekpenyong (2003) is of the opinion that the traditional teaching emphasis on chalk and talk be shifted to that of applying the resources provided by Information Technology. Office practice also needs enhancement to reflect the technological advancement taking place in the present day office.

2.6 Review of Empirical Studies

The introduction of modern ICT in virtually every field of human endeavour has ignited the researchers' quest to investigate the influence of this technology on OTM. As a base for this study, the researcher discovered that so many investigations have been conducted in this area among such includes a research conducted by Arthur

(2005) on the topic "Integrating Information Technology with the Secretarial Education Curriculum in Tertiary Institution in Bauchi". The objective of the study was to ascertain the level of integration of ICT in Secretarial Education programme. 120 sampled population out of 180 total population was used for the study. The instrument used for data collection was the questionnaire; simple frequency table was used to interpret the result of the research. It was discovered that Information Technology facilitates the traditional work of the secretary; that the existing curriculum is inadequate for the preparation of secretaries for the modern day's office; most lecturers are not in tune with such technologies.

It was seen that the above study does not have hypotheses, location of the Pilot study conducted was not stated and the test of reliability of the instrument was not also done. Despite the above lapses the study is relevant to the current research since it focused on the importance of Information Technology in Secretarial Education. Precisely the study helped the current research by providing literature and based for drafting some of the questionnaire items used in this study.

Bako (2006) carried out a research titled: "Business Education and Information Technology: An Assessment of Business Education Students of Ahmadu Bello University Zaria". The purpose of the study was to determine the importance of Information Technology on Business Education and National development. The sample population of the study was 75 respondents; the instrument used for the study was a questionnaire. It was revealed that the Business Education curriculum is not well equipped to meet the challenges of the Information Technology Age.

The above study is relevant to the current researcher because it focused on Information Technology and Business Education and Secretarial Education is an aspect of Business Education which the research considers it very relevant precisely

in raising research questions for the current study. Despite the relevancy of study to the current one, the following shortcomings were observed: There was no hypothesis and level of significance for the research; the location where the Pilot study was conducted was not stated.

Another research conducted by Amoor (2009) on the topic "An Evaluation of Challenges of Secretarial Education programme in Nigeria universities between 2000 to 2009". The purpose of the study was to identify the modern office technology and information systems relevant for secretarial training, evaluates the availability of the modern office technologies for teaching/learning and examines the adequacy of the qualification of secretarial lecturers in Nigerian universities. A sample of 215 final year students and 38 lecturers were used as the sample population for the study. Questionnaire was the major instrument used for data collection; three (3) research questions and three (3) null hypotheses were stated which were all rejected at 0.05 level of significance. The study recommended that the universities' Management should establish a Resource Mobilization Centre that would be responsible for sourcing funds to purchase and install the modern office technology and information systems for teaching and learning.

The above study has the following shortcomings:

1. The distribution of the population according to each University was not given
2. There was no any sampling technique stated
3. The major findings of the study were not stated, only the rejected null hypotheses were given.

Despite the above stated shortcomings in the above study, it is quite instrumental to the current research in aspect of providing the current researcher with

a body of literature and a picture of what Secretarial programme is like at the University level in the country as regards the use of ICT.

Another research conducted by Ernest (2010) titled "Office Operational Skills Perceived as Necessary for Office Information Systems by Secretaries in University of Nigeria Nsukka". The purpose of the study was to ascertain the level of operational skills possessed by Secretaries for these office information systems. The population of the study was 110 secretaries in University of Nigeria, Nsukka. Four research questions were used. Questionnaire which was the instrument used for data collection was validated by experts. It was discovered that secretaries possess moderate operational skills in word and data processing and high level of operational skills in reprographic system. It was recommended that secretaries with low operational skills should upgrade their skill through in-service training to enable them remain relevant in their jobs.

The above study is relevant to the current research because it focused on operational skills in data processing which is related to ICT and its evaluation in the training and performance of Secretaries in our today's office. The author conducted a very good research but it was discovered that a null hypothesis was stated, but no level of significance was given which made it difficult to determine the authenticity of the outcome of the tested null hypothesis.

Oliver and Bernard (2010) conducted a study to assess the state of acquisition, availability and adequacy of ICT resources to support Business teacher education delivery in tertiary institutions in Adamawa State. A survey research design was adopted for the study, questionnaire was the instrument used for collecting data, a total of 38 respondents constituted the population of the study which included Business Teacher Educators, Managers of Business Teacher Education programmes

and Information Technology Managers drawn from the tertiary institutions. A test-retest reliability method was used to test the reliability of the instrument, three (3) research questions and two hypotheses were tested using the ANOVA statistic at 0.05 level of significance. The result from the test revealed significant differences in respect of difference of ICT resources in affected institutions.

In the course of reviewing the above research, it was discovered that the researcher investigated tertiary institution in Adamawa state but failed to use the students as part of population for the study which does not really give balance reportage on the topic in question, consequently there was no sampling technique for the study. It was also discovered that there is discrepancy in the total of the respondents as the abstract of the research carries a total of thirty-eight (38) while the body of the work carries a total of forty-two (42) respondents.

Despite the few lapses observed, the researcher agrees with the author's findings that institutions lack the needed ICT resources; no pedagogical considerations were given to curriculum in use; business teacher educators lack ICT cognate conceptual and technical skills. The author's recommendation such as, a called for collaborative effort by major stakeholders and in particular ICT-based multi-nationals to be more socially responsible by assisting institutions in the area of acquisition ICT resources is also supported.

The above research is relevant to the current research because it focused on the acquisition, availability and adequacy of ICT resources in tertiary institution. While the current research focuses on Influence of ICT applications on office education programme in the Federal Colleges of Education in North-Central Zone of Nigeria.

Maurison (2010) conducted a research titled "Problems in Business Education Research in ICT Era as Perceived by Business Educators. A sample of forty-two (42) business educators in tertiary institutions in Niger state was selected using a purposive sampling technique. The instrument for data collection was the questionnaire; while the analysis of data was done using the mean, standard deviation and the only hypothesis stated was tested using T-test, at a 0.05 level of significance was rejected. The result of the study revealed among others indicated lack of computer software facilities for handling research data analysis, poor quality of institutional environment for digital information storage and retrieval etc. In the course of the review, following lapses where observed:

1. the purpose of the study vis-à-vis the research questions and the null hypothesis were inadequate.
2. the research was conducted in Niger State but the location of the forty-two (42) sampled population was not indicated. Technically the distribution of the sample was not given.

Despite the fact that the researcher agrees with some of the submissions of the author and the lapses observed, his work is instrumental to the current one in the aspect of testing hypothesis using the t-test, which the current researcher will use as guide.

Onuagba (2011) conducted a research titled "Appraisal of the Implementation of Information Technology in Business Education Programme in four Federal Universities in Nigeria". The population sample comprises two hundred and forty (240) students and fifteen (15) lecturers from the Business Education Department of the four Universities. A simple random sampling technique was used for the students while the whole number of lecturers was used because they are not many. Four (4)

research questions were used and four (4) null hypotheses were stated and tested at 0.05 level of significance using t-test. Among the findings of the study was that available Information Technology materials and facilities were inadequate so much so that Information Technology related courses were taught theoretically. However among the shortcomings of this research is that the literature reviewed was scanty hence it did not give detailed explanation of most concepts, and there was no theoretical framework for the study.

The above research helped the current research by determining the level of implementation of ICT in Business Education in Nigerian Universities, which is very similar to the current research as the current research focus on the Influence of ICT applications on Office Education programme in the Federal Colleges of Education in North-Central Zone of Nigeria.

2.7 Summary of Reviewed Literature

Learning has been seen as acquiring knowledge or developing the ability to perform new behaviours. It is common to think of learning as something that takes place in school, but much of human learning occurs outside the classroom, and people continue to learn throughout their lives. This process could be explained through several theories, some of which include; behavioural, cognitive, constructivist, and social cognitive learning theories. Presently teachers make use of these theories in their classrooms in order to maximize the learning potential of students and also to create a better learning environment inside the classrooms.

Learning theorists emphasize the role of environmental influences in shaping the way a person develops. In their view, child development is guided by both deliberate and unintended learning experiences in the home, peer group, school, and

community. Therefore, childhood growth is significantly shaped by the efforts of parents, teachers, and others to socialize children in desirable ways. According to learning theories, the same principles that explain how people can use a bicycle or computer also explain how children acquire social skills, emotional self-control, reasoning strategies, and the physical skills of walking and running.

Business education has been seen as a broad and diverse discipline that is included in all types of educational delivery systems; primary, secondary, and post-secondary. It equally believes that the programme can begin at any level, it can be interrupted for varying periods of time, and it can be continued throughout the life span of an individual.

Office technology and management on the other hand was discussed as an integral part of business education, which is a programme of instruction aimed at developing skills, knowledge, and understanding that are necessary to facilitate business information, control and processing. Office technology and management makes significant influence on the nation's economy through the preparation of clerical workers for entry into the labour market.

Information and Communication Technology was also reviewed as the processing and distribution of data using computer hardware and software, telecommunications, and digital electronics. Information Storage and Retrieval, in computer science, is a term used to describe the organization, storage, location, and retrieval of encoded information in computer systems. Important factors in storing and retrieving information are the type of media, or storage device, used to store information; the media's storage capacity; the speed of access and information transfer to and from the storage media; the number of times new information can be written to the media; and how the media interacts with the computer.

