

**ASSESSMENT OF THE AVAILABILITY, ACCESSIBILITY AND  
UTILIZATION OF COMPUTERS ON STUDENTS' PROFICIENCY  
IN WORD-PROCESSING IN COLLEGES OF EDUCATION IN  
NORTH-WEST, NIGERIA**

**BY**

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ZARIA**

**MARCH, 2018**

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**A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE  
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THE AWARD OF MASTER DEGREE IN BUSINESS EDUCATION,**

**DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION,  
FACULTY OF EDUCATION,  
AHMADU BELLO UNIVERSITY,  
ZARIA**

**MARCH, 2018**



## CERTIFICATION

This dissertation titled: “Assessment of the Availability, Accessibility and Utilization of Computers on Students’ Proficiency in Word Processing in Colleges of Education in North-West Zone, Nigeria” by AUGUSTINANNENNAODIGIE, meets the regulations governing the award of the degree of Masters of Education (BUSINESS EDUCATION) of the Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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## **DEDICATION**

This research work is dedicated to the Almighty God. It is also dedicated to my late husband and daughter, Dr. L.I. Odigie and Cecilia OnomeOdigie, respectively.

## **ACKNOWLEDGEMENT**

The researcher wishes to acknowledge her able supervisors in the persons of Dr. S.S. Amoor and Prof. A.A. Udoh for their patience, sacrifices, encouragement and their timely and valuable contributions to the success of this research work. The researcher is really grateful to her internal examiners: Prof. E.E. Adamu, Prof. B.I. Okeh and Prof. J.N. Kwasau for their corrections, encouragement and invaluable constructive critique given to this work. More so, the researcher cannot forget to mention the rest of the other academic staff and their various contributions and purposeful direction in this research work that finally brought it to successful completion. Dr. S. Ibrahim, Dr. I.J. Adeshina, Dr. E. Gbaje, Prof. S.L. Ajayi, Prof. T.O. Ojo, Dr. C. Uguru, Dr. M. Abubakar, Dr. R.T. Umar and the entire staff of the Department of Vocational and Technical Education, for their enormous contributions to this study.

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Finally, the researcher would like to register her profound gratitude to Almighty God for the gift of life and for giving her the grace, good health and resources to complete this study.

## ABSTRACT

The study focused on assessment of the availability, accessibility and utilization of computers on students' proficiency in word-processing in Colleges of Education, North-West, Nigeria. Four research questions and four Null Hypotheses were drawn to guide the study. The research adopted descriptive survey design. The population for the study was 300 secretarial students drawn from 9 (nine) Federal and State Colleges of Education, NCE III doing word-processing in North-West Nigeria. No sampling was done because of the size of the target population. However, out of the 300 OTM students, only 278 of them responded validly to the questionnaire. A structured questionnaire tagged AAAUCWP designed by the researcher was used for data collection. Data collected were analysed using mean and standard deviation for the four research questions, while the 4 (four) null hypotheses were tested using logistic regression at 0.05 level of significance. The entire four (4) null hypotheses were rejected. Findings revealed that most laboratory computers/ICT resources were not available, inadequate, obsolete and non-functional. Thus, the few available ones could not commensurate with the number of students. This situation made it impossible for OTM students to have proper practical knowledge to acquire the proficiency for speed and accuracy of 60 words per minute in word-processing required for today's job acquisition. Similarly, disruptions caused by irregular power supply and the absence of an alternative power supply such as power generators or solar energy to drive these resources and lack of technical support staff kept students from utilizing the laboratories computers and their resources. Based on the aforementioned findings, the research concluded that owing to the fact that most computers were inadequate, obsolete and not functioning at optimal level for students' use, students were deprived of the benefits of learning and acquiring the proficiency for speed and accuracy of 60 words per minute in word-processing which could have improved their skills' competence required for self-reliance and for office of today. The study recommended that alternative power supply such as power generators or solar energy to drive these resources should be provided in the colleges. Similarly, Federal and State Government should endeavor to make sufficient funds available for the colleges to enable them procure enough functional computers for the acquisition of these skills. Where this is not forthcoming, colleges should appeal to business organizations within their school localities for either financial or material support.

