CHAPTER ONE

INTRODUCTION

Background to the Study

Business education has remained an invaluable academic programme in tertiary institutions in Nigeria and beyond. It is a programme designed to empower students with educational and business competencies needed to effectively cope with the challenges in the world of work. According to Okoye and Umezuluike (2014), business education is part of vocational education programme which inculcates in individuals business competencies, skills, attitudes, knowledge and understanding necessary to perform and progress effectively in the business world. As a designed programme of instruction, it prepares people for jobs requiring specialized training.

Business education according to Osuala (2004) is a programme of instruction which consists of two parts: (i) a vocational education programme for office career through initial, refresher and upgrading education leading to employability and advancement in the office occupations and (ii) general education – a programme to provide students with information and competencies needed by all in managing personal business affairs and in using the services of the business world. The objectives of business education programme in universities according to Soneye (2015) can be summarized thus:

- To produce well qualified and competent graduates in business subjects who will be able to teach business subjects in secondary schools and other related educational institutions

- To produce business teachers who will be able to inculcate the vocational aspects of business education in society.
- To produce business teachers who will be involved in the much desired revolution of vocational development right from the primary and secondary schools
- To equip graduates with the skills that will enable them to engage in a life of work in the office as well as self-employment

Puri (2016) added that irrespective of the level, business education is aimed at providing training that will equip its recipients with business skills for optimal performance in the work place. As a programme of study, business education courses are offered in universities, polytechnics and colleges of education while the secretarial option is offered in polytechnics as office technology and management (OTM).

The office technology and management programme came into being in 2004 after the review of the old secretarial studies curriculum for producing office workers in Nigeria. The review was taken with the view to produce graduates who could be efficient in management roles and have the confidence and practical skills necessary to put theory into action. This new Office Technology and Management programme has been described as having apparent advantages because of UNESCO assistance during the review. This introduced international perspectives to the curriculum and enabled it to benefit from some of the best practices around the world particularly, the office technology component which includes the convergence of computer, telecommunication, internet and information and communication competencies that are lacking in the various curricula for producing office workers in Nigeria.

Since business education programme in universities is designed to produce individuals who upon graduation are to implement the office technology contents of OTM curriculum, it is expected that these office technology contents in OTM curriculum be adequately reflected in university business education curriculum to enable its graduates perform effectively as OTM lecturers in the present dynamic age of technology. Adequacy of contents in this context means to be good enough in quality and in quantity. The quantity and quality of input in anything or system determine the output. In the same vein, if the office technology contents of business education programme in universities are adequate or good enough in quality and quantity, it will be fit and adequate for producing qualified and competent OTM lecturers. Therefore, to determine the adequacy of the office technology contents in business education programme of universities, it is imperative to examine the contents, particularly the office technology aspect as perceived by business educators.

Office technology in this usage implies the use of computer system, software and networks for processing, distribution and communicating data and information in an organization. Fadare (2014) grouped office technology components into a variety of equipment, software and systems while Oguejiofor and Nwogu (2014) classified office technology into four groups namely: communication, telecommunication, reprography and micrography. For the purpose of this study, the components or contents of office technology are grouped in clusters of: computer technology, telecommunication technology, multimedia technology, networking technology and desktop publishing technology.

Computer is an electronic device that receives, stores, processes and retrieves information. Computer technology focuses on the use of technological facilities for

managing and disseminating information. Computer technology is important in business education programme in universities because it exposes students to the use of various office applications such as Microsoft Word, MS Excel, MS Power Point and MS Access for effective work performance. Akudolu and Olibie (2007) noted that one of the major reforms needed in teacher education in Nigeria has to do with exposing teachers to and facilitating their acquisition of computer technology competencies.

Telecommunication technology also considered as electronic communication technology is a component of office technology which involves the transmission of information over long distances, often through electronic aids. It is the technology of sending signals, images and messages over long distances by radio, telephone, television satellite, and internet. The use of electronic communication in teaching enables the teacher to impact knowledge and communication over a long distance. It also helps to improve the quality of classroom teaching.

Multimedia technology according to Nweke (2013) are those technological facilities that combine five basic types of media into learning environment, such as text, video, sound, graphic and animation thus providing a powerful teaching learning environment. Multimedia technology contents provide students with the technical steps needed to produce multimedia document, encourage deep reflective thinking and empower students to create and design rather than absorbing presentations created. Ohakwe (2008) remarked that with multimedia technology, a teacher can create educational presentation that can add variety and vitality to teaching thus, making it refreshingly new, interesting, real, persuasive and lasting in the memories of learners. Similarly, Ndukwe (2005) noted that presentation created with

multimedia technology can add audio and visual effects making them look professional or flashy to meet high standard of presentation.

Networking technology according to Akintola (2005) is the interconnection of two or more computer system with data communication devices. It consists of communication software, computer systems and network cable. Akintola noted further that networking reduces duplication of computer resources thus enabling the scarce resources to be shared among computer system; allows the sharing of files, application, software products, printer, disk space, modem and e-mail facilities.

Desktop publishing technology exposes students to the rudiments of using publication software such as Microsoft Publisher, Corel Draw and other graphic application programs effectively and efficiently in the office. Okoro and Okoro (2009) asserted that the contents of desktop publishing include among others; ability to identify and use documents; produce a simple publication; set up page size/orientation and margins of a flier; create quality and attractive text area/text frame; and so on. Similarly, Negron (2007) maintained that the use of desktop publishing software like MS Publisher is more flexible in handling text, graphics and even tables since all are independent elements. Negron noted further that all that is required is precisely maneuvering and positioning of these elements that enable complicated layout to be achieved in a professional manner.

Therefore, it is important to examine the adequacy of these contents in business education programme of universities. Since business educators are assumed as experts in matters of business education programme, it is also imperative to determine the adequacy of

the office technology contents in business education programme as perceived by business educators in universities in south-south and south-east Nigeria.

Perception according to Joseph (2012) refers to a process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment. It includes all those processes by which an individual receives information about his environment—seeing, hearing, feeling, tasting and smelling. Dagnew (2016) observed that educators' perceptions have an enormous effect on quality of education and successful implementation of quality education in schools. The author maintained that understanding the ways in which educators perceive educational contents helps to identify points of intervention to improve the effectiveness and success of educational programme. Understanding teachers' perspectives on adequacy of educational contents is particularly important because they are the professionals primarily responsible for interpreting and implementing educational programme. Consequently, in conducting the study on perceived adequacy of office technology contents in business education programme of universities, the findings are expected to have practical implication for quality business education programme in universities and successful implementation of office technology and management programme in polytechnics in Nigeria.

Business educators in universities differ in terms of educational qualification and years of teaching experience. Some of them have masters' degree as their highest educational qualification while others have doctorate degree; some have years of teaching experience more than others. It is expected that these variables may influence the rating of business educators on the adequacy of the office technology contents in business education

programme in universities in south-south and south-east Nigeria. Hence, the significant level of influence of these variables was determined in the study.

In a nutshell, the relevance of office technology contents of business education programme of universities cannot be overemphasized. It will determine whether the products of business education programme of universities will be competent enough to implement the contents of office technology and management programme of polytechnics. Hence, the need to determine the perceived adequacy of office technology contents in business education programme of universities in Nigeria.

Statement of the Problem

The objectives of business education programme in universities among others, is to produce competent and qualified business graduates who will be able to teach vocational skills and business knowledge to students at secondary schools and other institutions (colleges of education and polytechnics). However, since the introduction of office technology and management programme which is characterized by convergence of computer, telecommunication, internet and information and communication technology competencies, it has become a national debate both in periodicals and in business education conferences as to whether the office technology contents in business education programme of universities are adequate for producing competent office technology and management educators.

What appears disappointing is that many authors, educators and researchers were of the opinion that, graduates of business education programme in universities cannot

implement the OTM curriculum effectively without undergoing retraining programme, as a result of the perceived inadequacy of office technology contents in business education programme. Currently, some polytechnics in Nigeria, specifically, Federal Polytechnic, Auchi, and Kwara State Polytechnic have moved their Office Technology and Management Department from School of Business Studies to School of Information and Communication Technology as a result of this development.

Hence, many researchers such as Nweke (2013), Okoro (2013) and Peters (2012) have recommended that business education programme of universities should be reviewed to update the office technology contents of business education curriculum so that graduates of business education programme would not need to undergo another training programme before they can fit into the job for which they have been supposedly trained (Adeboye, 2009 & Nwaiwu, 2009). However, the extent to which business education programme of universities in South-south and South-east Nigeria has been adjusted in terms of office technology contents has remained empirically uncertain. The researcher therefore is worried that if the adequacy of office technology contents of business education programme of universities is not empirically determined, it may be considered unfit and irrelevant for producing OTM educators.

Purpose of the Study

The purpose of the study was to determine perceived adequacy of office technology contents in business education programme of universities in South-south and South-east Nigeria. Specifically, the study sought to determine the adequacy of:

1. Computer technology contents in business education programme as perceived by business educators in universities in South-south and South-east Nigeria.
2. Telecommunication technology contents in business education programme as perceived by business educators in universities in South-south and South-east Nigeria.
3. Multimedia technology contents in business education programme as perceived by business educators in universities in South-south and South-east Nigeria.
4. Networking technology contents in business education programme as perceived by business educators in universities in South-south and South-east Nigeria.
5. Desktop publishing technology contents in business education programme as perceived by business educators in universities in South-south and South-east Nigeria.

Significance of the Study

The outcome of this study would provide comprehensive information about the status of office technology contents in business education programme of universities in south-south and south-east Nigeria. This information would be beneficial to university business education students, university business education lecturers, university business education curriculum planners, and employers of labour.

University business education students would benefit from this study since it concerns office technology contents in business education programme in universities. The findings of the study will reveal office technology contents that are adequate in business education programme in universities and those contents that are inadequate. It is believed that when the curriculum is reviewed in line with the findings of the study, it will help to adequately

prepare students as prospective OTM lecturers; thereby making them very suitable and attractive for the job when they graduate.

Business education lecturers in universities could benefit from this study by way of staff development and improvement. The findings of this study would reveal adequacies and inadequacies in business education curriculum in universities in terms of office technology contents, which when reviewed could create opportunity through which business educators in universities can get staff development to improve themselves. Review of curriculum will always create need for staff development in order to meet its demands. The staff development would come in the form of in-service training, conferences, seminars and workshops both at the national and international levels. It will enhance the level of performance in instruction delivery in the technology-driven classroom for the production of more informed and technologically oriented business education graduates.

Awareness on status of office technology contents in business education programme could be beneficial to university business education curriculum planners. It will furnish them with areas of office technology contents that are adequate and areas that are inadequate. The inadequacies detected in business education programme in universities by this report would become reference points when reviewing the curriculum. Hence, it becomes evident and easier for curriculum planners to plan and design business education curriculum to suit the present technological needs of its graduates. Then, graduates of university business education programme (as OTM teacher preparation programme) will not have to seek another academic training programme before they can fit into the job for which they have been supposedly trained.

Employers of labour would benefit from the findings of this study in the sense that, when the findings of the study are implemented, deficiencies in office technology contents in business education programme will be rectified. When this is done, universities will turn out qualified and competent business education graduates which employers of labour need and therefore save them cost of immediate training of this cadre of employees.

Scope of the Study

The study focused on perceived adequacy of office technology contents in business education programme of universities in South-south and South-east Nigeria. The study covered all the office technology contents which are: computer technology contents, telecommunication technology contents, multimedia technology contents, networking technology contents and desktop publishing technology contents. Only business educators in universities in south-south and south east Nigeria who were assumed experts in business education programme were involved in the study. Moderator variables in this study included the educational attainment and years of teaching experience of business educators.

Research Questions

The following research questions guided the study. How adequate are:

1. Computer technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?
2. Telecommunication technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?

3. Multimedia technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?
4. Networking technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?
5. Desktop publishing technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria.
2. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria.
3. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria.

4. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria
5. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria.
6. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria.
7. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria.
8. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria.
9. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of desktop publishing

technology contents in business education programme of universities in South-south and South-east Nigeria.

10. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of related literature for this study was conducted under the following sub-divisions.

Conceptual Framework

Adequacy

Perception

Office technology

Business education

Theoretical Framework

Prosser's Theories of Vocational Education

Theoretical Studies

Nature of perception and its relevance in decision making

Office technology in business education

Computer technology in business education

Telecommunication technology in business education

Multimedia technology in business education

Networking technology in business education

Desktop publishing technology in business education

Related Empirical Studies

Summary Review of Related Literature

Conceptual Framework

Adequacy

Adequacy according to Hornby (2010) is the quality of being good enough or great enough in amount to be acceptable. It indicates the amount in which something is considered acceptable or meeting a specified purpose. Adequacy of educational contents of a programme implies that all aspect of educational contents that are needed for achieving the goals and objectives of the programme – to produce quality graduates, must be reflected in complete quantity and quality.

Ihionkhan (2015) also viewed the concept as the ability to reasonably satisfy a requirement. This definition also implies suitability for the purpose required. That is to say that if something is adequate, then, it has nothing short of specified benchmark. For any well thought educational engagement, there must be already specified goals and objectives and for the stated goals and objectives to be attained, certain resources are needed usually stipulated and documented. The adequacy of the stipulated resources becomes a requirement if the stated objective will be attained.

In the same vein, the quality and quantity of the programme contents must match the goals and objectives of the programme. Otherwise, the outcome will be different from the expected. No wonder Amiaya (2013) defined adequacy as the state of being sufficient for the purpose concerned. This meaning does not suggest abundance or excellence, or even more that what is absolutely necessary. It is simply the state of sufficiency. The sufficiency and suitability of educational contents is best determined by expert in that field. This is because they are the ones who possess the knowledge, skills and abilities in that field. Since business

educators are considered experts in matters of business education, it is pertinent to determine the adequacy of office technology contents in business education programme of universities in Nigeria based on their opinion and perception.

Therefore, adequacy in the context of this study implies the sufficiency of office technology contents in business education programme both in quantity and quality to suit the stipulated goals and objectives of the programme. If the contents are adequate, it will be suitable for producing competent graduates who will in turn implement the office technology and management curriculum in polytechnics in Nigeria. Hence, business education graduates may not need to seek another training before fitting properly into the technology driven OTM classroom.

Perception

Perception according to Derbi (2012) is the ability to see, hear, or become aware of something through the senses or the way in which something is regarded, understood or interpreted. Eysenck in Ikelegbe (2015) use the word human perception. The author stated that it involves using ones senses to become aware of things in the environment. To perceive, one uses sight, hearing, touch, or smell to learn about something. He added that perception usually leads to a new understanding about something. According to Kendra (2006), perception is the ability to pick out something through seeing, hearing, smelling or touching. The sensory stimulus of the body system consciously registers an activity or event in the human memory which help the recipient in understanding his environment.

Hornby (2010), defined perception as the way we notice things especially with the senses or an image one has as a result of how you see or understand. Ikelegbe (2015) used

the term perception to refer to the complete act of perceiving and involving the psychological factors. He further stated that, the obvious consequence is that we do not necessarily perceive that which we immediately perceive with no contradiction. According to Kendra (2006), perceptional process allows us to experience the world around us, get information about properties and elements within our environment that are critical to our survival. Perception not only creates our experience of the world around us; it allows us to act with our environment.

Perception according Graham in Ikelgbe (2015) is a Latin word (perception, percipio) which means the organization, identification, and interpretation of sensory information in order to represent and understand the environment. The author added that all perception involves signals in the nervous system, which in turn result from physical or chemical stimulation of the sense organs.

Kendra (2006) also described perception as the process through which the information from outside environment is selected, received, organized and interpreted to make it meaningful. This input of meaningful information results in decisions and actions. Perception may be defined as a process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment (Ikelegbe, 2015). Similarly, Joseph (2012) added that perception includes all those processes by which an individual receives information about his environment—seeing, hearing, feeling, tasting and smelling. The study of these perpetual processes shows that their functioning is affected by

three classes of variables—the objects or events being perceived, the environment in which perception occurs and the individual doing the perceiving.