It was also discussed that a change or innovation is an introduction of new ideas in an existing system or creation of new thing. Curriculum is ordinarily the planned learning experiences under the guidance of a school. Office technology and management curriculum could be seen as those planned learning experiences that are prepared under the guidance of a school, designed to prepare individuals to take business vocation in the areas of shorthand, typewriting, word processing, reprography etc.

From the foregoing, it can be observed that from the empirical studies reviewed so far, call was made for proper inclusion or embracing of ICT vis-a-vis implementation of ICT in Business Education in general, but none has stressed on the Influence of ICT Applications on Office Education programme which is the gap this current study has closed.

CHAPTER THREE
RESEARCH METHODOLOGY

This chapter explains the methodology that was used in the collection of data for the study under the following headings:

3.1 Research Design

3.2 Population of the Study

3.3 Sample Size and Sampling Procedure

3.4 Instrument for Data Collection

3.4.1 Validity of the Instrument

3.4.2 Pilot Study

3.4.3 Reliability of the Instrument

3.5 Procedure of Data Collection

3.6 Procedure of Data Analysis

3.1 Research Design

Descriptive survey research design was adopted for the study. This is because, according to Osuala (2001) when a survey centres on individuals and their opinions, belief, motivation and behaviour, the survey research method is most appropriate. Survey research design therefore, gives a remarkably accurate picture of a phenomenon.

3.2 Population of the Study

The population of the study comprised of 232 Office Technology and Management students (NCE 3 only) and eleven (11) lecturers of Business Education

Department in the three (3) States where Federal College of Education, are located. The breakdown is as shown in table 3.1.

Table 3.1: Population of the Study

Name of College	Students	Lecturers	Total
F.C.E Pankshin	110	4	114
F.C.E Okene	96	3	99
F.C.E. Kontagora	26	4	30
Total	**232**	**11**	**243**

Source: *Business Education Department of various Colleges (2012)*

3.3 Sample Population and Sampling Procedure

The sample for this study was one hundred and twenty nine (129) students of Office Technology and Management and eleven (11) lecturers. The sample selection was in accordance with the sample size chart of Krejcie and Morgan (1970). It is also in line with Mamman (2011) who postulated that 10% to 20% of the population can be used for a large population of students. For this study 50% of the students' population in F.C.E Pankshin and F.C.E. Okene and all the 26 students in F.C.E. Kontagora constituted the sample for the study, while all the lecturers of Office Education in the various Colleges (departments) were used because they were few in number. This is seen in table 3.2

Table 3.2 Sample Size for the study

Name of College	Students	Lecturers	Total
F.C.E Pankshin	55	4	59
F.C.E Okene	48	3	51
F.C.E. Kontagora	26	4	30
Total	**129**	**11**	**140**

Random sampling technique was used in selecting the sample. This allowed every subject of the population an equal chance of being included in the sample. The 'hat drawn' method was used in selecting the sample as it presented the respondents (students) in the research area equal opportunity of being selected. Yes or No was written on pieces of paper, folded and thrown into a nylon bag and shook properly. Each respondent (student) from each population was allowed to pick one. At the end, those that picked 'yes' were used as sample for the study, and were given the questionnaire to fill, while those that picked 'no' were exempted.

3.4 Instrument for Data Collection

The instrument for data collection was the questionnaire. According to Kerlinger (1978) questionnaire is the best instrument to gather data about the respondents' feeling, emotions and perception. Two separate sets of questionnaire though with same idea were administered to Students and Lecturers. Each set of questionnaire was divided into two sections 'A' which contained the personal data of the respondents and 'B' which contained the questions eliciting response to the stated research questions. The breakdown of the Section B part of the questionnaire shows that items 1- 10 provided answer to research question 1, items 11- 20 provided answer

to research question two, while items 21 – 30 provided answer to research question three and items 31- 40 provided answers to research question four.

A four point rating scale was used in weighing the questionnaire points as seen below:

Strongly Agree (SA)	4 points
Agree (A)	3 points
Disagree (D)	2 points
Strongly Disagree (SD)	1 point

3.4.1 Validity of the Instrument

Face validity of the instrument was obtained through the judgment of three experts in Business Education. The experts of Senior Lecturer and above were given draft copies of the instrument to read and correct. Their inputs and suggestions were incorporated in the final copies of the questionnaire that was used for the study. This is in line with Udoh (2002) that validation of content of research instrument by expert is an important and acceptable type of validity.

3.4.2 Pilot Study

Twenty (20) copies of the questionnaire were administered to Office technology and management students in the Federal College of Education (Technical) Bichi. The reason for the choice of F.C.E. (T) Bichi was because it is also a Federal College of Education hence using the same curriculum and same source of funding, but located in North-West Nigeria which is outside the scope of the current research. The Pilot study is meant to ascertain the clarity, authenticity or otherwise of the instrument. Based on the outcome of the pilot study, the instrument was further modified to take into consideration the adjustments where necessary.

3.4.3 Reliability of the Instrument

Split half method of reliability was used for testing the reliability of the instrument. Data collected from the pilot study were statistically analysed using Pearson Product Moment Correlation (PPMC). A reliability coefficient of 0.871 was obtained.

3.5 Procedure for Data Collection

The researcher obtained a letter of introduction from the Department of Vocation and Technical Education Ahmadu Bello University, Zaria. The researcher administered the questionnaire to the respondents. Services of two (2) research assistants were employed during the distribution of the questionnaire in the various colleges. The researcher and the research assistants supervised the questionnaire filling sessions and offered explanations where necessary. This was done within a time frame of two (2) days on visiting each of the selected colleges. Due to the distance of the colleges the whole exercise lasted for three (3) weeks. In other words one week per college.

3.6 Procedure for Data Analysis

Frequencies and percentages were used to analyse the bio-data of respondents, while mean and standard deviation were used to answer the four research questions. The null hypotheses were tested using independent t-test statistics at 0.05 level of significance. In the analysis, Strongly Agree and Agree was considered as Agree while strongly disagree and disagree was considered as Disagree.

The decision rule for the research question was that weighted mean scores of 2.50 and above were considered as Agree while weighted mean scores below 2.50

was considered as Disagree. The choice of 2.5 mean score was based on the average rating of the scale of 4, 3, 2, 1 calculated as (4+3+2+1 = 10/4 = 2.5). For the hypotheses, if the observed probability value is less than the fixed probability value, the null hypothesis was rejected, if otherwise the null hypothesis was retained.

CHAPTER FOUR
PRESENTATION AND ANALYSIS OF DATA

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:

4.1 Analyses of Demographic Variables of Respondents

4.2 Analyses of data to answer the Research Questions

4.3 Hypotheses Testing

4.4 Summary of major findings

4.5 Discussion of Findings

4.1 Analyses of Demographic Variables of Respondents

In this section, variables such as: Name of Institution, qualification, years of experience, membership of professional body and status of computer literacy of lecturers were analysed. Variables such as: Name of institution, age and gender of the students were also analysed with the view of topic "Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria". This summary of this is as presented in table 4.1.1 to 4.1.9.

Table 4.1 Distribution of lecturers by College

College	Frequency	Percentage (%)
FCE Kontagora	4	36.3
F.C.E. Okene	3	27.2
F.C.E. Pankshin	4	36.3
Total	**11**	**100**

Source: field survey (2013)

Table 4.1. revealed that 36.3% of the lecturers were from F.C.E. Kontagora, 27.2% o were from F.C.E. Okene, while 36.3% were from F.C.E. Pankshin.

Analysis of gender of Office Technology and Management Lecturers is as presented in table 4.2

Table 4.2 Distribution of Lecturers by Gender

Gender	Frequency	Percentage (%)
Male	6	54.5
Female	5	45.4
Total	11	100

Source: field survey (2013)

Table 4.2 revealed that 6 54.6% of the lecturers were male while 45.4% were females. This representation confirmed that males are more than female. This showed that male Lecturers were more than female lecturers.

Analysis of the Qualification of Office technology and management Lecturers is as presented in table 4.3.

Table 4.3: Distribution of Lecturers according to Highest Educational Qualification

Qualification	Frequency	Percentage (%)
PhD	01	9
M.Ed	01	9
M. Sc.	01	9
B.Ed	06	54.5
HND	02	18.1
Total	**11**	**100**

Source: field survey (2013)

Based on table 4.3 it can be seen that 01 of the respondents had a Doctoral degree (Ph.D), Master of Education (M. Ed) and Master of Science represented by (9%) respectively, while those with Bachelor of Education (B. Ed) were 06 represented by (54.5%). Also those with Higher National Diploma (HND) were 02 represented by

(18.1%). Based on the above, majority of the respondents had Bachelor of Education which indicated that they are professional teachers, but needs to further their education so as to improve the quality of teaching and learning of Office Education.

The analysis of the Office technology and management Lecturers years of experience is as presented in table 4.4.

Table 4.4: Distribution of Lecturers by Years of Experience

Years of Experience	Frequency	Percentage (%)
1-5 years	2	18.1
6-10 years	3	27.2
11-15 years	2	18.1
16-20 years	2	18.1
21 years and above	2	18.1
Total	**11**	**100**

Source: field survey (2013)

Table 4.1.4 showed that 2 respondents represented by 18.1% each have 1-5 years, 11-15 years and 21 years and above working experience respectively. While 3 respondents represented by 27.7% had 6-10 years working experience. By the above mentioned years of experience, most of the respondents are said to have adequate knowledge and experience on the Influence of ICT applications on Office Education programme.