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## **LIST OF ABBREVIATIONS**

|       |  |
|-------|--|
| CAI   | - Computer Aided Instruction                     |
| FCE   | - Federal College of Education                   |
| ICT   | - Information and Communication Technology       |
| IT    | - Information Technology                         |
| N     | - Total Number of Respondents                    |
| NCC   | - National Communications Commission             |
| NCCE  | - National Commission for Colleges of Education  |
| NCE   | - National Certificate of Education              |
| NPCE  | - National Policy on Computer Education          |
| PC    | - Personal Computer                              |
| PPMCC | - Pearson Product Moment Correlation Coefficient |
| SAT   | - Skills Acquisition Theory                      |
| SPSS  | - Statistical Package for Social Sciences        |
| UPS   | - Universal Power Supply                         |
| WPM   | -Words Per Minute                                |

## **OPERATIONAL DEFINITION OF TERMS**

**Automation:** It is the technique, method, or system of operating or controlling a process by highly automatic means, as by electronic devices, reducing human intervention to a minimum. It can also be defined as a mechanical device, operated electronically, that functions automatically, without continuous input from an operator.

**ICT Resources:** Information and Communication Technology hardware, software and services necessary for instructional delivery. It includes overhead projectors, computers, audio-tape, printer, scanner, photocopier, facsimile, machine, technical support and up-to-date software.

**Laboratory:** This refers to a room or building used for scientific research, experiments, testing. It is also a room equipped with computers and computer-related equipment for scientific research and experimentation or computer practicals.

**Secretarial Education:** It is an integral part of education which trains the recipients to acquire practical skills, knowledge and attitudes needed to enter and to advance in secretarial teaching occupation or to be self-reliant.

**Secretarial Lecturer:** A person who has been trained and qualified to train the recipients of Secretarial Education or Secretarial Studies. He imparts them with skills, knowledge and attitudes that are needed to work in the office.

**Secretarial Studies:**It is the aspect of education that equips the recipients with knowledge, skills and attitudes that will enable the recipients to work in an organization.

**Skill Acquisition:** is described as the process of gaining ability to perform certain jobs at certain levels of flexibility and with dexterity or expertise.

**Word-Processing Skills:**Refer to the ability to acquire functional knowledge of information technology skills and apply them for typing or producing accurate and available and acceptable documents. It also offers high versatility and flexibility in the use of instructional software that reflects no particular instructional approach.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

Modern offices have rapidly changed as a result of office automation, which has brought new methods in carrying out functions performed ordinarily by people with conventional manual typewriters in organizations. At the centre of the new trends in schools and colleges, is the computer word-processing equipment brought about by Information and Communication Technology. The impact of this technology in teaching and learning is gradually gaining ground and affecting the production of knowledge and transforming the world in an unexpected way. This has facilitated the paradigm shift from the traditional instructional materials or traditional pedagogical methods to a more modern and innovative technological based teaching and learning methods.

Word-processing is a business subject in office education and one of the core courses. There is the need for students to acquire the skills to enable them cope with the new technological development and also exposing them to career awareness by exploring usable options in the world of work and enabling students to have an intelligent understanding of the complexity of technological resources (Chigbuson, 2009). Perhaps no other technology has had a great impact on education as computer or word-processor. Not only does word-processor offer high versatility and flexibility, it also has instructional software that reflects no particular instructional approach. A teacher can use it to support any kind of instruction or activity (Brierley and Kemble, 1991). Word-processor as an aid to teaching and learning, is universally acknowledged and has become

the most commonly used hardware in education. It offers many general relative advantages, unique benefits over and above other methods to teachers and students.

Akan (2002) outlines some characteristics that differentiate this technology revolution from others that have taken place before it, as it has fast pace; impacting all corners of the globe and the demand for its products are insatiable as the growth of the technology has increased intuitive means of absorbing problems the capacities that technology offers sometimes to the bewilderment of the other generation. Skill acquisition is described by Barth & Everistus (2005) as the process of gaining ability to do certain jobs very well and with dexterity or expertise. The gain of ability to carry out any work with expertise, that is, skill acquisition can be found in different fields of human endeavours and on different age brackets of human beings. This means that skill acquisition offered to students at NCE level of education is for the purpose of introduction into the world of technology and appreciation of technology towards a choice of vocation at the end of school can only be developed through practice and this implies that one can only acquire speed and accuracy in word processing through constant practice. By practicing and acquainting their fingers on the alphabet of the key board regularly to be able to master and acquire the speed and accuracy of 60 words per minute (wpm) and above.