In simple words, it can be said that perception is the act of seeing what is there to be seen. But what is seen is influenced by the perceiver, the object and its environment. The meaning of perception emphasizes all these three points. However, for the purpose of the present study, perception refers to the views, ideas, beliefs and opinions of business educators regarding the adequacy of office technology contents in business education programme of universities. The perspective of business educators is not only important because it helps to identify points of intervention to improve the effectiveness and success of the programme but, particularly important because business educators are the professionals primarily responsible for interpreting and implementing office technology and management programme.

Office Technology

An office is a place, a room or building where clerical and administrative duties are carried out. It is a room set aside in an organization for business and administrative services. Omaghomi and Obriki (2010) viewed an office to be a place where the administrative work of an organization is done and where all sorts of paper such as letters, records, files and correspondence are carried out to develop and control the various activities of business.

Office according to Fadare (2014) is gradually being transformed technologically through new technologies which are going on daily. Fadare noted that these changes are in the area of information and communication technology, machines, computers, telephone and

other related gadgets. This computerization of office functions is called office automation also known as electronic office or paperless office. Igbinoba (2000) argued that automation of office is concerned with the collection and distribution of information, communication and information processing. The automated office therefore is an office where computer/electronic and telecommunication equipment are used for the collection, manipulation, storage and transmission of text, number, sound and image. In other words, it is a technology driven office.

The word technology according to Fadare (2014) is derived from the Greek word techno meaning “art” and logos meaning “word” or “discourse”. Efiong (2005) defined technology as “the tools which people and organizations apply to get things done more quickly, more easily or more efficiently. According to Blismmer (2003), technology is the practical application of knowledge, and refers to those activities directed to the satisfaction of human needs, which produce alteration in the material work.

In a similar perspective, Technology according to Amesi and Akpomi (2014) is the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization in order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle and apply input/output relation or perform a specific function. It can also refer to the collection of such tools, including machinery, modification, arrangements and procedure (Akpomi, 2003). The term can either be applied generally or to specific areas such as construction technology, medical technology, engineering technology, information technology and so on (Kompridis, 2009).

Therefore office technology can be seen as the scientific application of knowledge and methods to practical task in office or work place. According to Fadare (2014) it involves a variety of equipment, software and systems. The author further remarked that the introduction of office technology – a set of sophisticated telecommunication equipment, computers, word processors, information technology resources – coupled with management techniques have changed the old work habits thereby resulting to complete job designation and acquisition of new skills. Nwogwugwu (2002) enumerated office technology machines which include electric typewriters, photocopiers with paper sorter, micrographic, fax recorder, audio recorder, telephone with cellular or mobile attachment, electronic switchboard, addressing machines, letter folding machines, shredding machine, microfilm, laminating machines, tele-printer and telex machines. The software and system components of office technology include internet resources line e-mail, World Wide Web, newsgroup/internet, e-commerce, e-banking, telecommunication and tele-writing, electronic document interchange, computer aided telephone, video or video conferencing.

In the opinion of Agomuo (2005), office technology refers to all the applications of methods, tools, knowledge, devices and systems to facilitate information driven activities of the office. Examples of new office technologies include power point, blogging, mobile devices, screen casting, web, video and teleconferencing, video conferencing, interactive whiteboard, personal digital assistance(PDAs), handheld computers, web-based discussion list-server, bulletin board/electronic discussion environment, online library, database, overhead projector etc. (Mortion, 2012). In the same vein, Agomuo also mentioned some virtual office technologies which include web browser, web search engine, word processing,

newsgroup reader, graphic editor, virus scanner backup, central file server, virtual LAN, internet telephone, CD-ROM and web-enabled database. All these technologies are well articulated in office technology and management curriculum for training office managers but their adequacy in the curriculum used for training OTM educators in universities in south-south and south-east has remained empirically uncertain. Therefore, office technology in the context of the present study refers to all the modern technology contents and facilities documented in the NBTE curriculum and course specification for office technology and management programme in polytechnics in Nigeria.

Business Education

To a number of people, business education is all about preparation of students for entrance into the business world. Yet to some others, business education refers to business teacher education – the preparation of in-service education for secondary and post secondary school business teachers. From a wider and more encompassing perspective, business education is seen as an aspect of the total educational programme that provides knowledge, skills, understanding, and attitudes needed to transfer business knowledge as well as perform in the business world as producer or consumer of goods and services that business offers.

Business education is therefore, education for and about business (Aluwong, 2011). The term is an integration of business and education. It is an aspect of vocational and technical education – a comprehensive term referring to those aspects of educational process involving the study of technologies, related sciences and acquisition of practical skills, attitudes and knowledge relating to occupation in various sectors of economic and social life.

Business education, according to Osuala (2004), is a programme of instruction which consists of two parts; a vocational education programme for office career through initial, refresher and upgrading education leading to employability and advancement in the office occupations, and General education; a programme to provide students with information and competencies, which are needed by all in managing personal business affairs and in using the services of the business world.

In the view of Adukwe (2008), business education is an aspect of the total education programme which provides the knowledge, skill, understanding and attitudes needed by any individual to perform wisely in the business world as a producer or consumer of goods and services which business offers. Nwachukwu (2011) also defined business education as that broad area of knowledge that deals with a nation's enterprise system, such that it identifies and explains the role of business as a nation's economic institution and provides content and experiences that prepare workers and consumers in society. According to Aghionu (2002), business education is that form of instruction that both directly and indirectly prepares the businessman for his calling. This definition emphasizes the vocational nature of business education programme.

Based on the views and definitions by authors and researchers reviewed above, it is obvious that business education is more than business teacher education. It is about proactive and in-depth analytical process in business. The mission is to provide businesses, organizations and individuals with high quality programmes necessary for meeting the challenges and opportunities of business environment. However, for the purpose of this study, business education is restricted to business teacher education whose goal is to produce

well qualified and competent graduates in business subjects and office technology; who will be able to teach all business subjects in secondary schools and implement office technology and management curriculum at the post secondary school level especially in polytechnics. Therefore, if business education must meet this goal of producing informed citizens and well equipped manpower who will live, learn and work successfully in an increasing complex, information-rich and knowledge-based society, ascertaining adequacy of office technology contents in the programme is inevitable.

Theoretical Framework

This research is based on Prosser's theories of vocational education as its theoretical framework.

Prosser's Theories of Vocational Education

Charles Allen Prosser (1871 – 1952) proposed 16 theories as a basis for sound, effective and successful vocational education programme. One of these theories is briefly presented below.

Environmental Habit theory

Environmental habit theory states that vocational education will be efficient in proportion as the environment in which the learner is trained is a replica of the environment in which he must work. It is essential for a learner to form association or relationship between objects or events in the external environment because it stimulates learning. This means that, when a learner is familiar in the training of use of tools, facilities and technology

for a particular job, such a learner would automatically become used to the tools, that at any subsequent time he is presented to such condition of work, the individual will be fascinated in doing the job and not afraid or confused.

The theory emphasizes that the type, use and arrangement of space, materials, equipment, facilities and technologies for a preparatory programme be a replica of those in employment. It implies that, business education programme should be designed to reflect the environmental features of the work place where the products of the programme are expected to work. In other words, there is no effective and efficient training of business educators if the environment in which business educators are trained does not replicate the anticipated place of work.

Environment in the context also implies the tools, equipment and technologies in workplace. Therefore, if business education programme must meet the demand of producing modern office workers and educators, relevant machines and technology used in such workplace must be integrated into the programme. In other words, for relevant, effective and efficient business education programme, the office technology content of the programme must encapsulate what is obtainable in modern business office and in OTM programme.

Experienced Instructor Theory

Prosser theory of experience instructor states that “vocational education will be effective in proportion as instructor has had successful experience in the application of skills and knowledge to the operation and processes he undertakes to teach”. The implication in this case is that the teachers cannot teach that which they do not know; and, since the subject matter of the vocational teacher is composed of the skills and knowledge of the occupation, it

would follow that teachers who are recognized as highly competent workers themselves through actual successful employment experience would be most desirable for a vocational programme. This means that business educators who do not possess relevant knowledge and skills in office technology cannot effectively teach in office technology and management programme. It therefore means that for business education programme to deliver the mandate of producing business graduates who can teach business subjects in secondary schools and implement office technology and management curriculum in tertiary institutions in this digital era, various office technologies must be adequately reflected into the programme.

Industry Standard Theory

The theory of industry standard as propounded by Prosser states that effective vocational education can only be given where the training jobs are carried on the same way, with the same operations, the same tools, and the same machines as in the occupation itself. This theory means that if business education will be effective, it must train its students using the same equipment, facilities and technology that are used in the industry in which programme graduates are expected to work. The implication of this theory is that if business education is designed to produce graduates who will successfully implement office technology and management in Nigerian polytechnics, then, the office technology content of the programme must be adequately reflected and covered in business education programme of universities so that graduates of the programme need not undergo another retraining before they can fit into the workplace for which they are supposedly trained.

Gainful Employment Theory

The theory of gainful employment as propounded by Proser emphasizes that vocational education will be effective in proportion as the specific training and experiences for forming the right habits of doing and thinking are repeated to the point that these habit become fixed to the degree necessary for gainful employment. This is because the more a skill is practiced, the longer the mastery level. Therefore, if learners practice regularly with the necessary tools, facilities and technologies, they will become more equipped and skill in the use various office technologies. This will no doubt help the student to be familiar with them and be effective on such facilities and technologies. This will help them to become skillful in the use of relevant facilities and technologies needed for effective service delivery both as office workers and OTM educators.

The implication of these theories is that business education which is an integral part of vocational education will be effective in the training of skillful use of office technologies to learner because student will be exposed to practice and demonstrate with different types of office machines and technology. Correct handling of machines and manipulation of different office equipment used in modern office, using appropriate application programme in carrying out different function, as well as other office routine will be perfectly demonstrated in a manner that is most effective and efficient. Business education graduates will then be able to effectively teach office skills that will enable learners to fit properly into the office of any organization and perform professionally, the functions of a secretary or office manager which among others include relating the functions of the office to the whole organization, attending meetings and providing information as may be required, make accurate records of

proceedings, filing and retrieving of information taking appropriate action independently when faced with chilling secretarial office problems, showing personal qualities and attributes conducive to tolerance and co-existence with the work group (NBTE, 2008).

Theoretical Studies

Nature of Perception and its Relevance in Decision Making

Perception refers to the interpretation of sensory data. In other words, sensation involves detecting the presence of a stimulus whereas perception involves understanding what the stimulus means. For example, when we see something, the visual stimulus is the light energy reflected from the external world and the eye becomes the sensor. This visual image of the external thing becomes perception when it is interpreted in the visual cortex of the brain. Thus, visual perception refers to interpreting the image of the external world projected on the retina of the eye and constructing a model of the three dimensional world (Joseph, 2012).

From the above explanation it becomes clear that perception is something more than sensation. It correlates, integrates and comprehends diverse sensations and information from many organs of the body by means of which a person identifies things and objects, the sensations refer to.

Perception is determined by both physiological and psychological characteristics of the human being whereas sensation is conceived with only the physiological features (Kendra in Ikelegbe, 2015). Thus, perception is not just what one sees with the eyes it is a much more complex process by which an individual selectively absorbs or assimilates the

stimuli in the environment, cognitively organizes the perceived information in a specific fashion and then interprets the information to make an assessment about something or what is going on in one's environment

Perception is a subjective process, therefore, different people may perceive the same environment differently based on what particular aspects of the situation they choose to selectively absorb, how they organize this information and the manner in which they interpret it to obtain a grasp of the situation. It describes the beliefs, ideas, views or opinion of people over a given subject. Such views and ideas are relevant for critical decision making especially when the perceivers are considered or assumed experts in subject under consideration. In the case of the present study, business educators who are assumed experts in matters of business education programme, hence their views and perspective about the adequacy of the office technology contents in business education programme of universities are of paramount importance.

In response to the relevance of perception in decision making, Dagnew (2016) noted that perception is very important in understanding human behaviour, because every person perceives the world and approaches life problems differently. Whatever we see or feel is not necessarily the same as it really is. It is because what we hear is not what is really said, but what we perceive as being said. When we buy something, it is not because it is the best, but because we take it to be the best.

Similarly, Graham in Ikelegbe (2015) added that if people behave on the basis of their perception, we can predict their behaviour in the changed circumstances by understanding

their present perception of the environment. One person may be viewing the facts in one way which may be different from the facts as seen by another viewer. Similarly, Dagnew (2016) noted that with the help of perception, the needs of various people can be determined, because people's perception is influenced by their needs.

Finally, perception is very important for the educational administrator who wants to avoid making errors when dealing with people and events in school or work setting. This problem is made more complicated by the fact that different people perceive the same situation differently. In order to deal with the subordinates effectively, the administrator must understand their perceptions properly. Thus, for understanding the human behaviour, it is very important to understand their perception, that is, how they perceive the different situations. According to Joseph (2012) people's behaviour is based on their perceptions of what reality is, not on reality itself. The world as it is perceived is the world that is important for understanding the human behaviour.

Office Technology in Business Education

Office technology is a systematic application of scientific or other knowledge to practical tasks in office. It involves complete integrated process of organizing man, machines, ideas, procedures and management in work place to achieve set goals. Office technology according to Okiti-Okagbare (2009) is one that has direct impact on office procedure particularly concerning the methods by which information is obtained and transmitted.

The society is ever changing and so are all other activities, thus, placing constant demand on programme content and methodology. Business education in turn is face by the challenges of such demand. Therefore integration of modern office technologies in university business education programme and it utilization in training students would no doubt expose the students to their workings. Osuala (2009) posited that designing educational programme must consider the present and the future, useful occupational information, and the needs of the learner.

The study contents of university business education programme should have a close link with the skills and knowledge demands of the technology era. Amiaya (2014) buttressed this point further when the author remarked that any educational institution especially at the higher education level that turns its back on the incorporation of modern technologies in their various forms into learning cannot claim to be developing its students for life-long living in the 21st century.

Several studies have found that office technology in business education as well as its utilization is essential for providing ample opportunities that make it possible for students to operate in an information age. According to Lefebvre, Deaudellin and Loiselle (2006), modern office technology generally has been found to possess great capacity to support education across curriculum, business education inclusive and improve teaching and learning in the school classroom by providing opportunities for an effective communication between teachers and students in ways that have not been possible before.

In the opinion of Bransford, Brown and Corking (2000), the products of modern technologies can play various roles in teaching and learning process because these products have the potential to enhance students' achievement. The authors emphasized that what is now known about learning provides important guidelines for the users of the technologies that can help students and teachers to develop the competencies needed for the 21st century.

Similarly, Shamatha, Peressini and Meymaris in Amiaya (2014) noted that the use of such technological tools as computer can help students to become more knowledgeable; reduce the amount of direct instruction given to students and also give teachers the opportunity to provide personalized help to students with special needs. It has had a marked effect on schools' teaching and learning across ages (Joshua, Odesanya & Baba, 2011). Thus there is need for teachers and students particularly in business education to be competent and versatile in the use of office technology for effective teaching and learning. Nnaji (2010) succinctly remarked that business educators being the main purveyor of business of instruction should have the requisite competencies and techniques of teaching office technology.

Office technology is especially invaluable in a skill-oriented education programme like business education where graduates are required to demonstrate skills and competencies demanded in the 21st century that is competitive and technology driven. Oguejiofor and Nwogu (2014) classified office technology into four groups namely: communication, telecommunication, reprography and micrography. However, for the purpose of this study, the components of office technology are grouped in clusters of: basic computer technology,

telecommunication technology, multimedia technology, internet/networking technology and desktop publishing technology.

Computer Technology in Business Education

The introduction of technology has made the world a global village by changing the way we learn, work and live. And thus, there is urgent enthusiasm to keep pace with such changes in technology in order to overcome the challenges they pose on the development of the society. One of such technological innovations is computer technology which sometimes can also be referred to as information technology.

Computer technology has been defined by several authors and researchers. The Federal Republic of Nigeria, FRN, (2013) in National Policy on Information Technology defines it to include any equipment or interconnected system or subsystem or equipment that is used in automatic acquisition, storage, manipulation, management, control and reception of data or information. It can be seen as an integral part of information and communication technology. Ngurukwe (2005) defined it as a convergence of technologies that include the computer and microprocessor technology, communication technology and network technology. That includes all sort of electronic devices such as computer, internet mobile equipment and software resources which have become powerful for educational change and reform. Harvey (2006) was not far from this view point when the author noted that computer technology is a current advancement in computer, process and communicating of information by the computerize devices via the interconnected network which have given rise to the phrase “the information and communication superhighway.