The level of computer literacy of Office Technology and Management Lecturers in presented as seen in table 4.5

Table 4.5 Distribution of Lecturers by Level of Computer Literacy

Certificate of Computer Literacy	Frequency	Percentage (%)
Certificate in Computer Application (CCA)	11	100
Diploma in Computer Application	Nil	0
Certificate in IT Essentials	Nil	0
Certified Cisco Networking Academy (CCNA)	Nil	0
Others	Nil	0
Total	**11**	**100**

Source: field survey (2013)

Table 4.5 revealed that all the respondents 11 (100%) have Certificate in Computer Application (CCA). This implies that the respondents have some level of computer literacy that can effectively give useful information on this research.

Students distribution according to College is presented in table 4.6

Table 4.6 Distribution of Students by College

College	Frequency	Percentage (%)
FCE Kontagora	26	20.1
F.C.E. Okene	48	37.2
F.C.E. Pankshin	55	42.6
Total	**129**	**100**

Source: field survey (2013)

Table 4.6 indicates that 26(20.1%) of the students were from F.C.E. Kontagora, 48 (37.2%) of the students were from F.C.E. Okene while 55 (42.6%) of the students were from F.C.E. Pankshin. This is in lined with the sample size and also indicated that F.C.E. Pankshin has the largest sample size based on the population.

Age distribution of students is presented in as seen in table 4.7

Table 4.7 Distribution of Students by Age

Age Range	Frequency	Percentage (%)
18 – 25	55	42.6
26-30	48	37.2
31 and above	26	20.1
Total	**129**	**100**

Source: field survey (2013)

Table 4.7 revealed that 55 (42.6) of the students were within the age range of 18-25, while 48 (37.2) fell within the age of range of 26-30 and finally age range of 31 and above had 26 respondents represented by 20.1%. Based on the above it can be concluded that most of the respondents (students) are within 18-25 years of age.

The Gender distribution of the students is as presented in table 4.8

Table 4.8 Distribution of Students by Gender

Gender of Students	Frequency	Percentage (%)
Male	48	37.2
Female	81	62.7
Total	**129**	**100**

Source: field survey (2013)

Table 4.8 shows that out of a total of 129 students (respondents), 48 of them representing 37.2% were males while the 81 representing 62.7% were females. This representation confirmed the true position of the situation as Office Education is considered a course for women, a trend that can easily be noticed in all the Colleges where office technology and management is being offered. Though females are suitable for education because of their tender nature and ability to encourage the students during teaching and learning, the situation reflects gender imbalance in Office Education programme.

4.2 Answer to the Research Questions

Respondents' answers to the four research questions of the study were analysed in tables 4.2.1 to 4.2.4 while the details are as seen in appendix V.

4.2.1 Research Question One:

What types of ICTs are available for teaching and learning of Office Technology and Management Programme in Federal Colleges of Education in North-Central Zone of Nigeria?

The analysis of data to answer this research question one is presented in Table 4.9 as follows:

Table 4.9 Analysis of mean responses of lecturers and students regarding the types of ICTs that are available for Office Education Programme

S/N	Item Statement	Lecturers		Students			Decision
		$\overline{X}_L$	SD	$\overline{X}_S$	SD	$\overline{X}_t$	
1.	There is ICT laboratory in your department and is being utilized by Office Education Students.	3.27	0.79	2.74	1.02	3.01	Agree
2.	The available computers in the ICT laboratory commensurate with the number of students in the department.	1.45	0.52	2.19	0.98	1.82	Disagree
3.	Not All the available computers in the department are functional.	3.73	0.47	2.73	1.20	3.23	Agree
4.	Multi-media projectors are not available and used during computer lessons and ICT related subjects	2.73	1.27	3.16	0.93	2.95	Agree
5.	Digital photocopiers, facsimile, etc are available in the ICT Lab./model office for instructional purposes	1.55	0.52	2.01	0.88	1.78	Disagree
6.	Facilities such as interconnected computers are wired or connected to a central printer for printing classroom task and assignment in the ICT laboratory.	1.55	0.52	2.52	1.08	2.04	Disagree
7.	Electronic meeting facilities such as: E-presence, smart board, starboard etc are available in your department	1.55	0.52	2.09	0.85	1.82	Disagree
8.	There is internet connectivity with a very good broadband speed in your ICT laboratory	1.36	0.50	1.78	0.41	1.57	Disagree
9.	Routine maintenance of ICT facilities in the department is done as at when due	1.18	0.40	1.93	1.06	1.56	Disagree
10.	Most of the ICT facilities in the department are not functioning	3.73	0.47	2.66	1.06	3.20	Agree
	Aggregate mean score	**2.21**	**0.60**	**2.38**	**0.95**	**2.30**	Disagree

Source: Field survey (2013)

Table 4.9 revealed that lecturers agreed with a mean score of 3.27 and standard deviation 0.79 that there is ICT laboratory in their department and is being utilized by Office technology and management students. Students also agreed to this notion with mean value and standard deviation of 2.74 and 1.02 respectively. The agreement to item one by the respondents was shown by the total mean score of 3.01. Item two in the table had mean and standard deviation of 1.45 and 0.52 respectively, for lecturers

and 2.19 and 0.98 of mean and standard deviation respectively, for students. This clearly revealed that both students and lecturers disagreed with the notion that available computers in the ICT laboratory commensurate with the number of students in the department. This disagreement was also shown by a total mean of 1.82. Item three on the table revealed that lecturers agreed that not all the available computers in the department are functional with mean and standard deviation of 3.73 and 0.47 respectively. Students also agreed to this item, with mean and standard deviation of 2.73 and 1.20 respectively. The agreement was also confirmed by the total mean of 3.23.

Item 4 which stated that multi-media projectors are not available and used during computer lessons and ICT related subjects had a mean score and standard deviation of 2.73 and 1.27 respectively, for lecturers. It also had a mean and standard deviation of 3.16 and 0.93 respectively, for students. This gave a total mean of 2.95 which signified agreement to non availability and use of multi-media projectors in the research areas. Item 5 in the table above revealed that lecturers disagreed that digital photocopiers, facsimile, etc are available in the ICT Lab/model office for instructional purposes with a mean of 1.55 and standard deviation of 0.52. Students also disagreed to this item with a mean of 2.01 and standard deviation of 0.88. The total mean score for this item was 1.78 which signified disagreement. Responses to Item 6 revealed that lecturers disagreed with the mean and standard deviation of 1.55 and 0.52 respectively, that facilities such as interconnected computers are wired or connected to a central printer for printing classroom task and assignment in the ICT laboratory. On the contrary, students agreed to the item with mean and standard deviation of 2.52 and 1.08 respectively. The total mean score for this item was 2.04 which indicated disagreement.

Responding to item 7 lecturers disagreed with mean and standard deviation of 1.55 and 0.52 respectively, that electronic meeting facilities such as: E-presence, smart board, starboard etc are available in the department. Students also disagreed to this item with mean and standard deviation of 2.09 and 0.85 respectively. The total mean for this item was 1.82 which signified disagreement.

Responses to item 8 revealed a mean and standard deviation of 1.36 and 0.56 respectively, for lecturers and 1.78 and 0.41 of mean and standard deviation respectively, for students. This clearly revealed that both students and lecturers disagreed with the notion that there is internet connectivity with a very good broadband speed in the ICT laboratory. This disagreement was also shown by a total mean of 1.57. Item 9 in table revealed lecturers had mean and standard deviation of 1.18 and 0.40 respectively and students had 1.93 and 1.06 for mean and standard deviation respectively. This showed that the respondents disagreed that routine maintenance of ICT facilities in the department is done as at when due. This is confirmed by mean total mean of 1.56. Item 10 revealed that lecturers agreed with mean and standard deviation of 3.73 and 0.47 respectively, that most of the ICT facilities in the department are not functioning. The students also agreed to this item with a mean of 2.66 and standard deviation of 1.06. The item had a total mean of 3.20 which signified agreement.

On the overall, lecturers had aggregate mean and standard deviation of 2.21 and 0.60 respectively, and students had a mean of 2.38 and standard deviation of 0.95. The total mean was 2.30 which signified that both lecturers and students disagreed that most ICT facilities mentioned in the table are available and functional.

4.2.2 Research Question Two:

What is the influence of the use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria?