Keshane (2014) describes laboratory as a room or building equipped with computers and computer related equipment for scientific research experimentation or computer practicals. He also sees it as a place which provides computer services to students who attend the institution for use in a curricular computer classes. Presently, the use of computer laboratories as practical tool is considered as an important means to

facility for promoting new methods of learning. It is in this direction that the Federal Government of Nigeria incorporated Computer Education into the curricular at all levels of education system. The National Policy on Computer Education (NPCE) (2007) stipulates that at the tertiary level, the students should be conversant with and be able to use any curricular programme, developed for their subject. They should be able to develop and know the rudiments of word processing which the students should master at the tips of their fingers by practicing functional keys (ASDF; LKJ) before attempting to form small sentence structures which would eventually lead to speed and accuracy development. In the quest to achieve these objectives, the learning process should be activity-oriented and student-centred.

One of the pillars of successful implementation of effective use of computer laboratories at all levels is the availability, accessibility and utilization of learning resources. This is in the form of facilities, equipment and services needed to enhance instructional delivery and skills development to bring about standard and quality products. Experts in word processing are of the opinion that computer laboratories with other resources have important role to play in Business Education students' skills acquisition in learning word processing as it will prepare the graduate students for the teaching of business education profession (OTM)option. Business Education (OTM)option is offered in Colleges of Education as a subset of general education and is described by Njoku (2007) as an education programme that equips the recipients with functional sale-able knowledge, skills and attitude/value that enable them operate in the environment they find themselves. The main purpose of Business Education (OTM)option at the Colleges of Education is to prepare students to be self-reliant or

employer of labour and or seek employment in government offices, industries and business offices (Akarahu, 2010).

Virtually, all the core subjects offered at this level are practical in nature. These include word processing, computer appreciation and application, shorthand, keyboarding, advanced desktop publishing, database management system, and web-page design. This new trend according to Amoor (2010) would charge the colleges that offer business education programme (secretarial option) with the responsibilities of adequately exposing the secretarial students to the modern office technology and information systems so that they can minimize strain on the part of the learners, and aid quicker assimilation of the skills and also perform maximally in office occupation when they graduate.

In view of the foregoing, it is important to note that emphases are being made upon the changes in the curriculum more than ever before on the skill aspect of learning which involves word-processing, computer/computer appreciation and other computer related courses (Baba and Akarahu, 2012). There is urgent need to emphasize the use of computer laboratories in learning word-processing in Business Education in Colleges of Education and in all other related institutions to ensure high academic achievements and high quality delivery. In the area of business education, particularly with reference to two key options, Accounting Education, Office Technology and Management, these options appear to lack key instructional facilities such as computers, among others.

## **1.2 Statement of the Problem**

Business Education programme offered at Colleges of Education comprises of accounting and secretarial education. Word-processing is a course offered at NCE III for

Office Technology and Management (OTM) only. In this course, the students are expected to graduate with the speed and accuracy of 60 words per minutes (60 WPM) in word-processing. The researcher through observations and personal interactions with the students of OTM discovered that students hardly acquire the speed of 60 wpm before graduation.

Further interaction with the students by the researcher revealed that most of OTM students do not have adequate access to computers in the laboratories for constant practice for the acquisition of the speed limit of 60 wpm in word processing. It is on this background that the researcher carried out the study to determine the effect of availability, accessibility, utilization and functionality of computers on students' proficiency in word processing in Colleges of Education, North-West, Nigeria.

### **1.3 Objectives of the Study**

The main objective of the study is to assess the effect of Computer Laboratories in Business Education in Colleges of Education, North-West Zone, Nigeria.

The specific objectives are to:

1. determine the availability of computers on students proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria.
2. assess the functionality of computers on students proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria.

3. examine the accessibility of computers on students proficiency in word processing for speed of 60 words per minute in Colleges of Education, North-West Zone, Nigeria.
4. determine utilization of computers on students proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria.

#### **1.4 Research Questions**

The following research questions were raised to guide the study:

1. What is the effect of availability of computers on students' proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria?
2. What is the effect of the functionality of computers on students' proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria?
3. What is the effect of the accessibility of computers on students' proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria?
4. What is effect of the utilization of computers on students' proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria?

## **1.5 Research Hypotheses**

In line with the specific objectives and research questions, the following null hypotheses were formulated to guide the study:

1. There is no significant influence of availability of computers on students' proficiency for speed and accuracy of 60 words per minute in colleges of education in North West zone, Nigeria.
2. There is no significant influence of functionality of computers on students' proficiency in word processing for speed and accuracy of 60 words per minute in colleges of education, North West Zone, Nigeria.
3. There is no significant influence of accessibility of computers on students' proficiency in word processing for speed and accuracy of 60 words per minute in colleges of education, North West Zone, Nigeria.
4. There is no significant influence of utilization of computers on students' proficiency in word processing for speed and accuracy of 60 words per minute in colleges of education, North West, Zone, Nigeria.