The Economic and Social Commission for Asia and the Pacific (2009) defined it as referring to techniques people use to share, distribute, gather information and to communicate such information through computers and computer networks. It is thus concerned with using technology to gather and distribute information. Such information can be accessed by the intended user from any part of the world. Information Technology related activities include: Broadcast material or CD-ROM as services of information; micro-computers with appropriate keyboards and other devices to teach and write; keyboards; electronic mail to support writing and sharing of resources; video-conferencing; internet-based research

In a similar dimension, the Commission for Information and Communication Technology (2011) in a document titled "National Competency Standard for Teachers" viewed the concept of computer and information technology as the totality of electronic means to collect, store, process and present information to end-users in support of their activities. It consist among others, the computer systems, office systems and consumer electronics, as well as a networked information infrastructures, the component of which include the telephone system, the internet, fax machines and computer.

Ezenwafor (2012) observed that computer has become a very powerful tool in education and training by linking students to global information and inducing innovations for lecturers. Computer technology is potentially powerful enabling tool for educational advancement and reform. When used appropriately, it helps to expand access to education, strengthen the relevance of education to increasingly digital workplace and raise educational quality by helping to make teaching and learning into an engaging active process to real life.

Nwanewezi and lsifeh-Okpokwu (2008) opined that the use of computer technology in acquiring knowledge and skills has become an essential element in education and training; and these technological elements in the educational process have magical effects. The authors noted further that any tertiary institution running vocational and technical education programme like business education without the support of computer makes the lives of the learner and the teacher equally difficult. Therefore there is need for business educators to acquire the knowledge, skill and ability to efficiently select and utilize all sorts of electronic devices; computers, internet, mobile equipment and software resources for the purpose of teaching and learning.

Akudolu, Aremu and Larnuren (2011) posited that computer and information technology comprises electronic tools used basically for collaboration, searching and exploring information, processing and storing data. Information technology tools and resources aid students learning by presenting materials in electronic form through on-line digital libraries, video project screens, CD-ROMS, internet facilities and mobile technologies such as I-pod, smart phones and e-book reader (Harvey, 2006).

The European Union (2005) reported that the impact of information technology on students' learning varies greatly between countries and outlined possible positive impacts on students' learning to include linking theory and practice better, enhancing the level of student knowledge, and skills, increasing efficiency, leading to individualized learning and preparing the students for life-long learning. In a similar note, Sosin, Belecha and Agawal (2004) asserted that the positive effects of information technology on the learning process equalizing individual differences and having particular dramatic effect for student with special needs,

enabling collaborative learning, encouraging use of peer-coaching and peer reviews and giving students more control.

In addition, information technology is being applied to the management of learning and to business models of educational delivery. Okuta (2010) stressed the need for the urgent incorporation of information technology in the tertiary content of business education to equip student with skills for effective job performance in the digital work place. This is because today's business organizations are steadily moving into the era of the 'paperless office', which is characterized by the use of computers and their networks especially the internet which has positively affected the role of office workers. In the word of Nwanewezi and Abaniwo (2003) office staff particularly secretaries now work on computer terminals that are connected to networks like the Internet. They are now required to send, receive, store and effectively manage electronic correspondence, browse the web, and proficiently process and manage information on the Internet.

Graduates of university business education programme do not only need to be aware of the dynamic changes taking place in her workstation – the electronic office. They must embrace and acquire relevant technological skills as they are the necessary tools for the performance of their functions in modem electronic offices. They need to successfully and efficiently demonstrate ability and skill in the use of technology both for instructional and administrative purposes. For any graduate of business education to be relevant, competitive and effectively productive, he/she must be well equipped with relevant computer skills as they are the necessary tools for the performance of her duties in ever changing modern electronic offices. This implies that the course contents in business education programme should adequately reflect the needed skills and competencies in computer technology.

Adegbenjo (2014) classified computer technology contents needed in business education programme in the twenty first century as follows: word processing package, spreadsheet package, database management, power point presentation package, internet, digital camera and projectors, microfilming among others. Similarly, the Commission on Information and Communication Technology (2011) grouped them in clusters of word processing, spreadsheet processing application, PowerPoint presentation, database management and internet application. Each of these areas consists of a body of knowledge, skills and abilities which business education graduates must possess in order to stand and function effectively and efficiently in the intensely computerized work place. Word processing for example is designed to enable students understand the impact of information and communication technology in the work place, develop their skills to work effectively and efficiently on any window environment using word processing packages and to apply key health and safety principles in the office.

It involves computerized production of text-based documents such as letters, memos, circulars and reports. Azuka (2007) defines it as the use of computer to handle text and produce typed and/or printed documents. Word processor is a name given to any software that can be used to produce quality documents like letters, memos, faxes and so on. Word processing software allows you to type a letter, write and edit a research paper, create a flyer, publish a newsletter, and print labels. It can be referred to software that replaces the various functions of manual typewriter. Azuka (2007) posited that one significant difference between a traditional typewriter and a computer with word processing software is that before printing onto paper, you can easily edit, re-edit, save and archive documents. Its integration into

business education programme will enable students understand the impact of information and communication technology in the work place, develop their skills to work effectively and efficiently on any window environment using word processing packages. Okoye (2010) remarked that with MS Word, a clean and quality typed document is obtained. The ability of this software goes beyond keying in of text alone. With it, users can create classic write-ups that include pictures embedding, special charts and customize type fonts to mention but a few. According to Okoro (2013) word processing package covers the ability to use a word processor, create files and folders; use input devices to enter and edit texts accurately; manipulate information (opening, copying, cutting, pasting, saving and deleting files); preview, print and save documents among others. Therefore, students are required to develop reasonable level of competence in this area.

Spreadsheet is the use of application programme for financial management and calculation. Microsoft Excel is an example of and the most widely used spreadsheet package. Adiwe (2006) defined Microsoft Excel as a spreadsheet family with grid rows and columns use to produce financial projection and reports. It is a proprietary commercial spreadsheet application written and distributed by Microsoft. In an Excel package, each cell sits on a cell and the user can define what type of data I in each cell and how different cells depend on one another. MS Excel can be used in budget preparation, speedy production of financial statements and graphical representation of data or fact.

Microsoft Excel features calculation, graphing tools, pivot tables, and has the basic features of all spreadsheets using a grid of cells arranged in numbered rows and letter named Column to organize data manipulations like arithmetic operation. It enables users to easily

display information and people can insert formulas to work with the data. According to NBTE (2004), with MS Excel, students are equipped with strong skills to effectively and efficiently work using a computer-based spreadsheet.

The contents of MS Excel as computer application programme covers such areas as: opening a spreadsheet application; placing numerical table titles and use of columns and rows; moving from cell to cell; meaning of clear and delete in MS Excel; entering, editing and manipulating data; creating an arithmetic formulae and using common functions; how to replicate formulae; using common numerical formatting and alignment; managing and printing spreadsheet documents; importance of pie chart, line graph and bar chart; using MS Excel in creating charts and graph; selecting/entering leading and axes titles; formatting axes and labels; setting numerical parameters and format data use legend when appropriate; entering and editing data; designing and modifying the appearance of charts and graph; saving and printing a saved work in MS Excel;

Similarly, adequacy of database management system in business education programme will enable students acquire in-depth knowledge of office information system with particular emphasis on file creation, storage, management and manipulation. It will also enable students to generate management reports using modern computer software application system. Database management system refers to a collection of programs that enables the creation and manipulation of databases.

This application programme exposes students to such area of knowledge and skills such as: definition and importance of database management system; meaning of database, tables, fields and primary keys; meaning of database management system; describes types of

files and identify file organization methods; displaying DBM toolbars and make use of the various menu command; creating new database using database wizards; creating and open a table in a datasheet view; illustrating how table structure could be changed or improved; how to apply DTBS data types; demonstrating formats of entering Data and Time and organizing DTB etc.

Oduma (2010) noted that business education graduates should possess competence in the use of database packages especially MS Access. The author defined MS Access as a program that enables organization to easily create, share and maintain data and files electronically. With database management system like MS Access security of information against unauthorized users highly guarantee. In addition, database integrity is maintained, that is ensuring that no two users are able to update the same record at the same time as well as preventing duplication of entries, such as two employees being give the same employee number (Okwudili & Anigbogu, 2010).

Business education graduates is not only required to have the theoretical and practical knowledge on new technology but to be competent in the use of some relevant computer packages like Excel, data base management, e-commerce, browsing the website, data protection techniques and security and knowledge of how to use search engines (Salami, 2009). Akudolu and Olibie (2007) added that one of the major reforms needed in teacher education in Nigeria has to do with exposing teachers to and facilitating their acquisition of information and communication technology skills.

Telecommunication Technology in Business Education

Telecommunication is the heart of office technology. Telecommunication technology as a component of office technology involves the transmission of information over long distances, often through electronic aids. It is also referred to as electronic communication technology. Generally, any assisted communication in which there are sender and receiver is considered telecommunication. It is the technology of sending signals, images and messages over long distances by radio, telephone, television satellite, internet and so on. (Horny, 2010). The use of electronic communication in teaching enables teacher to impact knowledge and communication over a long distance. It also help to improve the quality of classroom teaching and act as a regular and structured aid to poorly trained classroom teacher in under resourced schools (Nweke, 2013).

In the view of Lawrence (2010), telecommunication technology assists mankind to solve different types of problems because it takes in data, processes them as instructed and produces definite results. The author noted further that the integration of telecommunication, that is wireless visual systems enable users to access, store, transmit and manipulate information. This convergence of audio-visual and telephone networks with computer networks through a single cabling or link system has the capacity to stimulate and enhance learning. Ndukwe (2005) noted that the advent of telecommunication technology has helped to make career path clearer, titles more meaningful, and salaries widely differentiated between levels of responsibilities and skills. Telecommunication technology has tremendous effect on every area of human endeavor and business education is not an exception in this forward match. Business education graduates are required in every facet of human endeavor

no matter the field, be it education, medicine, communication and so on. This technological advancement in the computing and communication industries are in progression and it has led to many changes in office services and procedures thus making its integration in business education programme not just necessary but inevitable. Modern technology has created a wide range of new machines enabling office workers to improve their performance.

Computer and electronic communication technology in the office is a catalyst to the effective functions of secretaries and should not be seen as a replacement. Okiti-Okagbare (2009) stated that in the 2020s, office secretaries may have to function from their homes with the use of modern information technology and sophisticated communication gadgets. It is now easier to send messages by telex, electronic mails, fax and telephones. These innovative methods save time, which indirectly save money too. Okiti-Okagbare (2008) also noted that the involvement in the use of electronic communication equipment, for example fax, email, portable cellular phones laptops, notebook computers, i-pads, will shrink the physical appearance (in size) and expand the functionality of the modern office.

Ezeani (2014) observed that electronic communication technology has in the last century increased the skills of office workers (business education graduates). Nnaji and Bagudu (2012) agreed that today's technological advances demand new kind of office worker, one who is comfortable with office technology and understands how to use it to bring about greater productivity. The authors went further to outline the changes that transform the office worker as: creation of new jobs, electronic communication, replaces expensive travel to out-of-town meetings, employees perform higher level of task, increase of electronic mail, personal computers with ever-expanding applications are being used,

emphasis are laid on maximizing costs and productivity, information and data are electronically stored for almost instant access, and lot of telephone companies and services are available.

In addition to the above, electronic communication technology has helped to develop more advanced economies by simplifying difficult tasks. Ezeani (2014) buttressing on the relevance of this technological development to business education programme noted that it acts as catalyst by providing tools which teachers used to improve teaching by giving learners access to electronic media that make concepts clearer and more accessible. The role of electronic communication technology in teaching and learning of business education according to Chinelo in Utoware and Nosakhare (2012) are thus, delivery mechanism, complement to instruction and instructional tool. This is in agreement with the view of Osuala (2009) who perceived it as a promoter of teaching and learning environment, course and programme of study in business education, gateway to vast sources of information for staff and students in academic, tools for increased productivity and professional effectiveness, improved business education outreach and standard globally.

One of the major aspects of electronic communication technology in which graduates of business should be adequately exposed is webpage development and administration. This aspect of office technology application is designed to enables students to understand the importance of designing web pages for modern offices, have full command of a web design software application to improve business online performance and understand the impact of using the internet for business and commerce in the modern economy. Web page design

involves use of computer application program such as MS FrontPage to create and format a web as well as hyperlinks.

FrontPage is a member of Microsoft Office Suite with Hyper Text Mark-Up Language (HTML) editor. It was designed to make it possible to easily create web pages and sites. Web page can be created either by web wizard or web template. Usually, it is best to create simple one page web and to add additional blank pages as many as needed. The location of web is entered in the web box which will begin with http://. In this design, web can be previewed and copied to the server for viewing in the www. Graphics and photos can be inserted or placed in the image folder. Other features of webpage page design which constitute the competencies required to create a web page also include using report view to identify broken hyperlinks for correction and fixing large pages that take long time to load. Hyperlinks here are commands in creating links option where text or graphics that can be clicked to bring the user to another web file such as graphics. They are the essence of the World Wide Web as they link pages within sites and web sites to other web sites.

Bookmarking is also a feature of web page design application. Bookmark option is used to set text or graphics that can be linked to within a page. This method allows visitors to a site to quickly access information by not having to scroll down to page to view the information they want. FrontPage application also allows the insertion of symbols and images setting of margins and creation of table. When table is created, it can be resized, aligned and modified as required. It can also be fashioned with colours and borders.

Webpage design exposes students to the rudiments of web contents, designs and how they function. With webpage design, students are exposed to how to create a new webpage using web wizard, how to set margins, how to keyboard text into a webpage, how to open an existing webpage, how to save a webpage and how to close an existing webpage. Also the contents of the programme will enable the students to apply themes, change background colour, how to create links and how to insert graph. Again, the students are taught how to add a page to the website, launch a website on a server, how to insert sound, set bookmark and how to create link to a bookmark (NBTE, 2004).

In the view of Nweke (2013), telecommunication technology in business education can be classified into:

Radio and Television: These according to the author are audio and audio-visual technology widely used in education as educational tools. There are three approaches to the use of radio and television in teaching and learning: direct class teaching where broadcast programming substitutes for teachers on a temporary basis; school broadcasting where broadcast programming provides complementary teaching and learning resources not otherwise available and general educational programming or communication, national and international stations which provides general informal educational opportunities (Nweke, 2013). Radio and television as instruction technology is aimed at improving the quality of classroom teaching and act as a regular, structured aid to poorly trained classroom teacher in under resourced schools.

Facsimile (Fax) Transmission; involves machines designed to transmit graphical information via normal telephone lines. After a special fax number is dialed and the phone connection

established, documents are fed through the machine which takes approximately one to six minutes to scan and convert the information into electrical impulse. The impulse are carried across phones lines and a receiving machine changes the impulse back to text or graphic, making a cop of facsimile of the document in the sending machines. Fax communication has become a popular alternative to express mail because it is faster and generally less expensive (Nweke, 2013)

Mobile Phone is one of the most price possessions among users today. Mobile phone can be used by teacher for educational purpose. It increases access for those who are mobile or cannot physically attend learning institutions – those who would not otherwise be able to follow courses in a traditional educational setting due to constraints of work, household activities or other competing demands on their time. Mobile phone technology makes education more accessible in that it enables learners to pursue their studies according to their own schedule.

Visser and West (2005) suggested that use of mobile phone technology can also increase access where cost represents a significant barrier to learning. For those in rural or remote locations where environmental and infrastructural challenges hinder other learning modalities, the use of mobile phone technology presents great opportunities. For the individual learners, mobile technology is much more cost effective than other technologies like computer, broadband connections and so on. In as much as mobile technology presents a more cost effective medium of teaching and learning, represents an important avenue by reducing the gaps between the haves and the have-nots in contemporary society where access to knowledge and information is increasingly important (Vanweert, 2005).