The analysis of data to answer this research question two is presented in Table 4.10 as follows:

Table 4.10 Analysis of mean responses of lecturers and students regarding the Influence of the use of ICT facilities on Office Education Programme

S/N	Item Statement	Lecturers		Students			Decision
		$\overline{X}_L$	SD	$\overline{X}_S$	SD	$\overline{X}_t$	
11.	Students of office option have access to internet facilities in the department.	1.45	0.69	1.07	0.26	1.26	Disagree
12.	Students only utilize the Internet facilities in the aspect of social networking such as: twitter, facebook, instergram, twoo etc.	1.55	0.52	2.14	0.92	1.85	Disagree
13.	Computer/secretarial courses are taught using ICT facilities.	1.73	0.47	2.25	0.79	1.99	Disagree
14.	Office Education students are well equipped to fit into today's modern office.	1.09	0.30	1.28	0.59	1.19	Disagree
15.	Office Education students can operate the computer and other ICT facilities proficiently.	2.00	1.18	1.95	0.97	1.98	Disagree
16.	The students are able to develop this skill through constant practice in the departmental ICT laboratory in a collaborative way.	3.73	0.90	3.07	1.06	3.40	Agree
17.	Students are exposed to introductory courses on internet use and general applications (basic word-processing, spreadsheets, presentations, databases, etc.)	2.27	1.01	2.17	0.88	2.22	Disagree
18.	ICT skill is a laudable assets to all Business Educators especially office education option.	3.91	0.30	3.78	0.42	3.85	Agree
19.	Students are competent in using computer to create, edit and print text materials.	1.55	0.52	2.17	0.87	1.86	Disagree
20.	Students can operate the multi-media projector and make presentations on power points through the use of multi-media projectors, smartboard etc.	1.73	0.47	1.95	0.92	1.84	Disagree
	Aggregate mean score	**2.10**	**0.64**	**2.18**	**0.77**	**2.14**	**Disagree**

Source: Field survey (2013)

Table 4.10 revealed that lecturers disagreed with a mean score of 1.45 and standard deviation 0.69 that students of office option have access to internet facilities in the department. Students also agreed to this notion with mean value and standard deviation of 1.07 and 0.26 respectively. The disagreement to item 11 by the respondents was shown by a total mean score of 1.26. Item twelve in the table had mean and standard deviation of 1.55 and 0.52 respectively, for lecturers and 2.14 and 0.92 of mean and standard deviation respectively, for students. This clearly revealed that both students and lecturers disagreed with the notion that students only utilize the Internet facilities in the aspect of social networking such as: twitter, facebook, instergram, twoo etc. This disagreement was also shown by a total mean of 1.85. Item 13 in the table above revealed that lecturers disagreed that computer/secretarial courses are taught using ICT facilities with mean and standard deviation of 1.73 and 0.47 respectively. Students also disagreed with this item with mean and standard deviation of 2.25 and 0.79 respectively. The disagreement was also confirmed by the total mean of 1.99.

Item 14 in the table revealed that lecturers had mean score and standard deviation of 1.09 and 0.30 respectively. It also had mean and standard deviation of 1.28 and 0.59 respectively, for students. This showed disagreement to the fact that office Education students are well equipped to fit into today's modern office. This gave a total mean of 1.19 which signified disagreement. Item 15 revealed that lecturers disagreed that office Education students can operate the computer and other ICT facilities proficiently with a mean of 2.00 and standard deviation of 1.18. Students also disagreed to this item with a mean of 1.95 and standard deviation of 0.97. The total mean score for this item was 1.98 which signified disagreement. Responses to Item 16 revealed that lecturers agreed with mean and standard deviation

of 3.73 and 0.90 respectively, that the students are able to develop ICT skills through constant practice in the departmental ICT laboratory in a collaborative way. In the same vein, students also agreed to the item with mean and standard deviation of 3.07 and 1.06 respectively. The total mean score for this item was 3.40 which indicated agreement.

Responding to item 17 lecturers disagreed with mean and standard deviation of 2.27 and 1.01 respectively, that students are exposed to introductory courses on internet use and general applications (basic word-processing, spreadsheets, power-point presentations, databases, etc.). Students also disagreed to this item with mean and standard deviation of 2.17 and 0.88 respectively. The total mean for this item was 2.22 which signified disagreement. Responses to item 18 revealed that both lecturers and students agreed to the item with a total mean score of 3.85 that ICT skill is a laudable assets to all Business Educators especially office education option. Their opinion was very close in this item with low variability of 0.12. Item 19 in table revealed that lecturers had mean and standard deviation of 1.55 and 0.52 respectively and students had 2.17 and 0.87 for mean and standard deviation respectively. This showed that the respondents disagreed with a total mean of 1.86 that students are competent in using computer to create, edit and print text materials. Item 20 revealed that lecturers disagreed with mean and standard deviation of 1.73 and 0.47 respectively, that students can operate the multi-media projector, smartboard etc. to make slide-presentations on power-point. Students also disagreed to this item with a mean of 1.95 and standard deviation of 0.92. The item had a total mean of 1.84 which signified disagreement.

On the overall, lecturers had aggregate mean and standard deviation of 2.10 and 0.64 respectively, and students had an aggregate mean of 2.18 and standard

deviation of 0.77. The total aggregate mean was 2.14 which signified that both lecturers and students disagreed. This indicated that the Influence of ICT Application on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria is very low in other words, it is of no influence.

4.2.3 Research Question Three:

How competent are the lecturers and students in the use of ICT facilities in Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria?

The analysis of data to answer this research question three (3) is presented in Table 4.11 as follows:

Table 4.11 Analysis of mean responses of lecturers and students regarding the competency of the lecturers and students in the use of ICT facilities on Office Education Programme

S/N	Item Statement	Lecturers		Students			Decision
		$\overline{X}_L$	SD	$\overline{X}_S$	SD	$\overline{X}_t$	
21.	Use of ICT in teaching and learning is essential to prepare students to live and work in the 21st century.	4.00	0.00	3.77	0.42	3.89	Agree
22.	The lecturers of office education are adequate and very proficient in handling and teaching ICT related courses.	2.27	1.10	1.95	0.90	2.11	Disagree
23.	Capacity building workshop is organized for lecturers to update their knowledge on handling and using modern ICT tools.	1.55	0.52	1.88	0.92	1.72	Disagree
24.	Lecturers are exposed to training on learning applications (tutorials, simulations, etc.) Multimedia (using digital video, audio facilities, etc.).	1.73	0.47	2.24	0.82	1.99	Disagree
25.	Most lecturers have e-mail addresses and use it effectively in teaching and learning (mobile learning).	1.82	0.40	1.88	1.00	1.85	Disagree
26.	Lecturers attain workshop on advanced computer applications (advanced word-processing, complex relational databases, Virtual Learning Environment etc.)	1.45	0.52	1.88	0.94	1.67	Disagree
27.	Lecturers use facilities such as multimedia projectors, starboards etc. during lecture.	1.82	0.75	1.91	0.98	1.87	Disagree
28.	There is a computer specialist in the department as provided in the NCCE minimum standard.	3.55	0.52	3.03	1.00	3.29	Agree
29.	Department invites lecturers from other department say Computer science or GSE to teach computer courses in the department.	2.36	0.67	2.16	0.94	2.26	Disagree
30.	Office option lecturers without computer skills make effort on their own to attend computers courses such CCA, IT essentials, CCNA with training institutions.	2.36	1.21	2.41	1.07	2.39	Disagree
	Aggregate mean score	**2.29**	**0.62**	**2.31**	**0.90**	**2.30**	**Disagree**

Source: Field survey (2013)

Item 21 in Table 4.11 which stated that use o ICT in teaching and learning is essential to prepare students to live and work in the 21st century had mean score and standard deviation of 4.00 and 0.00 respectively, for lecturers. It also had a mean and standard deviation of 3.77 and 0.42 respectively, for students. This gave a total mean of 3.89 which signified agreement. Item 22 revealed that lecturers disagreed that the lecturers of office education are adequate and very proficient in handling and teaching ICT related courses with a mean of 2.27 and standard deviation of 1.10. Students also disagreed to this item with a mean of 1.95 and standard deviation of 0.90. The total mean score for this item was 2.11 which signified disagreement. Responses to Item 23 revealed that lecturers disagreed with mean and standard deviation of 1.55 and 0.52 respectively, that capacity building workshop is organized for lecturers to update their knowledge on handling and using modern ICT tools. In the same vein, students disagreed with the item with mean and standard deviation of 1.88 and 0.92 respectively. The total mean score for this item was 1.72 which indicated disagreement.

Responding to item 24 lecturers disagreed with mean and standard deviation of 1.73 and 0.47 respectively, that lecturers are exposed to training on learning applications (tutorials, simulations, etc.) Multimedia (using digital video, audio facilities, etc.). Students also disagreed to this item with mean and standard deviation of 2.24 and 0.82 respectively. The total mean for this item was 1.99 which signified disagreement. Responses to item 25 revealed both lecturers and students disagreed with a total mean score of 1.85 that most lecturers have e-mail addresses and use it effectively in teaching and learning (mobile learning). Their opinion was very close in this item with low variability of 0.60. Item 26 in table 3 revealed lecturers had mean and standard deviation of 1.45 and 0.52 respectively, and students had 1.88 and 0.94

for mean and standard deviation respectively. This showed that the respondents disagreed that lecturers attain workshop on computer applications (advanced word-processing, mobile learning, Virtual Learning Environment etc.). Item 27 revealed that lecturers disagreed with mean and standard deviation of 1.82and 0.75 respectively, that lecturers use facilities such as multimedia projectors, starboards etc. during lecture. Students also disagreed to this item with a mean of 1.91 and standard deviation of 0.98. The item had a total mean of 1.87 which signified disagreement.

Item 28 in Table 4.11 revealed that lecturers agreed with a mean score of 3.55 and standard deviation 0.52 that there is a computer specialist in the department as provided in the NCCE minimum standard. Students also agreed to this notion with mean value and standard deviation of 3.03 and 1.00 respectively. The agreement to this item by both respondents was shown by the total mean score of 3.29. Item 29 in the table had mean and standard deviation of 2.36 and 0.67 respectively, for lecturers and 2.16 and 0.94 of mean and standard deviation respectively, for students. This clearly revealed that both students and lecturers disagreed with the notion that the department invites lecturers from other department say Computer science or GSE to teach computer courses in the department. This disagreement was also shown by a total mean of 2.26. Item 30 revealed that lecturers disagreed that office option lecturers without computer skills make effort on their own to attend computers courses such CCA, IT essentials, CCNA with private training institutions with mean and standard deviation of 2.36 and 1.21 respectively. Students also disagreed to this item with mean and standard deviation of 2.41 and 1.07 respectively. The disagreement was also confirmed by a total mean of 2.39.