## **1.6 Significance of the Study**

The findings of this study are expected to benefit the following: Government, Teachers, College Management, Curriculum Planners, Students and Parents.

College management will benefit from the study as they will be aware of the resources needed by the Colleges of Education. More so, they are interested in fostering good academic standards about their colleges and concern about their reputation to the larger society. The study will further enable them to know the state of facilities in the

computer laboratories for students' use at any particular time whether equipment are available, accessible, usable or not.

Government invests heavily at all levels of education in Nigeria. Therefore, when students' performance is enhanced through effective utilization of resources, it will help the government in achieving its aim for investing in the educational sector in Nigeria.

Curriculum planners will benefit from the study as it will help them in drawing conclusion on the need to update or expand the curriculum of Business Education courses by including relevant computer laboratory facilities and equipment important to Business Education. This will empower the prospective secretaries in acquiring the needed speed and accuracy.

The study will equally benefit the teachers of Secretarial Education as they will understand the need for utilizing computer laboratories in teaching and the resultant effect on learners' achievement.

Students will benefit from the result of the study as they are part and parcel of the larger society. Therefore, if the resources/facilities in the computer laboratories are available and properly assessed for students' use, the students will acquire skills and will be able to contribute their quotas to the development of the society.

Parents will also benefit from the result of the study as the progress and performance of their children is of paramount importance to them. Parents are particularly interested in good academic achievement of their children as it will provide good career prospects and better job opportunities that will benefit the family and the society at large.

### **1.7 Basic Assumptions of the Study**

For the purpose of this study, the researcher assumes that:

1. Availability of computers in the laboratories has effect on acquisition of speed and accuracy of 60 wpm in word processing.
2. Accessibility of computers in the laboratories has effect on students' acquisition of speed and accuracy of 60 wpm in word processing.
3. Utilization of computers in the laboratories has effect on students' acquisition of speed and accuracy of 60 wpm in word processing.

### **1.8 Delimitation of the Study**

The study was delimited to nine (9) Federal and State Colleges of Education located in the North-West Zone, Nigeria. The study was delimited to availability, accessibility and utilization of computers in the laboratories because these were the equipment which the OTM students in the Colleges of Business Education were expected to be proficient in after graduation. The work was also delimited to NCE III Business Education Students within the colleges because they were the final year students hence were qualified to provide adequate information for the research work.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

This chapter focused on the review of related materials both published and unpublished on Assessment of the Availability, Accessibility and Utilization of Computers on Students' Proficiency in Word-Processing in Colleges of Education in North-West Zone, Nigeria. The relevant information obtained for the purpose of this study were arranged and discussed under the following sub-headings:

- 2.1 Theoretical Framework
- 2.2 Concept of Computer Laboratories and Its Uses
- 2.3 Roles of Computer Laboratories on Business Education Students' Skills Acquisition
- 2.4 Functional Computer Laboratories for Business Education Students' Skill Utilization and Skills Acquisition
- 2.5 Barriers to the Utilization of Computer Laboratories in Teaching/Learning
- 2.6 Review of Related Empirical Studies
- 2.7 Summary of Literature Reviewed.

#### **2.1 Theoretical Framework**

Though, there are many theories to be used, this research was based on Roberts Skill Acquisition Theory because it dealt with the adoption of technology used in teaching and learning which this current research looked at.

### **2.1.1 Skill Acquisition Theory**

The theory was about Skill Acquisition Theory propounded by Robert (2007). Stuart (2000) described Robert's theory as a widely used theoretical framework in the area of technology diffusion and technology adoption. Skill acquisition is described by Barth and Everistus (2005) as a process of gaining ability to do certain jobs very well and with dexterity and expertise. Similarly, Medlin (2001) asserts that Robert's Skill Acquisition Theory was the most appropriate for carefully studying the adoption of any skill in higher education and educational environments. He opined that adoption is a decision of full use of an innovation as the best course of action available and rejection is a decision not to adopt an innovation.