Teleconferencing can also aid educational activities through telephone. Teleconferencing is an interactive electronic communication among people located in two or more places. According to Nweke (2013), teleconferencing refers to telephone calls where more than two people can discuss at the same time. It means meeting through a telecommunication medium. It is a generic term for linking people between two or more locations by electronics. Teachers can group students to perform certain education activities during break or holidays. The group can discuss and carryout the assignment through teleconferencing technology. This same is applicable to teacher and his students when the teacher is not disposed to enter classroom.

Tinio (2003) explained that teleconferencing technology is used in both formal and non-formal learning context to facilitate teacher-learner discussions, as well as to access experts and other resource persons remotely. In open and distance learning, teleconferencing is a useful tool for providing direct instruction and learner support, minimizing learner isolation. The author also listed four types of teleconference based on the nature and extent of interactivity and the sophistication of the technology: audio conferencing, audio-graphic conferencing, videoconferencing and web based conferencing. *Audioconference* which involves live real-time exchange of voice messages over a telephone network. It interactively links people in remote locations via telephone lines. When low-bandwidth text and still images such as graphs, diagrams or pictures can be exchanged along with voice messages, then this type of conferencing is called *Audiographic teleconferencing.* It uses narrow band telecommunication channels to transmit visual information such as graphics, alpha-numeric, documents, and video pictures as an adjunct to voice communication. Devices include electronic tablets/boards, video terminals, integperceived graphic systems (as part of personal

computers), fax, slide projectors, optical graphic scanners and voice/data terminal. Audiographics can also be used for meetings and distance learning. Non-moving visuals are added using a computer keyboard or by drawing/writing on a graphics tablet or whiteboard.

Videoconferencing allows the exchange not just of voice and graphic, but also of moving images. Videoconferencing technology does not use telephone lines but either a satellite link or television network (broadcast/cable). It can display anything that can be captured by a television camera. The advantage is the capability to display moving images. It can create a social presence that resembles face-to-face meetings and class and enables participants to see the facial expressions and physical demeanor of participants at remote locations graphics are used to enhance understanding. *Web based conferencing* as the name implies, involves the transmission of text, graphic, audio and visual media via the internet; it requires the use of computer with browser and communication facilities. While telex is a switched network of teleprints similar to a telephone network for the purpose of sending text based messages.

Removing telecommunication technology from the modern information society is impossible because it is a dynamic area of expertise where knowledge of technology and innovation sciences are combined. However, its utilization in many schools in Nigeria has remained a mirage due to a number of constraints (Manir, 2009). According to Hawkins (2005), little knowledge of telecommunication technology usage in classroom is observed among many business teachers as their students prove naïve of modern technology practices in their trainings. This has been attributed to such factors as inadequate fund available to schools, high cost of office technology equipment and electronic devices and constant electric power failure (Ohakwe and Njoku, 2010)

Multimedia Technology in Business Education

Multimedia technology according to Wikipedia are those technological facilities that combines five basic types of media into learning environment e.g. text, video, sound, graphic and animation thus providing a powerful teaching learning environment. Multimedia in teaching provides students with the technical steps needed to produce multimedia document, encourage deep reflective thinking and empower students to create and design rather than absorbing representations created. Akintola (2005) added that multimedia system involves an exciting mix of graphics, text animation and photographs on computer system as it combines movies, sound and animated graphics to achieve results. Roblyer and Edwards (1998) stated that the advent of multimedia technology has rapidly transformed the scenario in using instructional technologies in the educational institutions, particularly in tertiary institutions. Ohakwe (2008) remarked that with multimedia technology, a teacher can create educational presentation that can add variety and vitality to his teaching thus, making it refreshingly new, interesting, real, persuasive and lasting in the memories of learners. Similarly, Ndukwe (2005) noted that presentation created with multimedia technology can add audio and visual effects making them look professional or flashy to meet high standard of presentation.

Multimedia contents as an aspect of office technology is designed to equip students with strong skills to effectively and efficiently work using a computer-based visual aid presentation applications e.g. MS Power Point. Microsoft Power Point is a presentation package. It is designed to help users organize, illustrate, and present information to classroom, conference, and other audiences. It is highly versatile tool for teachers and

presenters (Beta Computers, 2011). Ohakwe (2008) explained that power point is software that enables a user to create a powerful presentation to his audience. It allows the user to include formatted text, graphics, pictures, sound and animation in the presentation. Using Microsoft Power Point application program as multimedia software, students are exposed to power point presentation competencies such as:

Creating Presentations: Creating a presentation in MS Power Point involves starting with a basic design, adding new slides and contents, choosing layouts, modifying slide design by changing the color scheme or applying different design template and so on.

Change Slide Background: MS PowerPoint enables users to change the background of the presentation slides. To apply the change to a slide, one has to select the slide in normal view. Otherwise, the change applies to all slides that follow the design template of the currently selected slide. The slide background features in obtained in Format Menu. Among them are different colour scheme, fill effects, shading styles, texture, pattern and so on.

Editing Text in a Presentation: when one starts with a blank presentation or chooses a design template, the text prompts within individual slide such things as click to add text. Texts are simply created by clicking the box and typing the necessary text. The user can equally be deleted, modified or added to fine tune the message.

Viewing Presentation: Powerpoint has four views to help users create, organize and display presentations: Normal, Slide sorter, Notes page and Slide show. Clicking the view buttons at the bottom of the presentation window enables the user to switch among different views. These views can also be accessed using commands on the View Menu.

Creating Chart: Charts are very helpful in presentation because, they show data, trends and concepts in simple graphical ways.

Importing Chart Data: Power Point allows users to import data into a datasheet even when such data is created in another program. For example, data created in a table stored in MS Excel can be imported into Powerpoint for the purpose graphical presentation.

Changing Font Attributes: The formatting of power point slides is automatically done when text is typed in a textbox. Powerpoint puts the text in a font, size and style that matches the rest of the presentation. However, Powerpoint is changeable and such that user can alter the look and placement of text to the desired taste. Few of the simple formatting changes in Powerpoint are italizing and boldfacing, changing of colour of a title, changing bullet characters on a bullet list, modifying indent level, changing text alignment and spacing.

The Use of Drawing: This is done by making use of the various items on the Drawing Toolbar like autoshapes, line style, arrow style, line colour and font colour. Such menu like group, ungroup, order, snap rotate and so on can also be used to make presentation more illustrative.

Applying Header and Footer: Headers and footer contain useful information about a presentation such as the author, company name, date and time, and the page number. Users can quickly and easily add a header or footer to a slide, audience handouts, outlines and speaker notes with the Header and Footer command on the View menu.

Applying Animations: Animation involves adding special visual effect to text or an object on slides to make presentation more interesting. For instance, a text bullet point can be made to

fly in from the left, or hear the sound of applause when a picture is uncovered. With Power Point, user can animate any number of objects on a slide easily.

Jegbefume and Utebor (2014) noted that multimedia systems are indispensible tools in any education system, as it has the potentials of improving teachers professional development, promoting the quality of learning materials, increasing self efficacy and independence of learning among students and meeting the learning needs of individual students. Examples of multimedia technology according to Nweke (2013) are: video conferencing, interactive white board, DVD, slide projectors and so on

Video conferencing is a set of interactive communication technologies which allows two or more locations to interact via a two way video and audio transmissions simultaneously. Anissimove (2011) in Nweke (2013) defined video conferencing as a communication technology that integrate video and voice to connect remote users with each other as if they were in the same room. Each user needs a computer, webcam, microphone and broadband internet connection for participation in video conferencing. A user sees and hears each other in real time allowing natural conversations not possible with voice only communication technology. Video conferencing according to Wikipedia (2008) is necessary when visual information is an important component of the conversation, the expenses or time travel is a consideration, a live conversation is needed and the parties involved cannot physically come to the same location. This technology provides teachers and students the opportunity to learn by participating in two way communication forums. More so, teachers, world-wide can be brought together from remote locations for interactive sections like conferences and seminars (Nweke, 2013).

Multimedia projector: This is designed to project video signals and video on a screen. Such projector is a complex electronic device; however, it is quite easy to control. With multimedia projector, students no longer have to crowd around a computer monitor to view presentation, websites or training programme. It directly engages students and makes impact to each lesson. Multimedia projector can be used by the teacher for seminar presentation and classroom instructional delivery.

Digital Versatile Disc DVD: This is an optical disc storage format that can be useful for education purposes. Examples like encyclopedia, textbook, project work can be recorded in DVD and used for teaching and learning. Educational video can also be showed by teacher in this format for better understanding.

Interactive Whiteboard: This is a large display that connects to a computer projector. The projector projects the computer desktop onto the board surface, where users control the computer with a pen, finger or other devices. The board is typically mounted to a wall or floor stand (Nwokocha and Onwuchekwa, 2014). As noted by Sabrinah (2008), interactive whiteboard is not only an innovative tool which meets cognitive and learning style, but also different intelligences in a group class. This recent technology she asserted has inspired many teachers to further expertise in teaching and facilitates learning.

In recent years in Nigeria, according to Nwokocha and Onwuchekwa, (2014), most tertiary institutions are showing a rapidly growing trend in integrating information technology into educational programmes. The attention of educators they asserted is now moving away from the conventional “chalk and talk” method to one which used multimedia as instructional media and a platform in teaching and learning, thereby transforming the traditional chalk board to interactive whiteboard. Interactive whiteboard according to Roberts

(2009) supports interaction and conversation in the classroom and helps in the presentation of new learning.

Multimedia elements according to Lindstorm cited in Nwokocha and Onwuchekwa, (2014), reinforces the message and the delivery, which leads to a better learning rate. The power of multimedia lies in the fact that it is multi-sensory, stimulating the many senses of the audience, which consequently leads to better development in interactivity making the audience involved in communication process and in navigation of the content. Lindstorm added that research has shown that interactivity enhances retention in learning. In the same vein, Bransford, Brown and Corking, (2000) revealed that the products of modern technology can play various roles in teaching and learning process because these products have the potential to enhance students' academic achievement.

For obvious reasons, adequacy of multimedia technology contents in business education programme is not contentious because if its graduates are to be relevant, they must study with them while at school as they will be required to function with them not only on their chosen careers or occupation but also in the society today. However, Akpotohwo and Galadima (2012) lamented that the ever-changing role of office technology poses a lot of challenges for all educators including business educators. They further outlined the challenges thus; need for business educators to update their knowledge in the areas of software and hardware skills as well as to learn new technological based information; slow adaptation of business educators to technology poses a serious threat in using multimedia facilities in developing business students. According to the authors, inadequate provision of government policy on information technology education for training trainees for new jobs

that will be occasioned by automated devices in the course of complex and computerized transactions is a challenge to business educators in Nigeria.

In the view of Onwukwe and Aliche (2012), business education programme is capital intensive in nature in terms of procurement of the multimedia equipment and facilities used in delivering the business education courses. Such facilities according to the authors included computer, internet, electronic mail services, dial access system, telephone system and accessories. From the look of things, when business education programme lacks the above mentioned facilities, the programme, business educators as well as the students will be adversely affected in the business world. Inije (2012) sees lack of access to technology, inadequate technical support staff, poor teachers' commitment to skill acquisition, poor incentive for teachers, poor goal setting for technology use, prohibitive cost of equipment and acute manpower shortage as other challenges of office technology in business education profession.

In a related manner, Ajaja (2011) identified the absence of or inadequate technological infrastructure and technical support to be major challenges confronting the integration of modern office technology in teaching and learning. In his view, educational institutions must provide computers, electronic network, slide projectors, electricity etc., teachers must have access to on-site technical support personnel who should be responsible for trouble shooting and the provision of assistance after technology and lesson are put in place. According to the author, time tabling is another challenge, this he regards as structural changes in the school day where the time allocated for teaching per period is grossly inadequate. Weak infrastructure has been considered a formidable obstacle to the integration of office technology. This is as a result of the fact that office technology products or tools

like computer, internet, projectors that now occupies important position in the teaching and learning process are made to function with other infrastructure such as electricity. Regrettably, Nigeria has been having difficulty in providing stable and reliable electricity supply (Amiaya, 2014).

In a similar view, Miller (1997) asserted that business educators face the challenge of using computer and multimedia technologies in their instructional delivery in a manner that enhance students' learning and achievement. Miller added that appropriate use of these resources by business educators in the classroom can help equip future business education graduates with the necessary knowledge and skills to use same tools effectively in their classroom. Moursund (2005) noted that multimedia tools have been a potential in contributing to the substantial improvements in the educational system. The author added however, that relatively little of this potential has been achieved in spite of multimedia tool like interactive whiteboard having significant impact on traditional school system.

In the light of the above, Nwokocha and Onwuchekwa, (2014) noted that the training of lecturers and professional development is essential for the effective use of multimedia technology. Office Technology Assessment (OTA, 1995) in Nwokocha and Onwuchekwa, (2014) noted that while there is increased attention to the need to prepare lecturers to use modern technology effectively, most business education graduates still have limited knowledge of how technology can be used in their professional activities. They opined that to ensure that lecturers can effectively integrate office technology and other related tools into instruction, a comprehensive set of guidelines for general technology training should be adopted.

Networking Technology in Business Education

One of the key office technology components that are indispensible for effective technological development of business educators is the networking or internet technology. Networking technology according to Akintola (2005) is the interconnection of two or more computer system with data communication devices. It consists of communication software, computer systems and network cable. Akintola noted further that networking reduces duplication of computer resources thus enabling the scarce resources to be shared among computer system; allows the sharing of files, application, software products, printer, disk space, modem and e-mail facilities. The author also categorized computer network into two: wired and wireless network. A wired network is a network that involves the use of network cables to establish a link among the computer systems while wireless network is a network that makes use of radio waves to transmit data or information from one computer system to another.

Internet according to Nweke, (2013) is a global system of interconnected computer network that carries an extensive range of information resources and services such as www, e-mail, search engines, etc. It can be referred to as the network of networks that consists of millions local networks linked by a broad array of electronic, wireless and optical networking technologies (Wikipedia 2015). It is referred to as the largest network of computers in the world today (Okoye, 2010).

Nweke (2013) was of the position that teaching with internet facilities equips the learner on how to search for information online, share online resources, chat and discuss with groups in remote location, use electronic mail; creating an e-mail address; emphasizing the value of username and password; composing, replying and sending emails; opening attached

file and attaching file to an e-mail message; Identifying methods for developing competitive web page in business; scope and impact of and opportunities in e-commerce and so on.

Ahukannah and Ikelegbe (2011) stated that development towards internet involves determined conscious effort to become skillful, efficient and make advances in a chosen career. Anioke (2007) posited that the technical explosion and the electronic revolution widely taking over the world are creating a new way of living and working in the society. Anioke pointed out that this current technological advancement will automatically place new demands on the educational system, such areas of demand will involve the educational level, skills, experience and attitude of the work force. Njoku and Nwosu (2014) added that for business education graduates to meet the global challenges, it is necessary to prepare them for a workplace where responsibilities are constantly changing, where vertical management is replaced by networking, where information passes through multiple and informal channels, where initiative-taking is more important than obedience and where strategies are especially complex because of the expansion of markets beyond national borders. The authors added that business education must help individuals to perform tasks for which they were not originally trained, to prepare for a non-linear career path, to improve their team skills, to use information independently, to develop their capacity for improvisation as well as their creativity, and finally to lay the basis of complex thinking linked to harsh realities of practical life.

It is therefore necessary for business educators to embrace the current realities of office technology in order to produce graduates who will be able to withstand the demands of the modern work place. Pashkevich (2012) believed that that business schools around the

world still strive to figure out how to add appropriate technological related content to their programme. More so, the author observed that many institutions have incorporated a substantial level of global content into their programmes but with insufficient attention to ensuring that the right content is incorporated. Areas like teaching methodologies and content especially office technology needs of the society and that of individuals must be greatly considered.

Chukwumezie (2005) recommended that internet and networking skills needed by business educators include use of file server, connect log on, retrieve a program or document, save a document to a specified location, share files with others on a network, knowledge of area network, including network access rights, security passwords, file server and zone, connect to internet, knowledge of connecting to the internet or an online service using the computer and modem. Nweke (2013) added that provides opportunity for individuals, schools and organizations to communicate with each other and to share information through such mechanism such as world wide web, google, facebook, online videos/YouTube, Twitter and e-mail.