On the overall, lecturers had aggregate mean and standard deviation of 2.29 and 0.62 respectively, and students had a mean of 2.31 and standard deviation of 0.90.

The total aggregate mean was 2.30 which signified that both lecturers and students disagreed which implied that lecturers are not competent in the use of ICT Application on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.

4.2.4 Research Question Four:

What are the challenges faced by OTM students in the use of ICT facilities in Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria?

The analysis of data to answer this research question four is presented in Table 4.12 as follows:

Table 4.12 Analysis of mean responses of lecturers and students regarding the challenges of the use of ICT facilities on Office Education Programme

S/N	Item Statement	Lecturers		Students			Decision
		$\overline{X}_L$	SD	$\overline{X}_S$	SD	$\overline{X}_t$	
31.	The TETFUND has come to the aid of the department by providing ICT Laboratory which is properly utilized.	1.45	0.52	1.88	0.88	1.67	Disagree
32.	College management diverts funds meant for upgrading the ICT facilities to other functions.	2.18	1.08	2.31	0.98	2.25	Disagree
33.	There is special allocation of funds for ICT development in College.	3.45	0.52	3.30	1.03	3.38	Agree
34.	National Communication Council donates enough computers for the department	1.91	1.04	1.93	0.91	1.92	Disagree
35.	Lack of electric power impedes effective use of ICT in teaching and learning.	4.00	0.00	3.62	0.49	3.81	Agree
36.	Inadequate content/material for teaching and learning ICT is one of the major factors that hinder effective use of ICT in teaching and learning.	3.55	0.52	3.04	0.95	3.30	Agree
37.	Most Lecturers do not favour the use of ICT in teaching and learning.	3.64	0.50	3.25	1.24	3.45	Agree
38.	There are insufficient technical support staff to assist the students in the laboratory during practice hours.	1.55	0.52	1.62	0.99	1.59	Agree
39.	Timetabling difficulties and the need for teachers to change their pedagogy, hinders effective use of ICT on teaching and learning of office education	3.36	0.50	3.05	0.98	3.21	Agree
40.	Using ICT in teaching and learning of office education is a priority in our College.	1.73	0.47	1.78	0.98	1.76	Disagree
	Aggregate mean score	**2.68**	**0.57**	**2.58**	**0.94**	**2.63**	**Agree**

Source: Field survey (2013)

Table 4.12 revealed that lecturers disagreed with a mean score of 1.45 and standard deviation 0.52 that TETFUND has come to the aid of the department by providing ICT Laboratory which is properly utilized. Students also disagreed to this notion with a mean value and standard deviation of 1.88 and 0.88 respectively. The disagreement

to this item by the respondents was shown by a total mean score of 1.67. Item 32 in the table had mean and standard deviation of 2.18 and 1.08 respectively, for lecturers and 2.31 and 0.98 of mean and standard deviation respectively, for students. This clearly revealed that both students and lecturers disagreed with the notion that College Management diverts funds meant for upgrading the ICT facilities to other functions. This disagreement was also shown by a total mean of 2.25. The table revealed for item 33 that lecturers agreed that there is special allocation of funds for ICT development in college with mean and standard deviation of 3.45 and 0.52 respectively. Students also agreed to this item with mean and standard deviation of 3.30 and 1.03 respectively. The agreement was also confirmed by the total mean of 3.38.

Item 34 in the table revealed that lecturers had mean score and standard deviation of 1.91 and 1.04 respectively. The item had mean and standard deviation of 1.93 and 0.91 respectively, for students. This showed disagreement to the fact that National Communication Council donates enough computers to the department. This gave a total mean of 1.92 which signified disagreement. Item 35 revealed that lecturers agreed that lack of electric power impedes effective use of ICT in teaching and learning with a mean of 4.00 and standard deviation of 0.00. Students also agreed to this item with a mean of 3.62 and standard deviation of 0.49. The total mean score for this item was 3.81 which signified agreement. Responses to Item 36 revealed that lecturers agreed with mean and standard deviation of 3.55 and 0.52 respectively, that inadequate content/material for teaching and learning ICT is one of the major factors that hinder effective use of ICT in teaching and learning. In the same vein, students also agreed to the item with mean and standard deviation of 3.04 and 0.95 respectively. The total mean score for this item was 3.30 which indicated agreement.

Responding to item 37 lecturers agreed with mean and standard deviation of 3.64 and 0.50 respectively, that most lecturers do not favour the use of ICT in teaching and learning. Students also agreed to this item with mean and standard deviation of 3.25 and 1.24 respectively. The total mean for this item was 3.45 which signified agreement. Responses to item 38 revealed that both lecturers and students disagreed to the item with a total mean score of 1.59 that there is sufficient technical support staff to assist the students in the laboratory during practice hours. Their opinion was very close in this item with low variability of 0.47. Item 39 in table 4.12 revealed that lecturers had mean and standard deviation of 3.36 and 0.50 respectively and students had 3.05 and 0.98 for mean and standard deviation respectively. This showed that the respondents agreed that timetabling difficulties and the need for teachers to change their pedagogy, hinders effective use of ICT on teaching and learning of OTM. Item 40 revealed that lecturers disagreed with mean and standard deviation of 1.73 and 0.47 respectively, that using ICT in teaching and learning of office education is a priority in our College. Students also disagreed to this item with a mean of 1.78 and standard deviation of 0.98. The item had a total mean of 1.76 which signified disagreement.

On the overall, lecturers had aggregate mean and standard deviation of 2.68 and 0.57 respectively, and students had a mean of 2.58 and standard deviation of 0.94. The total aggregate mean was 2.63 which signified that both lecturers and students agreed that all the constructs in Table 4.12 constitute challenges in the use of ICT Application on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria.

4.3 Hypotheses Testing

The four null hypotheses of the study were tested using independent t-test to find the significance difference between the mean responses of lecturers and students. The null hypotheses were tested at 0.05 level of significance. The summary of the test of hypotheses are presented in tables 4.13 to 4.16 as follows:

4.3.1 Hypothesis One (Ho_1)

> *There is no significant difference between the mean ratings of students and lecturers regarding the availability of modern ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.*

The summary of the result of independent t-test on null hypothesis one (1) is as give in Table 4.13 as follows:

Table 4.13 Independent t-test result of lecturers and students mean ratings regarding the availability of ICT facilities on Office Education Programme

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Lecturers	11	23.81	3.11				
				1.80	138	0.073	NS*
Students	129	22.09	1.64				

*Not significant at 0.05 *Source: field survey (2013)*

The above table revealed that the calculated value of t was 1.80 and observed p-value of 0.073 was greater than the fixed p-value of 0.05. This therefore indicated that the null hypothesis that states that there is no significant difference between the mean ratings of students and lecturers regarding the availability of modern ICT

facilities in Office education programme in the various Colleges of Education was retained.

This implied that lecturers and students do not differ in their opinions on the availability of modern ICT facilities in teaching and learning of Office education programme. This means that most of the modern ICT facilities are not available and the few that are available are not functional.

4.3.2 Hypothesis Two (Ho_2)

There is no significant difference between the mean ratings of students and lecturers regarding the influence of use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.

The summary of the result of independent t-test on null hypothesis two (2) is as given in Table 4.14 as follows:

Table 4.14 Independent t-test result of lecturers and students mean ratings regarding the influence of the use of ICT facilities on Office Education Programme

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Lecturers	11	21.00	2.32				
				1.17	138	0.244	NS*
Students	129	21.82	2.23				

*Not Significant at 0.05 *Source: field survey (2013)*

The above table revealed that the calculated value of t was 1.17 and observed p-value of 0.244 was greater than the fixed p-value of 0.05. This therefore indicated that the null hypothesis that states that there is no significant difference between the mean ratings of students and lecturers regarding the effective use of ICT facilities in

teaching and learning of Office Education programme in the various Colleges of Education was retained.

This implied that lecturers and students do not differ in their opinions regarding the level of effects of use of ICT facilities in teaching and learning of Office technology and management. In other words, this means that ICT facilities are not effectively (properly) used in teaching and learning of Office Education programme in the various Colleges of Education.

4.3.3 Hypothesis Three (Ho_3)

> *There is no significant difference between the mean responses of students and lecturers regarding the competency of lecturers and students in the use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.*

The summary of the result of independent t-test on null hypothesis three (3) is as given in Table 4.15 as follows:

Table 4.15 Independent t-test result of lecturer and students mean responses regarding the competency of lecturers and students in the use of ICT facilities on Office Education programme

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Lecturers	11	22.91	3.18				
				0.17	138	0.862	NS*
Students	129	23.12	3.85				

*Not Significant at 0.05 *Source: field survey (2013)*

The above table revealed that the calculated value of t was 0.17 and observed p-value of 0.862 was greater than the fixed p-value of 0.05. This therefore indicated that the null hypothesis which states that there is no significant difference between the

mean responses of students and lecturers regarding the level of competency of lecturers and students in the use of ICT facilities in Office Education programme in the various Colleges of Education was retained.

This implied that lecturers and students do not differ in their responses regarding the level of adequacy and competency of lecturers in the use of ICT facilities in Teaching and Learning of Office Education programme. This means that there are no adequate lecturers in Office Education Option and the ones on ground are not competent enough on the use ICT.