Roberts (2007) reiterated that young children could not respond as well as adults to the use of declarative knowledge, as their ability to understand rules and explanations is more limited. He maintained that as rules become more complex, they may become too difficult to understand in the form of declarative knowledge. He affirmed that, it is possible that learning (or acquiring) complex rules may rely more on implicit processes. Robert (2007) has a good overview of Skill Acquisition Theory. As noted, development has three stages: declarative, procedural and automatic. Declarative knowledge refers to explicit knowledge about a topic, as in "knowing" and talking about grammar rules. Procedural knowledge is implicit knowledge that refers to behaviour such as speaking or writing a language. Of course, there are different levels of proficiency in using a language, and thus automaticity is not an "all-or-nothing affair". Automaticity occurs toward the end point at which one has become completely fluent in a language. From the

perspective of SAT, the sequence of these stages is crucial, as is the appropriate “combination of abstract rules and concrete examples” at the declarative stage.

Robert suggests that learning a language is similar to learning other activities like chess, music, mathematics and any other applied skill. As knowledge domains become more advanced, their underlying cognitive structure tends to become more obscure. Thus, while it may remain easy to provide feedback on what the final answer is, it becomes difficult to provide feedback on the individual mental steps that lead to the final answer. Teachers often are unaware, at an explicit level, of what the knowledge is and do not know how to teach it to children.

Acquisition learning is seen as going on all the time. It is concrete, immediate and confined to a specific activity; it is not concerned with general principles (Rogers, 2003). Examples include much of the learning involved in parenting or with running a home. Some have referred to this kind of learning as unconscious or implicit. Rogers (2003), however, suggests that it might be better to speak of it as having a consciousness of the task. In other words, whilst the learners may not be conscious of learning, they are usually aware of the specific task at hand.

Skill acquisition theory further outlined the gains of ability to carry out any work with expertise in acquiring skills or tasks learning which could be in different field of human being offered to students at N.C.E. for the purpose of introduction into the world of technology and appreciation of technology towards a choice of vocation at the end of school and professionalism later in life. Therefore, Roberts Skill Acquisition Theory is relevant to the study as it is most appropriate for carefully studying the adoption of any skill in higher education and educational environment.

## **2.2 Concept of Computer Laboratories and Its Uses**

A computer laboratory is a building or structure where computers and its peripherals like printers, scanners, audio-speakers and UPS (uninterrupted power supply) are kept for individuals to practice with.

Ayo (1994) defines computer as an electronic device which accepts and processes data by following a set of instructions (programme) to produce an accurate and efficient result (information). At the centre of the present revolution of ICT, is the computer, which means all other technological achievements revolve round it. It is a powerful tool that can be programmed to be virtually anything imaginable.

Agomou (2005) refers to computer as devices used for instructions and processing of data that have been organized in any medium or form such as organized facts or data which is meaningful to the end users or recipients. It can also be seen as data which has been processed, while technology according to Galbraith (2000) is the systematic application of scientific or other organized knowledge to practical tasks. It can equally be described as an equipment, machine and devices used in the application of knowledge to practical tasks. Computer as an electronic device, according to Oduguwa (2002) in Omolorhe (2006) is able to receive data as input, and process the data into meaningful information output in printed form.

In order for Business Education students to be able to utilize computer in the various laboratories to enhance word-processing skills acquisition, the knowledge of the system operation is very important. This will enhance their productivity and also improve their ability to store and retrieve information quickly and accurately.

In order to be relevant in today's office, computer and word processing skills is relevant for teaching all office technology managers and importantly Business Education students, because the availability, accessibility and utilization of computer and its laboratories have been simplified through automation and functions of secretarial duties as every computer has word processing facilities. According to Ayo (2010), computer is an "electronic device which accepts data as input and processes it following a set of instructions (programme) to produce accurate and efficient result in a printed form. At the centre of the present revolution of ICT is the computer which means all other technological achievements revolve round it. In order to be able to operate and communicate with the computer, the knowledge of the system is very important. It is a very powerful tool that can be programmed to be virtually anything imaginable.

Some years ago, computer sciences as a discipline and the use of computer laboratories did not exist. Today, computer science diploma and degree programme are offered at many Universities, Colleges of Education and Polytechnics. Computer has become a nationwide phenomenon, and every citizen has embraced it, that can be evidenced in the number of established computer centres and computer laboratories, training institutes, personal computer (PC) and laptop deployed by individuals and organizations for their staff on loan and probably on a subsidized rate, government and employers have made computer literacy a pre-requisite or criteria for job qualification. Education institutions in some part of the world are making progress in developing computer-literate citizens. However, the task of educating students today to acquire the skill is becoming more difficult than ever. The school faces crowded classrooms, tighter

budgets and a serious and disturbing falling standard of education. No technology is presently developing more rapidly than computer technology (Ayodele, 2002).