Mbaezue (2010) remarked that e-mail is widely used internet application that enables individuals or groups of individuals to quickly exchange messages, even if they are separated by long distances. In the view of the author, business clients and partners use e-mail to send a host of business documents such as invoice, letters, proposals, legal documents and so on, thus emerging an absolute paperless office which requires that all information are to be created, transmitted and stored electronically. This advancement in technology the author posited has helped to enrich and widen the science of secretarial profession in terms of speed,

quality, accuracy and variety, in that, a memorandum would be prepared at a computer terminal and transmitted electronically to the recipient's computer; in the meantime, the memorandum would also be stored electronically in the sender's computer system memory and the recipient would read the memorandum at the terminal and file it for future reference by striking proper keys at the terminal keyboard.

From the knowledge and skills domiciled in internet and networking technology, business education students can set up internet business upon graduation. In agreement with the above view, Isyaku (2011) posited that many companies throughout the world today intend on transforming themselves into global business power houses via major investments in global electronic commerce and other information technology initiatives. Therefore, if business educators want to be major players in the global market place of technology and ideas, they should prepare their students for the new environment of today and the future. In other words, the education programme should embrace office technology in its totality.

Desktop Publishing Technology in Business Education

Desktop publishing technology is a skill that is used for the creation of documents using page layout software on a personal computer. It is the process of using computer and specific types if software to combine text and graphics to produce documents such as newsletters, brochures, posters, books and so on (Azuka, 2012). Agomuo (2005) added that desktop publishing is an application that may be used for carrying out activity involved with the production of published documents such as books and calendars and not only books but other services such as typesetting, page designing, graphics and so on which go into producing a camera-ready published material. It has made a substantial revolution in the

quality and ease of publications by saving the resources needed to produce a document, and reduce the turnaround time in traditional publishing process. Okoro and Okoro (2009) asserts that desktop publishing skills include; ability to open a desktop publishing environment, ability to identify and use documents; produce a simple publication; set up page size/orientation and margins of a flier; create quality and attractive text area/text frame; and so on.

According to National Board for Technical Education NBTE (2004), desktop publishing programme such as Microsoft Publisher equip students or learners with knowledge, skills and abilities such as differences between word processing and desktop publishing software; basic competencies in using desktop publishing concept to produce a simple publication; setting page size/orientation and margins; creating quality and attractive text area/text frame; setting up column width/spacing; using serif/sans and serif font to create impact on audience; using multiple font sizes applying accessibility standard; importing text/images from different sources; entering headings and use of line or border feature to produce quality and impacting messages; applying alignment and justification; setting paragraph spacing/first line indent; moving and resizing image; fitting headline text to page width; balancing column; creating new publication; saving master page/template; saving publication; printing composite proofs and closing the application programme

The presence of desktop publishing in school curriculum is designed to enable students to develop their skills using publication software in the office. It exposes students to the differences between and importance of a word processor and desktop publishing in the office. According to Azuka (2012), desktop publishing is the act of using software on a

personal computer to combine mixed-media element such as text, photos, or charts into printable documents. It is the ability to arrange text and graphics in such a way to effectively communicate ideas, create documents such as posters, greeting cards, newsletters, and brochure. Unlike word processing applications, desktop publishing software permits users to modify multiple elements within a document via master pages. In the view of Muter (2003) MS Publisher can help create sophisticated publication using a mixture of graphics and text.

Desktop publishing software and word processing software are designed to work with documents of one form or another. While word processing software primarily intended to help compose documents desktop publishing software is primarily intended to help finish those documents by combining graphics and text and preparing them for publication. In the view of Negron (2007) desktop publishing software like MS Publisher is more flexible in the text, graphics and even tables since all are independent elements. He noted further that all that is required is precisely maneuvering and positioning of these elements that enable complicated layout to be achieve in a professional manner.

Empirical Studies

Some studies have been carried out and documented on evaluation, office technology and business education programme. As a result of their relevance to the present study, they are hereby presented under the following subheadings.

Computer, Telecommunication and Multimedia Technologies

Bolarinwa and Adeola (2012) conducted a study on emerging challenges in the use of computer technology in business education instruction in Nigerian colleges of education. The

purpose of the study was to determine the emerging challenges arising from the use of computer technology in delivering instruction to students by business educators in Nigerian colleges of education. The study adopted survey design. Two research questions were raised to guide the study. The population of 145 business educators was sampled from fifteen colleges of education (5 federal colleges, 5 state colleges and 5 private colleges of education) in the south western part of Nigeria to allow for equal representation. Questionnaire was used to elicit the business educators' level of computer anxiety, computer self-efficacy and computer applications usage in instruction. Findings from the study revealed that computers are being integrated but were not effectively used in classrooms instructions because of low understanding of the computer proficiency among educators. It was recommended among others that lecturers should be provided with computer for them to stay current with computer technology and regular training and development programme should be organized for lecturers for them to get familiar with technological growth and development.

The study carried out by Bolarinwa and Adeola is related to the present study on the ground that both studies involve computer technology in business education programme in tertiary institutions. However, the two studies differ because Bolarinwa and Adeola focused on the use of computer technology in instructional delivery in business education programme in colleges of education in Nigeria while the present study is concerned with the computer technology contents in business education programme in universities in south-south and south east Nigeria.

Vin-Mbah (2015) conducted a study on business educators' utilization of multimedia and hypermedia technologies in the tertiary business education classroom in Anambra State.

Three research questions guided the study and two hypotheses were tested at 0.05 level of significance. The study was a descriptive survey study. The population of the study comprised all 75 business educators in the Department of Vocational Education in five tertiary institutions in Anambra State. A researcher-developed questionnaire with 47 items which was duly validated by experts in the field was used to collect data. Mean was used to answer the research questions and z-test was used in testing the two hypotheses at 0.05 level of significance. Findings of the study revealed that business educator in tertiary institutions in Anambra State do not utilize multimedia and hypermedia technologies in the business education classrooms. The findings also revealed that disorientation, distraction, cognitive overload, inability to moderate students' characteristics, lack of methodology in utilizing hypermedia, lack of training, problem of integration of media and absence of multimedia and hypermedia were factors affecting the utilization of multimedia and hypermedia technologies in the tertiary business education classrooms. Based on the findings, it was recommended among others, that business educators should be trained and retrained on appropriate methodologies of utilizing multimedia and hypermedia technologies in the business education classroom and that federal and state governments should make available, fund and infrastructures that will promote the utilization of multimedia and hypermedia technologies.

The study carried out by Vin-Mbah is related to the present study on the ground that both studies considered multimedia technology in business education programme in tertiary institutions. However, the two studies differ because Vin-Mbah's focus was on the use of multimedia technology in instructional delivery in classroom in tertiary institutions in

Anambra State while the present study is concerned with the multimedia technology contents in business education programme in universities in south-south and south east Nigeria.

Networking and Desktop Publishing Technologies

Ezenwafor (2012) carried out a study on adequacy of exposure to information and communication technology by graduating business education students of tertiary institutions in Anambra State. The study sought to ascertain the adequacy of exposure received by graduating business education students of tertiary institutions in manipulating and utilizing various ICT equipment and software resources. Survey design was adopted for the study. Areas of the study was Anambra State. Population of the study comprised 418 graduating business education students of four tertiary institutions in the area and proportionate sampling technique was used to select 199 for the study. Two research questions guided the study and four hypotheses were tested at 0.05 level of significance. A 4-point rating scale questionnaire with 46 items covering various ICT equipment and software resources was constructed, validated and used for data collection. Reliability coefficient of 0.86 and 0.89 were obtained for the two sections of the instrument using Cronbach Alpha. Mean and standard deviation were used to analyze data in order to answer the research questions and determine the homogeneity or otherwise of the respondents means while t-test was used to test the hypotheses. Results revealed that, on the average, the respondents were not adequately exposed in manipulating ICT equipment but were, in utilizing the software resources.

Also, respondents did not differ significantly in their mean responses as a result of gender and institution type. Consequently, it was recommended among others, that

equipment supply for ICT training should go beyond computer hardware and software resources to include others used in the modern office like scanners, telex/fax machines, video, projectors etc.

The study of Ezenwafor has relationship with the present study because both studies considered desktop publishing technology and networking technology in business education programme in universities. While Ezenwafor's study focused on adequacy of exposure to desktop publishing technology and networking technology by graduating business education students of tertiary institutions in Anambra State, the present study is limited to desktop publishing and networking technology contents in business education programme in universities in south-south and south east Nigeria.

Wogboroma (2015) conducted a study on assessment of internet usage on business education students: Implication for effective teaching and learning in River State. Two research questions guided the study. A structured questionnaire served as main instrument of the study. Population for the study was 620 students while 250 were used as sample size. Mean rating was used to analyze the research questions. Findings of the study revealed that internet usage has effect on business education students. Based on the findings, it was concluded that internet usage is an indispensible teaching and learning tool for any effective teaching and learning. It was recommended among others that business education students should be encouraged to be more effective in the use of the internet.

The study carried out by Wogboroma is related to the present study on the ground that both studies involved networking technology in business education programme in tertiary

institutions. However, Wogboroma focused on the use of internet technology in business education programme in tertiary institutions in Rivers State while the present study is concerned with the networking technology contents in business education programme in universities in south-south and south east Nigeria.

Ndinechi and Ementa (2013) carried out a study on business education students' rating of the teaching of word processing and desktop publishing skills in tertiary institutions in south east Nigeria. The study was guided by two research questions and one hypothesis was tested at 0.05 level significance. The study adopted a descriptive survey design. A sample of 350 students were selected using simple random sampling technique from a population of 791 students in federal, state and private universities and colleges of education in south east Nigeria. Questionnaire was the instrument used for data collection. Mean score, standard deviation and t-test were used for data analysis. The results indicated that word processing was perceived well taught while desktop publishing was perceived poorly taught. The results of the test of null hypotheses suggested a significant difference in the mean rating of respondents. It was concluded that, business education students rated word processing and desktop publishing skills poorly taught. It was recommended that business education students should effectively be taught desktop publishing skills as they are contained in the curriculum.

The study carried out by Ndinechi and Ementa is related to the present study because, both studies involved desktop publishing technology in business education programme in tertiary institutions. However, the two studies differ because Ndinechi and Ementa focused on the teaching of desktop publishing technology in business education programme in tertiary institutions in south-east Nigeria while the present study is restricted to the desktop

technology contents in business education programme in universities in south-south and south east Nigeria.

Summary of Review of Related Literature

The review of related literature for this study addressed a number of relevant concepts which include, the concept of evaluation, office technology and business education. evaluation is a process of making a formal judgment about the value of something say a programme having examined the strength and weaknesses and thereby finding ways to overcome the weakness and this is a function carried out by individuals who are considered experts or knowledgeable in the matter under consideration. This is why this study considered business educators appropriate for this evaluation. Office technology in the context of this study agreed with the position of Fadare (2014), who noted that office technology means a variety of equipment, software and systems. It comprises a set of sophisticated telecommunication equipment, computers, word processors, information technology resources – coupled with management techniques that have changed the old work habits thereby resulting to complete job designation and acquisition of new skills.

Business education in the sense of this study is restricted to business teacher education whose goal is to produce well qualified and competent graduates in business subjects and office technology; who will be able to teach all business subjects in secondary schools and implement office technology and management curriculum at the post secondary level of education.

The study explored the Prosser's theories of vocational education as the theoretical foundation upon which this work is built. Four theories out of sixteen theories of vocational education by Prosser were considered in this study among which are: theory of environmental habit, theory of experienced instructor and the theory of industry standard.

The theoretical studies was conducted in line which the purpose of the study under the following headings; office technology in business education, information technology in business education, telecommunication technology in business education, multimedia technology in business education, networking/internet technology in business education and desktop publishing technology in business education. Finally, several related empirical studies were reviewed.

From the reviewed literature, it has been seen that no research work has specifically focused on perceived adequacy of office technology contents in business education programme in universities in south-south and south-east Nigeria. This gap in literature is what the present study intended to fill. Therefore, it has become necessary to embark on the study.

CHAPTER THREE

METHOD

This chapter describes the procedure that was adopted in the study. It was organized under the following sub-headings: research design, area of the study, population of the study, instrument for data collection, validation of instrument, reliability of the instrument, method of data collection and method of data analysis.

Research Design

This study utilized descriptive survey design. Nworgu (2015) indicated that survey design is most appropriate when the subject of an investigation is directed towards individual opinions or views, attitudes and rating purely on personal basis. The descriptive survey design was therefore considered appropriate for the study because it was focused on the perception of business educators regarding adequacy of office technology contents in business education programme of universities in South-south and South-east Nigeria.

Area of the Study

This study was carried out in universities in South-south and South-east geo-political zones of Nigeria. The area is located in the southern part of Nigeria, bounded with other geopolitical zones (South West and North Central), the Atlantic Ocean and the Republic of Cameroun.

The area comprises the following states: Bayelsa, Rivers, Akwa Ibom, Cross River, Edo, Delta State Abia State, Anambra State, Ebonyi State, Enugu State and Imo State. The people in this region have diverse cultural background. The people of South-south and

South-east are widely known for farming and commercial occupations because of the abundant creeks, lagoons, rivers and rich soil within which fishing, farming and commercial activities are practiced. The South-south and South-east people are educationally inclined. This is evidenced by large number of schools and tertiary institutions in the region. The choice of this area was informed by this high value placed on education and the fact that there are 15 universities offering business education programme in the area.

Population of the Study

The population of this study comprised all business educators in universities in South-South and South-east Nigeria. The population of the study was made up of 126 business educators in universities in South-south and South-east Nigeria, comprising both males and females with varied qualifications and years of teaching experiences as university business educators. This information was obtained from business education units in various universities in South-south and South-east Nigeria. The entire population was studied since the size is manageable. Hence, no sampling was done.

Instrument for Data Collection

The instrument that was used to elicit data for this study was a structured questionnaire titled: Perceived "Adequacy of Office Technology Contents of Business Education Questionnaire (PAOTCBEQ)" which was developed by the researcher with insight gained from literature reviewed. It consisted of two parts; A and B. Part A focused on respondents' personal and demographic data such as: educational attainment, and years of teaching experience while Part B was made up of five sections, B1 to B5, covering the five research questions. The sections (B1, B2, B3, B4, and B5) contain items on computer

technology, telecommunication technology, multimedia technology, networking technology and desktop publishing technology respectively.

The instrument was structured on a 5-point rating scale with the following options: Very Adequate (VA), Adequate (AD), Barely Adequate (BA), Inadequate (IA) and Very Inadequate (VA). Respondents were instructed to examine the items in Sections B1 – B5 of the questionnaire vis-à-vis the course contents of the business education programme of their universities and then rate how adequate they considered the office technology contents in the business education programme of their universities with respect to the items of the questionnaire.

Validation of the Instrument

To establish the face validity of the instrument, three experts were given the instrument alongside the purpose of the study, research questions and hypotheses. Two of the experts were from Business Education Unit in the Department of Vocational Education, Nnamdi Azikiwe University Awka, while the other one was from Measurement and Evaluation Unit in the Department of Educational Foundations, Nnamdi Azikiwe University Awka. The experts were chosen in consideration of the fact that they have the knowledge and experience in construction of research instruments. They were requested to modify the instrument to ensure that it is clear and adequate both in content and in arrangement. These experts modified some instructions and items and added new ones which increased the items from 60 to 64 in number. Their comments and suggestions were taken into consideration in producing the final copy of the instrument.

Reliability of the Instrument

The reliability of the instrument was established using Cronbach alpha (α) reliability test from a pilot test administered to 10 business educators from two universities outside the area of study. Their responses were analyzed using Cronbach alpha (α) formula to ascertain the instrument's reliability. The reliability coefficients were found to be 0.75, 0.72, 0.85, 0.88 and 0.78 for Sections B1, B2, B3, B4, and B5 respectively and the overall reliability coefficient obtained was 0.76 which was considered high enough for the instrument to be reliable as posited by Nwana in Nworgu (2015) that any instrument with r value of 0.60 and above is considered to be reliable.