4.3.4 Hypothesis Four (Ho_4)

There is no significant difference between the mean responses of students and lecturers regarding the challenges faced by OTM students in the use of ICT facilities on Office Education Programme in Federal Colleges of Education in North-Central Zone of Nigeria.

The summary of the result of independent t-test on null hypothesis four (4) is as given in Table 4.16 as follows:

Table 4.16 Independent t-test result of lecturers and students mean responses regarding the challenges face in the use ICT application in Office Education Programme

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Lecturers	11	26.82	4.09				
				1.80	138	0.074	NS*
Students	129	25.78	1.53				

*Not Significant at 0.05 *Source: field survey (2013)*

The above table revealed that the calculated value of t was 1.80 and observed p-value of 0.074 was greater than the fixed p-value of 0.05. This therefore indicated

that the null hypothesis which states that there is no significant difference between the mean responses of students and lecturers regarding the challenges of the use of ICT facilities in Office Education programme in the Federal Colleges of Education in North-Central State was retained.

This implied that lecturers and students do not differ in their responses regarding the challenges of use of ICT facilities in Office Education programme. This means both lecturers and students agreed that most of the constructs in Table 4.16 constitute challenges of the use of ICT facilities in of Office technology and management.

4.4 Summary of Major Findings

The study established that:

i. lecturers and students do not differ in their opinions on the none availability of modern ICT facilities in Office education programme in Federal colleges of Education in North-central zone of Nigeria (p=0.073).

ii. lecturers and students do not differ in their opinions regarding the less influence of use of ICT facilities in Office education programme in Federal colleges of Education in North-central zone of Nigeria (p=0.24)

iii. lecturers and students do not differ in their responses regarding the low level of competency of lecturers and students in the use of ICT facilities in Office Education programme in Federal colleges of Education in North-central zone of Nigeria (p=0.86).

iv. that there is no significant difference between the mean responses of students and lecturers regarding the challenges of the use of ICT facilities in Office

Education programme in Federal colleges of Education in North-central zone of Nigeria (p=0.074).

4.5 Discussion of Major Findings

Based on analysis of Research Question one, the study found that modern ICT facilities were not adequate. This means that office education programme in dire need of modern ICT facilities for effective teaching and learning as confirmed by an aggregate mean of 2.30 for both students and lecturers. This was further confirmed by the result of the hypothesis one which shows that lecturers and students do not differ in their opinions on the availability and functionality of modern ICT facilities in Teaching and Learning of Office Education programme.

It is clear from the study that the available computers in the ICT laboratory are not commensurate with the number of students in the department. This finding supports the earlier position of Shettima (2012) who observed that office education lack relevant ICT facilities that are needed for 21st century teaching and learning. Digital photocopiers, facsimile, multi-media projector are not available in the ICT Lab./model office for instructional purposes, there is no internet connectivity with a very good broadband speed in the ICT laboratory, lack of these basic facilities make learning to be very difficult. In line with this Adebayo (2006) opined that there are some problems that must be urgently looked into, for ICT to be sustained in order to play its proper role in the education sector; this includes making the necessary ICT facilities available for schools. It is really a thing of concern to note that the ICT facilities that are lacking in the Colleges, have infiltrated the world of work.

The study also revealed that most of the available facilities were not functional. It is sad to say that the few ICT facilities that were purchased cannot be maintained. To this end lecturers and students disagreed that routine maintenance of ICT facilities in Office

education programme are done as at when due. This finding coincides with UNESCO (2005) who observed that one of the problems of integrating ICT in education is lack of maintenance as the supplied facilities do not last.

From the analysis of Research Question two (2), the study also found that effective use of ICT facilities is not being made in teaching and learning of Office Education programme. Students of OTM have no access to internet facilities in the department and that computer/OTM courses are not taught using modern ICT facilities. Since ICT facilities are not effectively utilized in the teaching and learning of Office technology and management, OTM students cannot demonstrate skills in computer to meet up with demands of the present world of work. This is based on the aggregate mean of 2.14 which signified that both lecturers and students disagreed on the effective use of ICT in Office Education programme.

This position is also supported by the result of the test of null hypothesis two which was retained implying that lecturers and students do not differ in their opinions regarding the level of the use of ICT in office education programme. This finding corroborates the findings of Komolafe (2005) who asserted that poor usage of ICT in teaching and learning affects students negatively. In line with this finding also, Olowo (2000) stated that one of the reasons why ICT is not effectively utilized in the teaching and learning of office education, is that, the curriculum has painted typewriting and shorthand as the "only" core subjects of secretarial/ business education as though they are the only subjects that run throughout the 3 year program.

The curriculum of OTM had no much space for ICT courses and this may be one of the responsible factors why ICT is not effectively used Office Education programme. This supports the assertion by Nwosu (1999) who stated that ICT has not been given adequate space and timing in Office Education programme curriculum.

Analysis of Research Question three revealed that Office technology and management lecturers are inadequate and incompetent in the use of ICT facilities in Office Education programme, this is evident by the aggregate mean score of 2.30 which fell within the rejection decision. This was also confirmed by the retention of null hypothesis three (3) which indicated that there is no significant difference between the mean responses of students and lecturers regarding the level of adequacy and competency of lecturers in the use of ICT facilities in Office Education programme. This implied that the manpower needed for effective teaching and learning of office education is lacking. Most of the available lecturers are incompetent in the use of ICT applications in office education programme because most lecturers themselves have no training on ICT skills and applications.

This finding supports UNESCO (2005) which commented that the use of ICT in teaching and learning remains only partially understood and inconsistently practiced in schools majorly because of lack of confidence of teachers in using ICT. Lecturers lack ICT skills and as such they cannot impart it on the learners because it is what you have that you can give. In line with this, Becker (2001) noted that teachers' expertise in ICT was an important factor in its successful use in lessons: The ways that teachers have their students use computers are certainly affected by their own level of technical expertise. This is no surprise any longer that office education students cannot acquire much needed ICT skills because their teachers too have no skills in ICT.

It is also clear from the study that lecturers are not exposed to training on learning applications (tutorials, simulations, etc.), multimedia (smartboard, e-presence, using digital video, audio facilities, etc.) and workshop on advanced computer applications (advanced word-processing, mobile learning, Virtual Learning

Environment etc.). The unfortunate aspect is that OTM lecturers without computer skills do not make effort on their own to attend computers courses such CCA, IT essentials, CCNA etc. with training institutions. However, Bonnett, *et' al* (1999) in a research on use of multimedia software observed that some of the teachers commented that using ICT was no different from traditional methods in supporting the subject-learning objectives and probably that is why some of the lecturers are not willing to be computer literate. This can also been linked to the fear of new challenges posed by the ICT age where the new generation refer to old generation lecturers without ICT skills as 'Born Before Computer (BBC)'.

The analysis of Research Question four of the study also found that a lot of factors constitute challenges of effective use of ICT facilities in Office Education programme. This is as seen in the aggregate mean of 2.63 which the lecturers and the students agreed that all the constructs mentioned constitute challenges for effective use of ICT in teaching and learning. Furthermore, the null hypothesis four (4) which stated that there is no significant difference between the mean responses of students and lecturers regarding the challenges of effective use of ICT in teaching and learning of office education programme was retained. From the study, it was clear that lack of electric power impedes effective use of ICT in teaching and learning, inadequate content/material for teaching and learning ICT is one of the major factors that hinders effective use of ICT in teaching and learning, most Lecturers do not favour the use of ICT in teaching and learning, timetabling difficulties and the need for teachers to change their pedagogy, hinders effective use of ICT on teaching and learning of Office Education programme and the fact that at some quotas, funds meant for developing and upgrading ICT facilities in the College are divert to other functions

are at the fore front of the challenges impeding the effective use of ICT facilities in teaching and learning of Office Education programme.

The above finding coincides with UNESCO (2005), which stated that ICT hardware and software were initially designed and developed for non-educational purposes and are thus poorly fitted physically for ordinary classrooms, especially in elementary schools. Available computers often do not work, which is aggravated by lack of maintenance support and inadequate software. This low and unreliable access to technology means that students do not get enough experience to master complex software tools, and teachers cannot assign tasks that assume ready computer availability. In line with this, Umoru (2012) found that lack of skills and competencies are barriers to the use of ICT.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study delved into the Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria. In order to achieve the objective of the study, four specific objectives were raised which included, to identify the availability of modern ICT facilities in Office Education programme in the Federal Colleges of Education in North-Central zone of Nigeria; determine the influence of the use of ICT facilities in Office Education in the Federal Colleges of Education in North-Central Zone of Nigeria; ascertain the competency of lecturers in the use ICT facilities in Office Education programme in the Federal Colleges of Education in North-central zone of Nigeria and to identify the challenges faced in the use of ICT facilities in Office Education programme in the Federal Colleges of Education in North-Central zone of Nigeria.

In line with these objectives, four research questions were raised to guide the study and also four hypotheses were formulated. Descriptive survey research design was used for the study. The total population for the study were 243 students and 11 lecturers, out of which 129 students were sampled. There was no sampling for the lecturers because of their limited number. Structured questionnaire was used to gather data from the respondents. The data collected were presented in tables and research questions were analysed using mean and standard deviation. The null hypotheses were tested using independent t-test at 0.05 level of significance. The summary of the major findings were:

1. modern ICT facilities are not available in Office Education programme in the Federal Colleges of Education in North Central Zone of Nigeria.
2. the influence of the use of ICT facilities in Office Education programme has not been felt as desired in the Federal Colleges of Education in North Central Zone of Nigeria.
3. students and lecturers are incompetent in the use of ICT facilities in Office Education programme in the Federal Colleges of Education in North Central Zone of Nigeria.
4. Students and lecturers face many challenges in the use of ICT facilities in Office Education Programme in the Federal Colleges of Education in North Central Zone of Nigeria.