Some Colleges of Education also offer computer science and several state colleges offer two years diploma programme in data process or computer science. The past few years recorded large number of graduated students with basic programming experience and basic operational knowledge and skills in computer (Ayodele, 2002). According to Ntukidem (2005) computing plays such an important role in everyday life and in the technological future of any country that the general public ignorance of the subject constitutes a national crisis. Today, the ability to use computer is as basic as necessary to a person's formal education as reading, writing and arithmetic. As jobs become increasingly oriented towards the use of information, society demands and rewards individual students who know how to use information system (computers).

Ntukidem (2005), postulated that today with the aid of database, information can be imputed, accessed, sorted, extracted and stored in a variety of ways by office managers and secretaries. As a result of this, computer has become a good electronic device, very reliable, safe and secure for ICT, and which implies the positive availability, accessibility, usability of computers and its laboratories in offices and schools.

Ntukidem stressed that many organizations and schools in the world and Nigeria have resorted to the use of computers in processing documents. A Business Education student using a computer in the laboratory connected to a printer, telephone line, scanner and other electronic equipment can perform series of tasks just within a twinkle of an eye. The application of ICT has thus revolutionalized business practices by broadening the notion of document which used to refer specifically to a paper based communication.

This is no longer the case as information and computer technology has made it possible to process “paperless” documents (Ihionkhan, 2009).

Ihionkhan (2009) reiterated the fact that office technology manager/secretaries rely on computer in their day-to-day operations. Most business organizations in both the public and private sectors would neither be able to develop new markets and expand existing ones, produce and sell their products or services to their customers in an effective, efficient and competitive manner.

### **2.3 Role of Computer Laboratories in Business Education Skills Acquisition**

Laboratory computers aid teaching as they enable learners to interact with learning with or without the presence of an instructor or a Business Educator, the presentation on the computer can be in the form of text or multimedia formats which include photographs, animation and drills. Computer instruction broadens the students and business educator’s access to information on business education programme and other educational programme which could help students to adapt to the abilities and preferences to increase the amount of personalized instruction a learner receives.

Also computer instruction helps the student to visualize objects or drill shorthand and word processing exercises at an easier pace. The computer as an educational instrument allows the students to be actively involved in the teaching-learning of business education which involves the exploration and manipulation of stimulated environment where graphic representations of the subject-matters, enables the student understand abstract concepts exercises, drills, keyboards skill exercise and data analysis.

Nworgu (2008) asserted that computer is a programme of instruction or package presented in software for instructional purpose. This has made the teaching and learning process efficient, most effective, easier and less cumbersome. Nworgu further posits that the use of computer and its laboratories as an instruction provides the learner with different background and characteristics. Such background may be in the form of tutorials, drills and practices as well as simulations. For instance, the drills and practicals in Business Education exposes students to practical aspect of the learning process that have been carried out previously and which can be graded at the end of the exercise.

Nworgu (2008) also elaborated the advantages of computer which are as follows:

*With the aid of computer students can carry out research, record data and solving of complex calculations. Computer instruction has the potentials of encouraging student-student interactions; enhance peer group discussion as well as making students to explore information beyond the demand of the subject matter or ability.*

Computer instruction can stimulate student's interest in an instructional process and also encourage individualized learning. Computer instructions provide concert and realistic learning experience that give rise to knowledge generation thereby making the entire learning process to be fun, efficient, effective and humorous.

#### **2.4 Functional Computer Laboratories for Business Education Students' Skills Utilization and Skills Acquisition**

Computer laboratory as an ICT resource is more of an asset rather than a liability. Its usefulness in today's society cannot be underrated, as it is a resource for the teaching and learning in our educational system.

Computer laboratories instruction is a practical and an interactive technology concept which enables the user to interact with the system. Unlike the traditional TV and other mass media which provide only one way communication from the system to the user; computer instruction enables the students to respond and discuss with the system independent of the teacher or the normal classroom setting (Ene, 2007). Their presence is exerting impacts on pedagogical approaches in the classrooms. They are also used in the presentation of lesson which enhances better understanding of the subject matter since the learners have the opportunity to visualize the concept taught e.g. typing tutor used for mastering keyboard exercises.