Method of Data Collection

Copies of the questionnaire were personally administered on business educators by the researcher during the 2016 Association of Business Educators of Nigeria (ABEN) National Conference held at Federal College of Education (T) Omoku between 10^{th} – 15^{th} October, 2016. The questionnaire was also administered on business educators who were not reached at the conference with the help of research assistants. These assistants were drawn from among members of staff in the universities in south-south and south-east Nigeria where business education is offered. The use of assistants who are members of staff helped in reaching all the respondents and fast tracking the administration of the questionnaire. The assistants were properly instructed on the modalities of the administration of the questionnaire. The use of telephone calls, messages and email assisted the researcher to adequately monitor the activities of research assistants. Out of 126 copies of questionnaire

distributed, 116 were returned and used for this study. This shows that ninety two percent success on the retrieval of the completed questionnaire was recorded.

Method of Data Analysis

The data collected for the study were analyzed using mean ratings and the t-test inferential statistics. The mean rating was used in answering the research questions while the hypotheses were tested using the t-test statistic at 0.05 level of significance. The response options in the questionnaire are shown below:

Response	**Options**	**Rating**	**Boundary Limits**
Very Adequate	(VA)	5	4.50 – 5.00
Adequate	(A)	4	3.50 – 4.49
Barely Adequate	(BA)	3	2.50 – 3.49
Inadequate	(I)	2	1.50 – 2.49
Very Inadequate	(VI)	1	1.00 – 1.49

Decision Rule:

Decisions were taken based on the clusters mean relative to the real limit of numbers above. A null hypothesis was not rejected where the calculated t-value was less than the critical or table value and rejected where the calculated t-value was equal to or greater than the critical value at 0.05 level of significance.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

This chapter presents the data collected and the statistical analysis of the study. The data presented were based on the questionnaire return rate of 92 percent (116 out of 126). The results of the analysis of data are ordered according to the research questions raised and hypotheses formulated in Chapter One. Summary of findings is also presented.

Research Question 1

How adequate are computer technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?

Analysis of data relating to this research question is presented in Table 1

Table 1

Mean Rating and Standard Deviation of Business Educators on Adequacy of Computer Technology Contents in Business Education Programme

S/N	Items	Mean	S.D.	Remark
1	Definition of computer and identification of the functions of the main components as well as its peripheral devices	3.56	0.25	Adequate
2	Proper connection of all hardware components of computer system	3.51	0.27	Adequate
3	Accessing Microsoft Word, explain its environment and basic functions as well as opening a new document in Word using manual controls, icons and menus.	3.75	0.88	Adequate
4	Creating and organizing computer files and folders	3.52	0.34	Adequate
5	Use of storage devices (hard disk, diskette, CD, flash etc.) to store and share files	3.84	0.33	Adequate
6	Use of spreadsheet to enter data, sort data and format cells into tables, make computations use formula and create graph	3.98	0.41	Adequate
7	Use of a word processor to enter and edit text and images, format text, control margin, layouts and table, print, store and retrieve text document from word processor	4.42	0.30	Adequate
8	Use of Microsoft Access for file creation, storage, management and manipulation of data as well as to generate management reports	4.39	1.21	Adequate
9	Skills in organizing and merging of files, folders and directories	4.47	0.38	Adequate
10	Manipulate hardware facilities like printer, scanner, digital camera, projector etc	3.84	0.30	Adequate
11	Installing and using anti-virus software to protect the computer from virus attack	4.20	0.43	Adequate
12	Using of online and offline help facilities for trouble shooting and maintenance of data security	3.88	0.51	Adequate
	Cluster Mean	**3.95**	**0.50**	Adequate

Table 1 presents the result on adequacy of computer technology contents in business education programme as perceived by business educators in universities in South-south and

South-east Nigeria. From the result, all the items received mean rating ranging from 3.76 – 4.44 within the real limits of 3.50 – 4.00 and were regarded as adequate. The cluster mean for this cluster 3.95 was also regarded as adequate. The range of standard deviation (0.25 – 1.21) revealed that the respondents were not far apart in their ratings. This therefore means that computer technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria are adequate.

Research Question 2

How adequate are telecommunication technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?

Analysis of data relating to this research question is presented in Table 2

Table 2

Mean Rating and Standard Deviation of Business Educators on Adequacy of Telecommunication Technology Contents in Business Education

S/N	Items	Mean	S.D.	Remark
13	Installing and accessing electronic communication application software e.g. MS Front Page	2.43	0.66	Inadequate
14	Typing and working with Hyper Text Mark-up Language (HTML) code and applying background colour to a HTML element	2.23	0.67	Inadequate
15	Ability to create a hyperlink and add border to a HTML element	2.38	0.58	Inadequate
16	Embedding an image into a webpage and aligning images to other contents of a webpage	2.12	0.34	Inadequate
17	Formatting and setting the layout of a table in HTML (webpage design environment	2.44	0.33	Inadequate
18	Adding script to a webpage, refreshing and saving a webpage	2.48	0.41	Inadequate
19	Printing and publishing a webpage in a local and public search engines	2.42	0.30	Inadequate
20	Effective use of distance learning, desktop video conferencing and teleconferencing technology	2.59	0.29	Barely adequate
21	Working collaboratively and cooperatively in a technology setting	1.47	0.38	Inadequate
22	Demonstrate knowledge and skills in the effective operation of mobile cellular phone including recharging of credit online	3.54	0.30	Barely adequate
23	Use of telex facilities and facsimile transmission technology	2.44	0.43	Barely adequate
25	Use of electronic organizer technology for information storage and internet telephony	1.88	0.54	Inadequate
	Cluster Mean	**2.19**	**0.42**	Inadequate

Table 2 presents the result on business educators' perception on the adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria. Business educators perceived three items (20, 22 and

23) barely adequate with mean scores of 2.59, 3.24 and 3.44 respectively. Business educators also perceived the remaining nine items (13, 14, 15, 16, 17, 18, 19, 21, 24 and 25) inadequate with mean rating ranging from 1.47 – 2.48. The mean rating fell within the real limits of 1.50 – 2.49 and were regarded as inadequate. Considering that the cluster mean of this cluster 2.19 fell within the same range thus regarded as inadequate. The standard deviation ranges from 0.30 – 0.67 which implies that the respondents were homogenous in their responses. This therefore means that telecommunication technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria are inadequate.

Research Question 3

How adequate are multimedia technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?

Analysis of data relating to this research question is presented in Table 3

Table 3

Mean Rating and Standard Deviation of Business Educators on Adequacy of Multimedia Technology Contents in Business Education Programme

S/N	Items	Mean	S.D.	Remark
26	Accessing a PowerPoint work environment to create slides with different layouts	2.49	0.85	Inadequate
27	Use of presentation packages to add text and enhance slide presentation	1.86	1.27	Inadequate
28	Adding sound, images and animations to presentation,	1.75	0.66	Inadequate
29	Make effective class presentation using slide and Liquid Crystal Display LCD projector or multimedia projector	1.52	0.84	Inadequate
30	Acquiring images and other media from websites, CD, flash drive etc and insert it in a presentation	1.84	0.93	Inadequate
31	How to use of simulation program to teach students for practical	2.48	0.41	Inadequate
32	Effective use of digital camera, webcam and scanner	2.42	1.30	Inadequate
33	Play various media files, attach and configure images using optical media	2.39	0.99	Inadequate
34	set up a slide layout, input maximum words per slide	1.57	1.38	Inadequate
35	Select font and background, use techniques such as fading in and out, animation and sound.	1.54	0.91	Inadequate
36	Use of online bulletin board or interactive whiteboard	2.33	0.55	Inadequate
37	Use of programmed instructor such as Marvis Beacon for learning keyboarding	3.67	0.49	Adequate
	Cluster Mean	**2.16**	**0.82**	Inadequate

Table 3 presents the result on business educators' perception on the adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria. Apart from Item 37 which received mean score of 3.67 and was regarded as adequate, business educators perceived all other items on multimedia technology contents inadequate with mean scores ranging from 1.54 – 2.49. These mean

rating fell within the real limit of 1.50 – 2.49 and were regarded as inadequate. The cluster mean of this cluster (1.58) fell within the same real limit thus regarded as inadequate. The cluster mean of this cluster 2.16 fell with the real limit of 1.50 – 2.49 thus regarded as inadequate. The standard deviation ranges from 0.41 – 1.38 which indicates homogeneity of responses. Therefore, it was adjudged that multimedia technology contents in business education programme of universities as perceived by business educators in South-South and South-East Nigeria are inadequate.

Research Question 4

How adequate are networking technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?

Analysis of data relating to this research question is presented in Table 4

Table 4

Mean Rating and Standard Deviation of Business Educators on Adequacy of Networking Technology Contents in Business Education Programme

S/N	Items	Mean	S.D.	Remark
38	Accessing internet application software or web browser and connecting to the internet	4.66	1.25	Very adequate
39	Configure and use web browsers and help application program	3.69	1.27	Adequate
40	Creating an e-mail account, send and receive e-mails with attachments, and manage mails	4.25	0.74	Adequate
41	Effectively use of synchronous and asynchronous web based communication tools, like instant messenger, voice & teleconferencing	3.92	0.63	Adequate
42	Connection and use of shared printers, shared folders and other devices within a network	3.74	0.63	Adequate
43	Access and use online stores for ordering, securing payments and delivery billing etc.	2.38	0.41	Inadequate
44	Protecting data for e-business against hackers, firewall etc.	2.02	0.89	Inadequate
45	Apply privacy principles and cyber laws for e-commerce	2.17	1.29	Inadequate
46	Effective use of search engines, web directories and bookmarks, and download and install relevant applications	3.77	0.88	Adequate
47	Use internet to update file transfer protocol and engage in newsgroup, chatting with friends, colleagues and clients online.	3.94	0.90	Adequate
48	Use of wireless technology/network	3.83	0.52	Adequate
49	Downloading from and uploading of information into the internet	3.62	0.43	Adequate
50	Use of web camera, blogger, discussion boards and news group.	2.50	0.54	Barely adequate
	Cluster Mean	**3.60**	**0.80**	Adequate

Table 4 presents the result on business educators' perception on the adequacy of networking technology contents in business education programme of universities in South-

south and South-east Nigeria. From the result, business educators perceived only one item (38) very adequate with the mean score of 4.66. The mean value fell with the real limits of 4.50 – 5.00. The data also indicated that eight items (39, 40, 41, 42, 46, 47, 48 and 49) had mean values of 3.69, 4.25, 3.92, 3.74, 3.77, 3.94, 3.83 and 3.62 respectively within the real limits of 3.50 – 4.49 were regarded as adequate. Only Item 50 was perceived as barely adequate with a mean value of 2.50 within the real limit of 2.50 – 3.49. The data also revealed that three items (43, 44 and 45) received mean rating of 2.38, 2.02 and 2.17 respectively within the real limits of 1.50 – 2.49 and thus were regarded as inadequate. However, the cluster mean of this cluster 3.60 fell with the real limit of 3.50 – 4.49 thus was regarded as adequate. The standard deviation ranges from 0.43 – 1.29 which indicates that the respondents were homogenous in their responses. Therefore, it was adjudged that networking technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria were adequate.

Research Question 5

How adequate are desktop publishing technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria?

Analysis of data relating to this research question is presented in Table 5

Table 5

Mean Rating and Standard Deviation of Business Educators on Adequacy of Desktop Publishing Technology Contents in Business Education

S/N	Items	Mean	S.D.	Remark
51	Opening a desktop publishing application e.g. Microsoft Publisher	1.56	0.25	Inadequate
52	Establishing differences between word processor and desktop publishing technology (e.g. text flow, image control, purpose etc.)	2.40	0.27	Inadequate
53	Creating quality and attractive text area or text frame	2.15	0.43	Inadequate
54	Set up column widths and use of multiple font sizes	1.52	0.34	Inadequate
55	Acquire text and images from different sources and placing them in a publication	1.74	0.35	Inadequate
56	Applying alignment and justification to a publication using desktop publish technology	2.48	0.41	Inadequate
57	Resizing or moving images in a desktop publishing application program	2.42	0.50	Inadequate
58	Apply and adjust colour in a text or image	2.39	0.59	Inadequate
59	Fit headline text to page width and balancing of columns	1.77	0.37	Inadequate
60	Use of line and border to separate areas of a text	1.84	0.60	Inadequate
61	Attach and configure scanners, cameras and cell phones to acquire digital images	1.55	0.34	Inadequate
62	Print composite proof and save publication using desktop publishing application	1.78	0.51	Inadequate
	Cluster Mean	**1.96**	**0.41**	**Inadequate**

Table 5 presents the result on business educators' perception on the adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria. From the result, all the items received mean rating ranging from 1.76 – 2.44 within the real limits of 1.50 – 2.49 and were regarded as inadequate. The cluster mean for this cluster 1.96 was also regarded as inadequate. The

range of standard deviation (0.25 – 0.60) revealed that the respondents were not far apart in their ratings. This therefore means that the desktop publishing technology contents in business education programme of universities as perceived by business educators in South-south and South-east Nigeria are inadequate.

Hypotheses

Ten null hypotheses were tested in this section. The t-test statistic was used for analyzing data relating to the ten hypotheses. All the hypotheses were tested at 0.05 level of significance.

Hypothesis 1

Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria.

Table 6
Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Computer Technology Contents in Business Education Programme

Qualification	N	X	S	t-cal	α	df	t-crit	Remark
M.Sc. (Ed)	40	46.82	0.68	0.86	0.05	114	1.96	Not significant
Ph.D.	76	45.02	0.34					

Table 6, shows the t-test analysis of responses of business educators who had M.Sc. and those who had Ph.D. on the perceived adequacy of computer technology contents in

business education programme of universities in South-south and South-east Nigeria with mean scores of 46.82 and 45.02 respectively. The t-calculated value of 0.86 is less than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators who had M.Sc. and those who had Ph.D. do not differ significantly in their mean ratings on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria.

Hypothesis 2

Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria.

Table 7
The Summary of t-test Analysis of Business Educators' Mean Ratings on Adequacy of Computer Technology Contents in Business Education Programme

Experience	N	X	S	t-cal	α	df	t-crit	Remark
1 – 10 Yrs	39	46.21	0.86	1.47	0.05	114	1.96	Not significant
11 & Above	77	47.71	0.27					

Table 7, shows t-test analysis of responses of business educators with 1 – 10 years of teaching experience and their counterparts with 11 years of teaching experience and above with mean scores of 3.57 and 2.50 respectively. The t-calculated value of 1.47 is greater than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance.

Therefore, the null hypothesis was not rejected which implies that, business educators do not differ significantly in their mean ratings on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their years of teaching experience.

Hypothesis 3

Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria

Table 8
The Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Telecommunication Technology Contents in Business Education

Edu. Attainment	N	X	S	t-cal	α	df	t-crit	Remark
M.Sc. (Ed)	40	26.20	0.81	0.28	0.05	114	1.96	Not significant
Ph.D.	76	25.80	0.54					

Table 8, shows the t-test analysis of responses of business educators who had M.Sc. and those who had Ph.D. on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria with mean scores of 26.20 and 25.80 respectively. The t-calculated value of 0.28 is less than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators with M.Sc. (Ed) and those with Ph.D. do not differ significantly in their mean ratings on the perceived

adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria.

Hypothesis 4

Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria.

Table 9
The Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Telecommunication Technology Contents in Business Education

Experience	N	X	S	t-cal	α	df	t-crit	Remark
1 – 10 Yrs	39	26.31	0.66	1.20	0.05	114	1.96	Not significant
11 & Above	77	26.10	0.72					

Table 9, shows t-test analysis of responses of business educators with 1 – 10 years of teaching experience and their counterparts with 11 years of teaching experience and above with mean scores of 26.31 and 26.10 respectively. The t-calculated value of 1.20 is less than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators do not differ significantly in their mean ratings on the perceived adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their years of teaching experience.

Hypothesis 5

Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria.