5.2 Conclusion

Based on the findings of this research, it is concluded that students of Office Technology and Management in the Federal Colleges of Education do not have adequate knowledge, skill, attitude and competencies in ICT needed for survival in a globalized economy. This further implied that Federal Colleges of Education in North Central Zone that do not embrace the use of new technologies as reflected in the minimum standard (curriculum) would certainly not be preparing their students for life in the twenty-first century office.

5.3 Recommendations

Based on the findings and conclusion of the study, the following recommendations are made:

1. government both Federal and State, TETFUND and Stakeholders should provide relevant and modern ICT facilities for effective teaching and learning of Office Education so as to get the much desired manpower to man the modern day office that is driven by ICT. This can be done through supply of new modern ICT facilities in Office education programme, also management, lecturers and students should maintain the available ICT facilities in the departments servicing and repairs of faulty facilities as at when due, covering them after use, for effective teaching and learning of office education in Business Education department.
2. lecturers and students should be encouraged to use the available ICT facilities in a positive way so as to acquire the desired skills that will make them gainfully employed or self-reliant.
3. Students should be encouraged to enrol into private computer training with computer institutes in order to compliment the effort of the Colleges and Lecturers so as to attain the needed competency in ICT applications.
4. the challenges hindering the effective use of ICT in Office Education programme should be addressed by government, College of Education authorities and the lecturers so that Colleges of Education would be repositioned to play its role in empowering students with skills and competencies needed for Nigeria's development. Stakeholders by way of social responsibility should ensure that computers are supplied in the laboratory, light should be provided and ensuring that there are sufficient technical support staff in the laboratory to guide and control the activities of the students while in the laboratory.

5.4 Suggestion for further Study

It is suggested that further study can be carried out on the same area in other zones of the Federation and in the following areas:

1. ICT applications literacy and job performance of Confidential Secretaries in Federal Colleges of Education in North Central Zone.
2. Effect of ICT on Entrepreneurship Opportunities among Business Centre Owners in Jos Metropolis of Plateau State Nigeria.
3. Effects of Computer Game on job performance among confidential Secretaries in Public Offices in Plateau State Nigeria.

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APPENDIX I

DEPARTMENT OF VOCATIONAL & TECHNICAL EDUCATION
AHMADU BELLO UNIVERSITY, ZARIA NIGERIA
FACULTY OF EDUCATION

Telephone: **069-51755, 50692**
Vice Chancellor: **Professor. Abdullahi Mustapha B.Sc. (Hons) Pharm(ABU), Ph.D (London) FPSN**
Head of Department : **Professor A.A Udoh B.Ed. (Hons) Nsukka M.Ed. & Ph.D Bus Edu. (ABU)**

*Your Ref:*_____

Our Ref: M.ED/EDUC/1273/2010-2011

Date: 11th September, 2013

Letter of Introduction

DEKOM HABILA- M.ED/EDUC/1273/2010-2011

This is to certify that the above mentioned name is a Postgraduate student (M.Ed Business Education) in the Department of Vocational and Technical Education, Ahmadu Bello University, Zaria, carrying out a research topic: ***Impact of ICT on Office Education Programme in Federal Colleges of Education in North Central Geo-Political, Zone, Nigeria.***

Please, kindly give him every assistance he may require

DEPT. OF VOC. & TECH. EDUCA... HEAD DEPT DATE A.B.U ZARIA

Professor A.A. Udoh
HEAD OF DEPARTMENT

APPENDIX II

Department of Vocational and Technical Education,
Faculty of Education,
Ahmadu Bello University,
Zaria.
September, 2013

Dear Respondent,

Letter to Respondents

I am a Postgraduate student in the above mentioned institution, carrying out a research on the topic ***Influence of Information and Communication Technology Applications on Office Education Programme in the Federal Colleges of Education in North-Central Zone of Nigeria.*** I shall be very pleased, if you will provide answers to this questionnaire.

I assure you that any information given shall be used for this research work alone and shall be given all confidentiality it deserves.

Thanks for your understanding.

Yours faithfully,

Dekom Habila Bako
(M.ED./EDUC/1273/2010-2011)

APPENDIX III

Questionnaire for Office Technology and Management Students

Please tick ( ) where applicable.

SECTION A: PERSONAL DATA

1. Name of School:.....
2. Age: 18-25 ( ) 26 – 30 ( ) 31 above ( )
3. Gender : Male ( ) Female ( )

SECTION B: QUESTIONNAIRE ITEMS

Instruction: Please tick (letters) your opinion in the columns provided. As shown below:

SA - Strongly Agree A - Agree

SD - Strongly Disagree D - Disagree

S/NO RESEARCH QUESTION ONE	WHAT TYPES OF ICTS ARE AVAILABLE FOR TEACHING AND LEARNING OF OFFICE TECHNOLOGY AND MANAGEMENT PROGRAMME IN FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA?	SA	A	SD	D
1.	There is ICT laboratory in your department and is being utilized by Office Education Students				
2.	The available computers in the ICT laboratory commensurate with the number of students in the department				
3.	Not All the available computers in the department are functional.				
4.	Multi-media projectors are not available and used during computer lessons and ICT related subjects in the department				
5.	Digital photocopiers, facsimile, etc are available in the ICT Lab./model office for instructional purposes in the department				
6.	Facilities such as interconnected computers, are wired or connected to a central printer for printing classroom task and assignment in the ICT laboratory in the department				
7.	Electronic meeting facilities such as: E-presence, smartboard, starboard are available in your department				
8.	There is internet connectivity with a very good broadband speed in your ICT laboratory				
9.	Routine maintenance of ICT facilities in the department is done as at when due				
10.	Most of the ICT facilities in the department are not functioning				

RESEARCH QUESTION TWO	WHAT IS THE INFLUENCE OF THE USE OF ICT FACILITIES ON OFFICE EDUCATION PROGRAMME IN FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA?	SA	A	SD	D
11.	Students of office option have access to internet facilities in the department.				
12.	Students only utilize the Internet facilities in the aspect of social networking such as: twitter, facebook, instergram, twoo etc.				
13.	Computer/secretarial courses are taught using ICT facilities.				
14.	Office Education students are well equipped to fit into today's modern office.				
15.	Office Education students can operate the computer and other ICT facilities proficiently				
16.	The students are able to develop ICT skill through constant practice in the departmental ICT laboratory in a collaborative way				
17.	Students are exposed to introductory courses on internet use and general applications (basic word-processing, spreadsheets, presentations, databases, etc.)				
18.	ICT skill is a laudable assets to all Business Educators especially office education option.				
19.	Students are competent in using computer to create, edit and print text materials				
20.	Students can operate the multi-media projector and make presentations on power points through the use of interactive whiteboard, or smartboard				
RESEARCH QUESTION THREE	**HOW COMPETENT ARE THE LECTURERS AND STUDENTS IN THE USE OF ICT FACILITIES IN OFFICE EDUCATION PROGRAMME IN FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA?**	**SA**	**A**	**SD**	**D**
21.	use of ICT in teaching and learning is essential to prepare students to live and work in the 21st century				
22.	The lecturers of office education are adequate and very proficient in handling and teaching ICT related courses				
23.	Capacity building workshop is organized for lecturers to update their knowledge of handling and using modern ICT tools				
24.	Lecturers are exposed to training on learning applications (tutorials, simulations, etc.) Multimedia (using digital video, audio facilities, etc.)				
25.	Most lecturers have e-mail addresses and use it for teaching and learning (mobile learning)				
26.	Lecturers attain workshop on advanced computer applications (advanced word-processing, mobile learning, Virtual Learning Environment etc.)				
27.	Lecturers use facilities such as multimedia projectors, starboards etc. during lecture.				
28.	There is a computer specialist in the department as provided in the NCCE minimum standard for proper				

	instruction.				
29.	Department invites lecturers from other department say Computer science or GSE to teach computer courses in the department				
30.	Office option lecturers without computer skills make effort on their own to attend computers courses such CCA, IT essentials, CCNA with training institutions.				
RESEARCH QUESTION FOUR	**WHAT ARE THE CHALLENGES FACED BY OTM STUDENTS IN THE USE OF ICT FACILITIES IN OFFICE EDUCATION PROGRAMME IN FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA?**	**SA**	**A**	**SD**	**D**
31.	The TETFUND has come to the aid of the department by providing ICT Laboratory which is properly utilized.				
32.	Your College management diverts funds meant for upgrading the ICT facilities to other functions				
33.	There is special allocation of funds for ICT development in College				
34.	National Communication Council donates enough computers for the department				
35.	Lack of electric power impedes effective use of ICT in teaching and learning				
36.	Inadequate content/material for teaching and learning ICT is one of the major factors that hinders effective use of ICT in teaching and learning				
37.	Most Lecturers do not favour the use of ICT in teaching and learning.				
38.	There is sufficient technical support staff to assist the students in the laboratory during practice hours				
39.	timetabling difficulties and the need for teachers to change their pedagogy, hinders effective use of ICT on teaching and learning of office education				
40.	Using ICT in teaching and learning of office education is a priority in our College				

Questionnaire for Lecturers of Office Technology and Management

Please tick ( ) where applicable

1. Name of institution.....
2. Your highest qualification:

   PHD ( ) M.ED ( ) M.SC. ( )

   B.ED. ( ) B.SC. ( ) HND ( )
3. Years of working experience:

   1-5 year ( ) 6-10 years ( ) 11-15 ( )

   16-20 ( ) 21 and above ( )
4. Which of the following certificates in computer or ICT related courses do you have?