Their contribution to changes in teaching practices, school innovation is considerable as it can be used to equip Business Education students on how to surf the internet, operate teleconferencing and video conferencing. This aspect can enable the students to operate favourably or cope with modern demands of business organizations. Ohakwe and Okwuanaso (2006) contended that the knowledge of computer application software such as Spreadsheet, Excel, computer-laboratory design, and Database were important skills in office management and such skills should be impacted on the recipients of business education. This will make them compete favourably in the business world.

They further stressed that computer can be used for typing and shorthand drills/practice or simulations. It could also provide a powerful instructional delivery media for utilizing any identified instructional media in business education, which makes the recipients to pay attention and understand the concepts being taught. This is possible due to the recipients' active participation in the learning process.

One of the benefits of using computer as an ICT resource and an instructional material is to convey information quickly and effectively to all students and to keep them interested in learning. It provides visuals of subjects to students that would result to their interest and motivation. It increases learning and also saves time during lectures. It further provides feedbacks, grades all students fairly and provides the learners with more control over the speed at which instruction is delivered (American Institutes for Research, 2003). This view is pertinent in the sense that computer can display on instructions, descriptions and graphics on business education curricular contents, while the recipients can relate or interspersed with visual or audio depiction or materials relevant to the activity.

## **2.5 Barriers to the Utilization of Computer Laboratories in Teaching/Learning**

Computer laboratories as ICT resources have a potential to improve teaching and learning in the educational system to a great extent. It has been observed to have some barriers. Ogbakirigwe and Uloh (2008) noticed that understanding the pedagogical, psychological and cognitive barriers to effective use of these resources may be an important precondition for improving the utilization of computers and other technological aids in the educational process.

The barriers are categorized as external and internal barriers (Keengwe and Onchwari, 2008). According to Snoeyink and Ertiner (2001), the former include lack of equipment, unreliability of equipment, lack of technical support and other resource-related problems. It further includes both institutional level factors, such as

organizational culture and teacher level factors, such as beliefs about teaching and openness to change.

How these external and internal factors negatively influence the use of computer laboratories as ICT resource on Business Education students' academic achievements are described as follows:

**1. Inadequate infrastructure and resources**

The effective utilization of computer resources in teaching would require the availability of equipment, supplies of computers hardware and other proper maintenance including other facilities and accessories and software packages. Where constant electricity is absent and proper maintenance culture and provision is made for alternative power supply, it becomes a challenge. Also, other resources such as computers, printers, multimedia projectors, scanners, etc. which are either not available or in short supply in most of the educational institutions. For any computer laboratory to function optimally requires up-to-date hardware and software. Using these up-to-date hardware and software resources is a key to better performance of technology (Gulbahar, 2007).

**2. Insufficient funds:**

Effective implementation of technology into education system involves substantial funding. Computer ICT resources such as hardware, software, internet, audio-visual aids, teaching aids and other accessories require huge funds. Sharma (2003) states that the most notable of the barrier to the use of computer resources in education in developing countries seems to be the political will of the people in the seat of power. Allocation of adequate funds for the educational sector which can be seen from the

budgetary allocation in various countries. Mumtaz (2000) stated that many scholars proposed that the lack of funds to obtain the necessary hardware and software is one of the reasons teachers do not use technology in their classes.

Afshari, Bakar, Su Luan, Samah and Fooi (2009) stated that efficient and effective use of technology depends on the availability of hardware and software and the equity of accessibility to resources by teachers.

### **3. Lack of vision and plan:**

Many stakeholders, educators, government in developing countries, consider that ICT investment enhances the instructional use of computers and improves teaching and learning. They neither provide computer tools in the classroom (Candiotti and Clark, 1998) nor provide state of the art technology in order to make desirable learning changes in education (Kent and McNergney, 1999). The barriers fall into two categories:

#### **a. Government vision and Plan:**

Effective implementation of computer resources in laboratories is not merely a vision rather, it needs a proper plan, policies, execution and monitoring by respective government agencies.

#### **b. Institution vision and plan:**

A vision gives us a place to start, a goal to reach for, as well as a guide point along the way. Many researchers are of the view that institution's resources vision is essential to effective and efficient ICT integration (Anderson and Dexter, 2000).

Although, there are few higher institutions with computer laboratories facilities but cannot utilize it effectively due to lack of proper vision and plan. Therefore, proper use of facilities is clearly related to action taken by institution, and development of the plan, support and training (Haddad and Jurich, 2002).