Table 10
The Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Multimedia Technology Contents in Business Education Programme

Qualification	N	X	S	t-cal	α	df	t-crit	Remark
M.Sc. (Ed)	40	25.89	1.28	0.63	0.05	114	1.96	Not significant
Ph.D.	76	26.03	0.84					

Table 10, shows the t-test analysis of responses of business educators who had M.Sc. and those who had Ph.D. on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria with mean scores of 25.89 and 26.03 respectively. The t-calculated value of 0.63 is less than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators do not differ significantly in their mean ratings on the perceived adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their educational attainment.

Hypothesis 6

Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria.

Table 11
The Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Multimedia Technology Contents in Business Education

Experience	N	X	S	t-cal	α	df	t-crit	Remark
1 – 10 Yrs	39	25.77	1.36	2.00	0.05	114	1.96	Not significant
11 & Above	77	25.38	0.97					

Table 11, shows t-test analysis of responses of business educators with 1 – 10 years of teaching experience and their counterparts with 11 years of teaching experience and above with mean scores of 27.77 and 25.38 respectively. The t-calculated value of 0.78 is less than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators do not differ significantly in their mean ratings on the perceived adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their years of teaching experience.

Hypothesis 7

Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of networking technology

contents in business education programme of universities in South-south and South-east Nigeria.

Table 12
The Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Networking Technology Contents in Business Education Programme

Qualification	N	X	S	t-cal	α	df	t-crit	Remark
M.Sc. (Ed)	40	46.60	0.74	1.24	0.05	114	1.96	Not significant
Ph.D.	76	44.86	1.06					

Table 12, shows the t-test analysis of responses of business educators who had M.Sc. and those who had Ph.D. on the perceived adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria with mean scores of 46.60 and 44.86 respectively. The t-calculated value of 1.24 is less than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators do not differ significantly in their mean ratings on the perceived adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their educational attainment.

Hypothesis 8

Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria.

Table 13
The Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Networking Technology Contents in Business Education Programme

Experience	N	X	S	t-cal	α	df	t-crit	Remark
1 – 10 Yrs	39	45.67	0.66	1.35	0.05	114	1.96	Not significant
11 & Above	77	44.78	0.72					

Table 13, shows t-test analysis of responses of business educators with 1 – 10 years of teaching experience and their counterparts with 11 years of teaching experience and above with mean scores of 45.67 and 44.78 respectively. The t-calculated value of 1.35 is greater than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators do not differ significantly in their mean ratings on the perceived adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their years of teaching experience.

Hypothesis 9

Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the perceived adequacy of technology desktop publishing contents in business education programme of universities in South-south and South-east Nigeria.

Table 14
The Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Desktop Publishing Technology Contents in Business Education

Qualification	N	X	S	t-cal	α	df	t-crit	Remark
M.Sc. (Ed)	40	23.20	0.98	1.22	0.05	114	1.96	Not significant
Ph.D.	76	24.52	0.64					

Table 14, shows t-test analysis of responses of business educators who had M.Sc. and those who had Ph.D. on the perceived adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria with mean scores of 23.20 and 24.52 respectively. The t-calculated value of 1.22 is less than the z-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators do not differ significantly in their mean ratings on the perceived adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their educational attainment.

Hypothesis 10

Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria.

Table 15
The Summary of the t-test Analysis of Business Educators' Mean Ratings on Adequacy of Desktop Publishing Technology Contents in Business Education

Experience	N	X	S	t-cal	α	df	t-crit	Remark
1 - 10 Yrs	39	22.44	0.66	1.56	0.05	114	1.96	Not significant
11 & Above	77	23.16	0.41					

Table 15, shows t-test analysis of responses of business educators with 1 – 10 years of teaching experience and their counterparts with 11 years of teaching experience and above with mean scores of 22.44 and 23.16 respectively. The t-calculated value of 1.56 is greater than the t-tabulated value of 1.96 at 114 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis was not rejected which implies that, business educators do not differ significantly in their mean ratings on the perceived adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their years of teaching experience.

Summary of Findings

The findings of the study are summarized as follows based on business educators' perception.

1. Computer technology contents in business education programme of universities in South-south and South east Nigeria are adequate.
2. Telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria are inadequate

3. Multimedia technology contents in business education programme of universities in South-south and South-east Nigeria are inadequate
4. Networking technology contents in business education programme in universities in South-south and South-east Nigeria are adequate
5. Desktop publishing contents in business education programme of universities in South-south and South-east Nigeria are inadequate
6. Business educators with masters degree and those with doctoral degree do not differ significantly in their mean ratings on the adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria.
7. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria.
8. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria.
9. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria

10. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria.
11. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria.
12. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria.
13. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria.
14. Business educators with masters degree and those with doctorate degree do not differ significantly in their mean ratings on the adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria.
15. Business educators with 1 - 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on

the adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter presents the discussion of the findings, conclusion and recommendations. The chapter also dealt with implications of the findings and suggestions for further study.

Discussion of the Findings

The findings of this study are organized and discussed as follows:

- ✓ Perceived Adequacy of computer technology contents in business education programme
- ✓ Perceived Adequacy of telecommunication technology contents in business education programme
- ✓ Perceived Adequacy of multimedia technology contents in business education programme
- ✓ Perceived Adequacy of networking technology contents in business education programme
- ✓ Perceived Adequacy of desktop publishing technology contents in business education programme

Perceived Adequacy of Computer Technology Contents in Business Education Programme

The result of the analysis in Table 1 showed how business educators perceived the adequacy of computer technology contents in business education programme of universities

in South-south and South-east Nigeria. Business educators perceived computer technology contents in business education adequate. It was found that the computer technology contents in business education programme of universities are adequate in terms of definition of computer, functions of main components and peripheral devices, proper connection of hardware components, accessing word processing application, its environment and basic functions, opening a new Word document using manual controls, icons and menus, creating and organizing computer files and folders, use of storage devices, use of spreadsheet application program, use of word processor, use of Microsoft Access for file creation, storage, management and manipulation of data, organizing and merging files, folders and directory, use of anti-virus software to protect computer from virus attack and use of online and offline help facilities for trouble shooting and maintenance of data security.

This finding was validated by the submission of Okoro and Ndinechi (2013) who maintained that business education exposed students to relevant business knowledge and computer skills needed to cope in the world of work. The authors held that business education graduates who are OTM educators are competent in computer technology. The current technological revolution in education demands that business teacher education programme keep abreast with computer and information technology so that all students will become successfully functional in society of the future (Ihemekpen, 2009). In a similar development, Okoro (2013) held that business education graduates are competent in the use of computer technology hence, business education programme in universities may not need to be reviewed in the areas of computer skills and operations.

The tested hypothesis on Table 6 indicated that business educators do not differ significantly in their mean ratings on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their educational attainment. Similarly, the result of the t-test analysis on Table 7 equally showed that business educators do not differ significantly in their mean ratings on the perceived adequacy of computer technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their years of teaching experience. These results led to the two null hypotheses not being rejected. The results on the adequacy of computer technology contents in business education programme agree with Ezenwafor (2012) who held that graduating students of business education programme of universities in south-east Nigeria are adequately exposed to the computer skills needed for effective job performance in modern offices.

Perceived Adequacy of Telecommunication Technology Contents in Business Education Programme

The result of the analysis in Table 2 showed how business educators perceived the adequacy of telecommunication technology contents in business education programme of universities in South-south and South-east Nigeria. Business educators perceived telecommunication technology contents in business education inadequate. It was found that the telecommunication technology contents in business education programme of universities were barely adequate in terms of effective use of distance learning, desktop video conferencing and teleconferencing technology, operation of mobile cellular phone, and use of telex facilities and facsimile transmission technology.

This result is in line with Ezenwafor (2012) who held that exposure of graduating students of business education programme to fax machine, telex facilities and video machines are inadequate. The researcher is of the view that the result of Ezenwafor's study could be attributable to the inadequacy of the telecommunication technology contents in business education curriculum as revealed by this study.

The result of the study also revealed that the telecommunication contents in business education programme are inadequate in the areas of: installing and accessing electronic communication application programme like Microsoft Front Page, typing and working with HTML code and applying background color, ability to create a hyperlink and add border to a HTML element, embedding an image into webpage and aligning images to other contents of a webpage, formatting and setting the layout of a table in a webpage design environment, adding script to a webpage and saving a webpage, printing and publishing a webpage in a local and public search engines. This result is in accord with Ohakwe and Njoku (2009) who noted that graduates of business education programme of universities cannot effectively implement the webpage design contents of the OTM curriculum without engaging in mass training and retraining because the curriculum used in training these graduates may not have contained many of the new office technology like webpage design. In a similar view, Ezenwafor (2012) maintained that graduating students of business education exposure to Microsoft Front Page application programme was inadequate.

The tested hypothesis on Table 8 indicated that business educators do not differ significantly in their mean ratings on the perceived adequacy of telecommunication technology contents in business education programme of universities in South-south and

South-east Nigeria as a result of their educational attainment. Similarly, the result of the t-test analysis on Table 9 equally showed that business educators with 1 – 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of telecommunication technology contents in business education programme in universities in South-south and South-east Nigeria. These results led to the two null hypotheses not being rejected. The result agrees with Njoku (2012) who maintained that universities offering business education programme should review their curriculum contents to fall in line with the electronic communication technology skills needed by the graduates and society.

Perceived Adequacy of Multimedia Technology Contents in Business Education Programme

The result of the analysis in Table 3 indicated how business educators perceived the adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria. Business educators perceived multimedia technology contents in business education adequate with respect to the use of programmed instructor such as Marvis Beacon for learning keyboarding. However, it was found that the multimedia technology contents in business education programme of universities were inadequate in terms of accessing a power point work environment to create slides with different layouts, use of presentation packages to add text and enhance slide presentation, adding sound, images and animations to presentation, effective use of multimedia projector, acquiring images and other media from internet and inserting them in a presentation, use of simulation, playing media files, setting up a slide layout, selecting font and background,

using techniques such as fading in and out, animation and sound and use of online bulletin board or interactive whiteboard.

This result is supported by Okoro (2013) who held that many graduates of business education programme of universities cannot teach using multimedia facilities as a result of shallow depth of computer and multimedia skills they acquire in their various universities. The Chigboson (2009) added that in United States of America, the current trend in business teacher education programme is a shift in the curriculum contents to adequately reflect computer applications, word processing, administrative information system and multimedia applications.

The tested hypothesis on Table 10 indicated that business educators do not differ significantly in their mean ratings on the perceived adequacy of multimedia technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their educational attainment. Similarly, the result of t-test analysis on Table 11 equally showed that business educators do not differ significantly in their mean ratings on the perceived adequacy of multimedia technology contents in business education programme in universities in South-south and South-east Nigeria as a result of their years of teaching experience. Based on these results, the two null hypotheses were not rejected.

Sokyes (2009) validated the inadequacy of multimedia technology contents in business education programme when the author maintained that the contents of business education programme was grossly inadequate to meet the technological demands of its graduates in the world of work. The author noted further that university business education

must be reviewed and restructured to equip and acquaint present and prospective trainees with the necessary skills and competencies required to cope with any development in business and office technology.

Perceived Adequacy of Networking Technology Contents in Business Education Programme

The result of the analysis in Table 4 indicated how business educators perceived the adequacy of networking technology contents in business education programme of universities in South-south and South-east. Business educators perceived some networking technology contents in business education adequate. These include: accessing internet application software or web browser, configure and use web browsers and help application program, creating email account, send and receive e-mail with attachment, use of synchronous and asynchronous web based communication tools, connecting and using share printer, shared folders and other devices within a network, effective use of search engines, use of internet to update file transfer protocol, use of wireless technology, downloading from and uploading of information into the internet. Business educators were also of the view that some networking technology contents are inadequate among which include: accessing and using online stores for ordering, securing payments and delivery billings, protecting data for e-business against hackers, firewalls, applying privacy principles and cyber laws for e-commerce.

This finding is in agreement with the study of Ezenwafor (2012) who held that exposure of graduating students of business education programme of universities to electronic commerce was inadequate. However, the overall result revealed that business

educators were of the view that the networking technology contents in business education programme of universities were adequate. Okoro (2013) and Ezenwafor (2012) corroboperceived this result when they maintained that graduates of business education are adequately exposed to internet skills therefore were found to be competent in internet and networking technology. The researcher is of the opinion that the adequacy of exposure to and competency of business education graduates in internet operations must be as a result of adequacy of its contents in the curriculum for producing business education graduates of universities.

The tested hypothesis on Table 12 indicated that business educators do not differ significantly in their mean ratings on the perceived adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their educational attainment. Similarly, the result of t-test analysis on Table 13 equally showed that business educators do not differ significantly in their mean ratings on the perceived adequacy of networking technology contents in business education programme in universities in South-south and South-east Nigeria as a result of their years of teaching experience. Based on these results, the two null hypotheses were not rejected. The adequacy of networking technology contents in business education programme was further validated by Okolocha and Olannye (2015) who found out that business education graduates were adequately exposed to internet technology and were found to possess the skills for effective work performance in the various places of employment.

Perceived Adequacy of Desktop Publishing Technology Contents in Business Education Programme

The analysis in Table 5 showed how business educators perceived the adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria. Business educators considered desktop publishing technology contents in business education programme inadequate. These include: opening of desktop publishing application, establishing differences between word processing and desktop publishing technology, creating quality and attractive text area and text frame, setting up column widths and use of multiple font sizes, acquiring text and images from different sources and placing them in a publication, applying alignment and justification to a publication using desktop publishing technology, resizing or moving images in a desktop publishing application program, fitting headline text to page width and balancing columns, use of line border to separate areas of a text, attaching scanners and camera to acquire digital images, printing composite proofs and saving publication using desktop publishing application.

This result affirms the position of Ndinechi and Ementa (2013) who held that desktop publishing skills were poorly taught to business education students of tertiary institutions in the south east of Nigeria. Okoro and Ndinechi (2013) also submitted that graduates of business education programme of universities were not adequately exposed to desktop publishing technology. As a result the products of the programme were found to be incompetent for implementing the desktop publishing technology contents of OTM programme. They recommended that business education curriculum in universities should be

reviewed in line with technological innovation in OTM programme so that business education graduates effectively implement the contents of OTM programme as lecturers.

The tested hypothesis on Table 14 showed that business educators with masters degree and those with doctoral degree do not differ significantly in their mean ratings on the perceived adequacy of networking technology contents in business education programme of universities in South-south and South-east Nigeria. Similarly, the result of t-test analysis on Table 15 equally indicated that business educators with 1 – 10 years of teaching experience and those with 11 years of teaching experience and above do not differ significantly in their mean ratings on the perceived adequacy of desktop publishing technology contents in business education programme of universities in South-south and South-east Nigeria as a result of their years of teaching experience. These results led to the two the two null hypotheses being retained. This finding is in line with Chukwumezie (2006) who decried that as important as desktop publishing technology is, the curriculum of business education programme do not encompass the knowledge of this skill which enables individuals to use computer to perform desktop publishing tasks that would otherwise require more complicated equipment and human effort.

Thus, Njoku (2012) maintained that since business education implies technology and computer skills related to business, Association of Business Educators of Nigeria (ABEN) as a matter of urgency should look inward and determine ways of enriching the contents of business education curriculum in depth and breadth so that the graduates of the programme will not be displaced. During the 2016 Annual Conference of Business Educators of Nigeria held between 11^{th} – 15^{th} of October 2016 at Federal College of Education (T) Omoku Rivers

State, a “Benchmark Minimum Academic Standards for Business Education Undergraduate Programme” in Nigerian was published by ABEN (See Appendix for details). The association recommended that the document should be adopted by every university running business education programme in Nigeria. The researcher is of the view that the office technology contents of the document is adequate for preparing competent OTM educators because the inadequacies discovered in business education programme by this study (specifically, telecommunication technology, multimedia technology and desktop publishing technology) were adequately addressed in the minimum standard.

Conclusions

Based on the results of the study, the following conclusions were drawn. Office technology contents of business education programme in universities in South-south and South east Nigeria is adequate in terms of computer technology and networking technology. However, the electronic communication technology, multimedia technology and desktop publishing technology contents in business education programme of universities in South-south and south East Nigeria is grossly inadequate.