   2 Certificate in computer application ( )

   3 Diploma in computer application ( )

   4 Certificate in I.T. Essentials ( )

   5 Certified Cisco Networking Academy (CCNA) ( )

   6 Others specify:.....

SECTION B: QUESTIONNAIRE ITEMS

Instruction: Please tick (letters) your opinion in the columns provided. As shown below:

SA - Strongly Agree A - Agree

SD - Strongly Disagree D - Disagree

S/NO RESEARCH QUESTION ONE	WHAT TYPES OF ICTS ARE AVAILABLE FOR TEACHING AND LEARNING OF OFFICE TECHNOLOGY AND MANAGEMENT PROGRAMME IN FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA?	SA	A	SD	D
1.	There is ICT laboratory in your department and is being utilized by Office Education Students				
2.	The available computers in the ICT laboratory commensurate with the number of students in the department				
3.	Not All the available computers in the department are functional.				
4.	Multi-media projectors are not available and used during computer lessons and ICT related subjects in the department				
5.	Digital photocopiers, facsimile, etc are available in the ICT Lab./model office for instructional purposes in the department				

6.	Facilities such as interconnected computers, are wired or connected to a central printer for printing classroom task and assignment in the ICT laboratory in the department				
7.	Electronic meeting facilities such as: E-presence, smartboard, starboard are available in your department				
8.	There is internet connectivity with a very good broadband speed in your ICT laboratory				
9.	Routine maintenance of ICT facilities in the department is done as at when due				
10.	Most of the ICT facilities in the department are not functioning				
RESEARCH QUESTION TWO	**WHAT IS THE INFLUENCE OF THE USE OF ICT FACILITIES ON OFFICE EDUCATION PROGRAMME IN FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA?**	**SA**	**A**	**SD**	**D**
11.	Students of office option have access to internet facilities in the department.				
12.	Students only utilize the Internet facilities in the aspect of social networking such as: twitter, facebook, instergram, twoo etc.				
13.	Computer/secretarial courses are taught using ICT facilities.				
14.	Office Education students are well equipped to fit into today's modern office.				
15.	Office Education students can operate the computer and other ICT facilities proficiently				
16.	The students are able to develop ICT skill through constant practice in the departmental ICT laboratory in a collaborative way				
17.	Students are exposed to introductory courses on internet use and general applications (basic word-processing, spreadsheets, presentations, databases, etc.)				
18.	ICT skill is a laudable assets to all Business Educators especially office education option.				
19.	Students are competent in using computer to create, edit and print text materials				
20.	Students can operate the multi-media projector and make presentations on power points through the use of interactive whiteboard, or smartboard				
RESEARCH QUESTION THREE	**HOW COMPETENT ARE THE LECTURERS AND STUDENTS IN THE USE OF ICT FACILITIES IN OFFICE EDUCATION PROGRAMME IN FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA?**	**SA**	**A**	**SD**	**D**
21.	use of ICT in teaching and learning is essential to prepare students to live and work in the 21st century				
22.	The lecturers of office education are adequate and very proficient in handling and teaching ICT related courses				

23.	Capacity building workshop is organized for lecturers to update their knowledge of handling and using modern ICT tools				
24.	Lecturers are exposed to training on learning applications (tutorials, simulations, etc.) Multimedia (using digital video, audio facilities, etc.)				
25.	Most lecturers have e-mail addresses and use it for teaching and learning (mobile learning)				
26.	Lecturers attain workshop on advanced computer applications (advanced word-processing, mobile learning, Virtual Learning Environment etc.)				
27.	Lecturers use facilities such as multimedia projectors, starboards etc. during lecture.				
28.	There is a computer specialist in the department as provided in the NCCE minimum standard for proper instruction.				
29.	Department invites lecturers from other department say Computer science or GSE to teach computer courses in the department				
30.	Office option lecturers without computer skills make effort on their own to attend computers courses such CCA, IT essentials, CCNA with training institutions.				
RESEARCH QUESTION FOUR	**WHAT ARE THE CHALLENGES FACED BY OTM STUDENTS IN THE USE OF ICT FACILITIES IN OFFICE EDUCATION PROGRAMME IN FEDERAL COLLEGES OF EDUCATION IN NORTH-CENTRAL ZONE OF NIGERIA?**	**SA**	**A**	**SD**	**D**
31.	The TETFUND has come to the aid of the department by providing ICT Laboratory which is properly utilized.				
32.	Your College management diverts funds meant for upgrading the ICT facilities to other functions				
33.	There is special allocation of funds for ICT development in College				
34.	National Communication Council donates enough computers for the department				
35.	Lack of electric power impedes effective use of ICT in teaching and learning				
36.	Inadequate content/material for teaching and learning ICT is one of the major factors that hinders effective use of ICT in teaching and learning				
37.	Most Lecturers do not favour the use of ICT in teaching and learning.				
38.	There is sufficient technical support staff to assist the students in the laboratory during practice hours				
39.	timetabling difficulties and the need for teachers to change their pedagogy, hinders effective use of ICT on teaching and learning of office education				
40.	Using ICT in teaching and learning of office education is a priority in our College				

APPENDIX IV

Summary of Responses to Research Questions

Frequency Table 1: Research Question one (1)

QUEST. ITEM NO	SA	A	D	SD	TOTAL
1.	33(5)	50(4)	25(2)	21(-)	129 (11)
2.	20(-)	17(-)	60(5)	32 (6)	129 (11)
3.	48(4)	29(3)	21(-)	31(-)	129 (11)
4.	55 (4)	52(3)	10 (-)	12(-)	129 (11)
5.	10(-)	20 (-)	60(6)	39(5)	129 (11)
6.	25(-)	21(-)	50 (6)	33(5)	129 (11)
7.	11(-)	19(-)	69 (5)	30 (6)	129 (11)
8.	0 (-)	0 (-)	101(4)	28 (7)	129 (11)
9.	19 (-)	11(-)	41 (2)	58(9)	129 (11)
10.	32 (8)	51(3)	24(-)	22 (-)	129 (11)

NOTE: Figures in bracket represents Lecturers' responses

Frequency Table 2: Research Question Two (2)

QUEST. ITEM NO	SA	A	D	SD	TOTAL
11.	0 (-)	0 (-)	9 (3)	120 (7)	129 (11)
12.	12 (-)	28 (-)	55 (6)	34(5)	129 (11)
13.	10 (-)	30 (-)	71 (7)	18(3)	129 (11)
14.	2(-)	3 (-)	24 (01)	100 (10)	129 (11)
15.	12 (2)	21(1)	44(3)	52(5)	129 (11)
16.	58 (10)	41 (1)	11 (-)	19 (-)	129 (11)
17.	10 (2)	32(1)	57(6)	30(2)	129 (11)
18.	100 (10)	29 (1)	0(-)	0(-)	129 (11)
19.	12 (-)	25 (-)	65(6)	27(5)	129 (11)
20.	11(-)	18(-)	54 (8)	46 (3)	129 (11)

NOTE: Figures in bracket represents Lecturers' responses

Frequency Table 3: Research Question Three (3)

QUEST. ITEM NO	SA	A	D	SD	TOTAL
21.	99 (11)	30(-)	0(-)	0(-)	129 (11)
22.	10 (2)	19 (2)	55(4)	45(3)	129 (11)
23.	9(-)	20(-)	46 (6)	54(5)	129 (11)
24.	11(-)	29(-)	69 (8)	20 (3)	129 (11)
25.	15 (-)	15 (-)	40(9)	59 (2)	129 (11)
26.	10 (-)	19 (-)	45 (5)	55 (6)	129 (11)
27.	12 (-)	20 (4)	42 (5)	55(4)	129 (11)
28.	50 (6)	49(5)	14 (-)	16 (-)	129 (11)
29.	14 (1)	27(2)	54(8)	34 (-)	129 (11)
30.	30 (3)	21(1)	50(4)	28(3)	129 (11)

NOTE: Figures in bracket represents Lecturers' responses

Frequency Table 4: Research Question Four (4)

QUEST. ITEM NO	SA	A	D	SD	TOTAL
31.	11(-)	10(-)	60(5)	48(6)	129 (11)
32.	19 (2)	31(1)	50(5)	29(3)	129 (11)
33.	80 (5)	21 (6)	15 (-)	13(-)	129 (11)
34.	11(1)	16(2)	55(3)	47(5)	129 (11)
35.	80 (11)	49 (-)	0(-)	0(-)	129 (11)
36.	45 (6)	59 (5)	10 (-)	15 (-)	129 (11)
37.	90 (7)	10 (4)	0 (-)	29 (-)	129 (11)
38.	11 (-)	14 (-)	19 (6)	85 (5)	129 (11)
39.	50 (4)	49 (7)	16 (-)	14 (-)	129 (11)
40.	10(-)	20 (-)	31 (8)	68 (3)	129 (11)

NOTE: Figures in bracket represents Lecturers' responses