Implications of the Study

The findings of the study have a number of implications which include the following:

1. The study revealed that computer technology contents in business education programme of universities are adequate. This means that there is emphasis in computer technology in business education programme of universities. It therefore implies that business education graduates who are employed as OTM educators will

not find it challenging when it comes to teaching the computer technology contents of OTM programme. Such graduates may not need to be retrained in the area of computer technology for effective job performance or instructional delivery.

2. The study also indicated that telecommunication technology also known as electronic communication technology largely characterized by webpage design contents is inadequate in business education programme of universities. This means that very low attention is given to teaching and learning of electronic communication technology. Since graduates of business education programme are expected to teach this aspect of office technology as OTM educators, there is urgent need to review business education curriculum and ensure that electronic communication technology contents are adequately encapsulated in the curriculum.
3. The study also indicated that multimedia technology contents in business education programme of universities are inadequate. It equally implies that graduates of business education programme are not adequately exposed to multimedia technology. Consequently, employers of labour may not consider business education graduates appropriate when the job under consideration requires the use of multimedia skills and competencies. Therefore, this aspect of office technology contents in business education programme should be reviewed.
4. Again, the study revealed that networking technology contents of business education programme of universities are adequate. It means that there is reasonable emphasis on networking technology in business education programme of universities. Hence business education graduates will be able to work effectively when the task require the use of networking technology skills. It also means that graduates of business

education programme can effective implement the networking technology contents in office technology and management programme. This aspect of office technology in business education programme may not need to be reviewed.

5. The study indicated that desktop publishing technology contents in business education programme of universities are inadequate. Since desktop publishing technology contents in business education programme of universities are inadequate, it means that the products of the programme are not adequately exposed to it. Consequently, graduates of business education cannot effectively implement the desktop publishing technology contents in OTM without undergoing retraining. It is therefore imperative to review business education curriculum for competent technological training of OTM educators.

Recommendations

Based on the findings and conclusions of the study, the following recommendations were made:

1. The contents of telecommunication technology, multimedia technology and desktop publishing technology in business education programme of universities should be reviewed in line with the contents of OTM programme so that graduates of business education programme can perform effectively as OTM educators.
2. Alternatively, the Benchmark Minimum Academic Standards for Business Education Undergraduate Programme" recommended by Association of Business Educators of Nigeria (ABEN) should be adopted by National Universities Commission (NUC) for

all universities running business education programme in Nigeria. The researcher is of the view that the office technology contents of the document is adequate for preparing competent OTM educators because the inadequacies discovered in business education programme by this study (specifically, telecommunication technology, multimedia technology and desktop publishing technology) were adequately addressed in the minimum standard recommended by ABEN.

3. Business education students and graduates who by implication of this study were not adequately exposed to some aspects of office technology should make efforts to update their knowledge and skills in relevant areas so that they can fit properly into the world of employment and technology
4. University authorities should as a matter of responsibility mobilize the business educators in their institutions for skill development and update in office technology especially in their areas of telecommunication technology, multimedia technology and desktop publishing technology
5. Business education lecturers in universities should endeavour to develop and improve their knowledge and skills in telecommunication technology, multimedia technology and desktop publishing technology so that they can effectively implement this aspect of the curriculum after adjustment has been made.

Suggestions for Further Study

Based on the fact that this study could not be considered exhaustive for improving teaching and learning of business education programme in universities, the researcher therefore suggests the following area for further study.

1. Evaluation of availability and adequacy of office technology facilities in business education programme of universities in South-south and South-east Nigeria.
2. Evaluation of office technology competencies possessed by business educators in universities in South-South and south-east Nigeria
3. Evaluation of extent of utilization of office technology facilities in business education programme of universities in South-south and South-east Nigeria.

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APPENDIX A

Department of Vocational Education,
Faculty of Education,
Nnamdi Azikiwe University,
Awka.

6th September, 2015.

…….

…….

…….

Dear Sir/Madam

Request for Validation of Research Instrument

I am a post graduate student of Nnamdi Azikiwe University, Awka. I am conducting a study on perceived adequacy of office technology contents in business education programmed of universities in South-south and South east Nigeria.

Attached to this letter is the research instrument for the study alongside with the purpose of study, research questions and hypotheses. Please kindly verify the validity of the instrument with respect to:

- The language and clarity of the questionnaire items
- The ability of the instrument to collect the exact data required from the respondents
- The extent to which the questionnaire items cover the subject matter

You can equally make corrections, adjustment and suggestions on the research instrument to enhance its validity.

Thank you for your anticipated co-operation.

Yours faithfully,

Signed

Bernard O. Okoro

APPENDIX B

Department of Vocational Education,
Faculty of Education,
Nnamdi Azikiwe University,
Awka.

27th September, 2016.

Dear Business Educator,

Request to Complete a Questionnaire

I am a post-graduate student of Nnamdi Azikiwe University, Awka. I am conducting a study on "perceived adequacy of office technology contents in business education programme of universities in South-south and South-east Nigeria".

The attached questionnaire is designed for collection of relevant data for the study. As a business educator in a university in my area of study, your input is very important to the successful conduct of this study. I therefore humbly request you to assist me in completing the questionnaire with the assurance that your input will be used solely for the stated academic purpose.

Thank you for your anticipated co-operation.

Yours faithfully,

Signed

Okoro, Olu Bernard

APPENDIX C

ADEQUACY OF OFFICE TECHNOLOGY CONTENTS IN BUSINESS EDUCATION QUESTIONNAIRE (AOTCBEQ)

PART A: Demographic Profile

Please tick (√) in the boxes for items as they apply to you.

Highest Educational Attainment: M.Sc. [ ] Ph.D. [ ]

Years of Teaching Experience: 1 – 10 [ ] 11 & above [ ]

PART B

Listed below are items on office technology. As a business educator, you are requested to examine the items in Sections B1 – B5 of the questionnaire vis-à-vis the course contents of the business education programme of your university and then rate how adequate you peerceived the office technology contents in the business education programme of your university. Use the following response code:

Response	**Options**
Very Adequate	(VA)
Adequate	(AD)
Barely Adequate	(BA)
Inadequate	(IA)
Very Inadequate	(VI)

B1: Computer Technology Contents

S/N	*Computer Technology Contents*	VA	AD	BA	IA	VI
1	Definition of computer and identification of the functions of the main components as well as its peripheral devices					
2	Proper connection of all hardware components of computer system					
3	Accessing Microsoft Word, explain its environment and basic functions as well as opening a new document in Word using manual controls, icons and menus.					
4	Creating and organizing computer files and folders					
5	Use of storage devices (hard disk, diskette, CD, flash etc.) to store and share files					
6	Use of spreadsheet to enter data, sort data and format cells into tables, make computations use formula and create graph					
7	Use of a word processor to enter and edit text and images, format text, control margin, layouts and table, print, store and retrieve text document from word processor					
8	Use of Microsoft Access for file creation, storage, management and manipulation of data as well as to generate management reports					
9	Organize and merge files, folders and directories					
10	Manipulate hardware facilities like printer, scanner, digital camera, projector etc					
11	Install and use anti-virus software to protect the computer from virus attack					
12	Use of online and offline help facilities for trouble shooting and maintenance of data security					

B2: Telecommunication Technology Contents

S/N	***Telecommunication Technology Contents***	**VA**	**AD**	**BA**	**IA**	**VI**
13	Installing and accessing electronic communication application software e.g. MS Front Page					
14	Typing and working with Hyper Text Mark-up Language (HTML) code and applying background colour to a HTML element					
15	Ability to create a hyperlink and add border to a HTML element					
16	Embedding an image into a webpage and aligning images to other contents of a webpage					
17	Formatting and setting the layout of a table in HTML (webpage design environment					
18	Adding script to a webpage, refreshing and saving a webpage					
19	Printing and publishing a webpage in a local and public search engines					
20	Effective use of distance learning, desktop video conferencing and teleconferencing technology					
21	Working collaboratively and cooperatively in a technology setting					
22	Demonstrate knowledge and skills in the effective operation of mobile cellular phone including recharging of credit online					
23	Use of telex facilities and facsimile transmission technology					
25	Use of electronic organizer technology for information storage and internet telephony					

B3: Multimedia Technology Contents

	Multimedia Technology Contents	**VA**	**AD**	**BA**	**IA**	**VI**
26	Accessing a PowerPoint work environment and creating slides with different layouts					
27	Use of presentation packages to add text and enhance slide presentation					
28	Adding sound, images and animations to presentation,					
29	Make effective class presentation using slide and Liquid Crystal Display LCD projector or multimedia projector					
30	Acquiring images and other media from websites, CD, flash drive etc and insert it in a presentation					
31	Use of simulation program to teach students for practical					
32	Effective use of digital camera, webcam and scanner					
33	Play various media files, attach and configure images using optical media.					
34	Set up a slide layout, input maximum words per slide					
35	Select font and background use techniques such as fading in and out, animation and sound.					
36	Use of online bulletin board and interactive whiteboard					
37	Use of programmed instructor such as Marvis Beacon in teaching keyboarding					

B4: Networking Technology Contents

S/N	*Networking Technology Contents*	VA	AD	BA	IA	VI
38	Accessing internet application software or web browser and connecting to the internet					
39	Configure and use web browsers and help application program					
40	Creating an e-mail account, send and receive e-mails with attachments, and manage mails					
41	Effectively use of synchronous and asynchronous web based communication tools, like instant messenger, voice and teleconferencing					
42	Connection and use of shared printers, shared folders and other devices within a network					
43	Access and use online stores for ordering, securing payments and delivery billing etc.					
44	Protecting data for e-business against hackers, firewall etc.					
45	Apply privacy principles and cyber laws for e-commerce					
46	Effective use of search engines, web directories and bookmarks, and download and install relevant applications					
47	Use internet to update file transfer protocol and engage in newsgroup, chatting with friends, colleagues and clients online.					
48	Use of wireless technology/network					
49	Downloading from and uploading of information into the internet					
50	Use of web camera, blogger, discussion boards and news group.					

B 5: Desktop Publishing Technology Contents

	Desktop Publishing Technology Contents	**VA**	**AD**	**BA**	**IA**	**VI**
51	Opening a desktop publishing application e.g. Microsoft Publisher					
52	Establishing differences between word processor and desktop publishing technology (e.g. text flow, image control, purpose etc.)					
53	Creating quality and attractive text area or text frame					
54	Set up column widths and use of multiple font sizes					
55	Acquire text and images from different sources and placing them in a publication					
56	Applying alignment and justification to a publication using desktop publish technology					
57	Resizing or moving images in a desktop publishing application program					
58	Apply and adjust colour in a text or image					
59	Fit headline text to page width and balancing of columns					
60	Use of line and border to separate areas of a text					
61	Attach and configure scanners, cameras and cell phones to acquire digital images					
62	Print composite proof and save publication using desktop publishing application					

APPENDIX D

Population Distribution of Business Educators by their Universities in South-South and South East, Nigeria

S/N	Name Of University	No of Business Educators
1	University of Benin, Benin-City, Edo State	11
2	Delta State University, Abraka, Delta State	8
3	University of Calabar, Calabar, Cross River State	9
4	University of Uyo, Uyo, Akwa Ibom State	8
5	River State University of Science and Technology, Portharcourt, River State	10
6	Niger Delta University, Bayelsa State	5
7	Ignatius Ajuru University of Education, River State	6
8	University of Nigeria, Nsukka	19
9	Nnamdi Azikiwe University, Awka	12
10	Enugu State University of Science & Technology	9
11	Abia State University, Uturu	8
12	Ebonyi State University, Abakaliki	9
13	Anambra State University, Ulli	4
14	Michael Okpara University of Agriculture, Umudike	4
15	Madona University Okija	4
Total Population		***126***

APPENDIX E

Validators' Comments

1. "It may be better if you use this term computer operation or technology rather than information and communication technology because this is a compound word for all others in 2 – 5". *Prof. Ngozi Agu, Department of Educational Foundation, Faculty of Education, Nnamdi Azikiwe University, Awka.*
2. "Don't you think your moderator variables are many? Lets discuss!" *Prof. Ngozi Agu – Department of Educational Foundations, Faculty of Education, Nnamdi Azikiwe University, Awka.*
3. "What informed your choice of which variables to apply to which research question?" *Dr. J. I. Ezenwafor, Department of Vocational Education, Faculty of Education, Nnamdi Azikiwe University, Awka.*
4. "Use five point rating scale of Very High Extent **(VHE)** 5; High Extent**(HE)** 4; Moderate Extent **(ME)** 3; Low Extent **(LE)** 2; Very Low Extent **(VLE)** 1". *Dr. J. I. Ezenwafor Department of Vocational Education, Faculty of Education, Nnamdi Azikiwe University, Awka.*
5. "See my comments/inputs in purpose of the study, research questions, null hypotheses and the instrument and goodluck". *Dr. J. I. Ezenwafor, Department of Vocational Education, Faculty of Education, Nnamdi Azikiwe University, Awka.*
6. "Change 'years of experience' to years of teaching experience and adjust the work to office technology and management". "The questionnaire is validated by me". *Dr. J. C. Nwazor, Department of Vocational Education, Faculty of Education, Nnamdi Azikiwe University, Awka.*

7. “The research questionnaire has been thoroughly studied, amended and is hereby recommended as appropriate for the study”. *Agholor, S. I., Department of Office Technology and Management, School of Business Studies, Delta State Polytechnic, Ozoro*

APPENDIX F

CALCULATION OF RELIABILITY COEFFICIENT

The reliability of the instrument was established using Cronbach Alpha coefficient reliability test. The test was done with formula:

$$A = \frac{K}{K-1}\left\{1 - \frac{\sum S_i^2}{S^2}\right\}$$

Where K = number of test items

$\sum S_i^2$ = sum of items variance

S^2 = variance of the total test

The following alpha coefficients were obtained for the various aspects of the instrument.

ADEQUACY OF OFFICE TECHNOLOGY CONTENTS IN BUSINESS EDUCATION QUESTIONAIRE						
Sections of the Instrument	K = number of test items	$\sum S_i^2$ = sum of items variances	S^2 = variances of the total test	$\left\{\frac{\sum S_i^2}{S^2}\right\}$	$\left\{1 - \frac{\sum S_i^2}{S^2}\right\}$	α
Section B1: Computer	12	23.453	115.5213	0.215434	0.79725	0.75326
Section B2: Telecomm.	12	19.646	122.6122	0.186529	0.83654	0.722435
Section B3: Multimedia	12	24.476	120.132	0.212096	0.797954	0.84548
Section B4: Networking	13	31.9781	132.3582	0.228632	0.773276	0.873133
Section B5: Desktop Publishing	12	0.274363	123.7976	0.203543	0.795560	0.782592
Overall	61	78.67	279.345	277.37	0.274348	0.764983

COMPUTATION OF RELIABILITY USING CRONBACH APHA BY SPSS

Cluster 1:

Reliability

Scale: Computer Technology

Case Processing Summary

		N	%
Cases	Valid	10	100.
	Excluded[a]	0	.0
	Total	10	100.0

Reliability Statistics

Cronbach's	N of Items
.752	12

Cluster 2:

Reliability

Scale: Telecommunication Technology

Case Processing Summary

		N	%
Cases	Valid	10	100.
	Excluded[a]	0	.0
	Total	10	100.0

Reliability Statistics

Cronbach's	N of Items
.723	12

Cluster 3:

Reliability

Scale: Multimedia Technology

Case Processing Summary

		N	%
Cases	Valid	10	100.
	Excluded[a]	0	.0
	Total	10	100.0

Reliability Statistics

Cronbach's	N of Items
.852	12

Cluster 4:

Reliability

Scale: Networking Technology

Case Processing Summary

		N	%
Cases	Valid	10	100.
	Excluded[a]	0	.0
	Total	10	100.0

Reliability Statistics

Cronbach's	N of Items
.881	13

Cluster 5:

Reliability

Scale: Desktop Publishing Technology

Case Processing Summary

		N	%
Cases	Valid	10	100.
	Excluded[a]	0	.0
	Total	10	100.0

Reliability Statistics

Cronbach's	N of Items
.781	12

Reliability

Scale: OVERALL RELIABILITY

Case Processing Summary

		N	%
Cases	Valid	10	100.
	Excluded[a]	0	.0
	Total	10	100.0

Reliability Statistics

Cronbach's	N of Items
.792	61