#### **4. Teachers' Attitudes and Beliefs:**

Teachers have been found to be major individuals in the forefront in the use of new technologies in instructional settings (Almusalam, 2001). To be successful in computer use teachers need to engage in conceptual change regarding their belief about the nature of learning; the role of students, and their role as teachers. Therefore, successful use of computer laboratories into classroom largely depends on teachers' attitude and belief; as it has been suggested that attitudes towards computers affect teachers' use of the computers in the classroom and the likelihood of their benefitting from training. If teachers want to successfully use technology in their classes/laboratories, they need to possess positive attitude to use the technology. Such attitudes are developed when teachers are sufficiently comfortable with technology and are knowledgeable about its use (Afshari, et al 2009).

#### **5. Lack of knowledge and skills:**

According to Pelgrum (2001), the success of educational innovations depends largely on the skills and knowledge of teachers. Most teachers lack the knowledge and skills which is one of the main hindrances to the use of computer resources in the laboratories in education both for the developed and underdeveloped countries.

Pelgrum(2001) and Ihmeideh (2009) emphasized that integrating technology in the curriculum requires knowledge of the subject-matter, an understanding of how students learn and the level of technical expert. Moreover, Berner (2003) discovered that teacher's belief in their computer competence was a greater hindrance in their use of computers in the laboratories/classrooms. Therefore, lack of knowledge of the use of the subject matter and lack of skill on the ICT tools and software have also limited the utilization of ICT tools in teaching.

#### **6. Lack of Time:**

Lack of time is one of the biggest hindrances to the inclusion of ICT resources into teaching and learning situation. Teachers and time to learn how to use hardware and software, time to plan, and time to collaborate with other teachers using the same facilities. Teachers also need time to develop and incorporate technology into their curriculum, while some teachers are unable to make appropriate use of technology in their own laboratories/classrooms. Others are unwilling to try simply because of anxiety, lack of interest or lack of motivation (Duhaney, 2001).

#### **7. Resistance to Change**

Nwaokocha (2004) stressed that some business educators in the teaching profession hold to their obsolete ideas and have refused to accommodate changes in the profession. He further asserted that, they often say "they were not taught that way". This non-challant attitude of Business Educators towards innovative teaching methods and the

problem to shift from the conventional teaching method to a more innovative teaching strategy does not show innovation nor dynamism in their deliveries.

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

For the purpose of this work, the following empirical studies related to this research work were reviewed:

Jebba (2010) carried out a research titled: Survey of Accessibility and Usability of Information and Communication Technology among Students of Technical Education in Tertiary Institutions in Niger State, Nigeria. The main objective of the study was to investigate the extent of availability, level of accessibility and use of ICT and its resources by students of technical education in Niger State tertiary institutions. The study adopted survey research design. The population of the study comprised of all the 1161 students of the technical education department from the two tertiary institutions offering technical education programmes in Niger State.

Yaro Yamane's sampling formula was used to sample 297 students from the two institutions, while purposive sampling technique was adopted to select students that have spent at least one year in the institution under study. Four research questions were formulated to guide the study.

A structured questionnaire was employed as the instrument for data collection. The questionnaire based on the subject matter had 40 items generated to address the research questions. The questionnaire was structured with a four point scale. Data for the study were analyzed using mean and standard deviation to answer the research questions. To determine the level of acceptance, a mean score of 2.5 was chosen as a

decision point. Consequently, any item with a mean score of 2.50 and above was considered acceptable (Agree) while responses with a mean score of 2.49 and below were regarded as not acceptable (Disagree).

The findings of the study revealed among other things that ICT facilities were not available for students' use at the Department and as such they do not have access to them. This researcher based his research on two technical institutions within Niger State, the current researcher focused on Colleges of Education within the North-West Zone, Nigeria. Additionally, this researcher generated four research questions and purposively chose his sample, but the current researcher used four research questions and the entire population. Despite the observed tendencies, the findings helped the present researcher in the choice of objectives and have added knowledge to the work.

Vajargah, Jahani and Azadmanesh (2010) carried out a study in Tehran, Iran on application of computer laboratories as ICT resources in teaching and learning at University level: the ShahidBeheshti University. The objective of the study was on the obstacles, facilitators and the risks of using these technologies in teaching and learning in higher education. The research population consisted of the three major groups: university academicians, curriculum planners and ICT professionals. The population of university professors was 578. A sample was selected using stratified sampling technique 231. Due to the smallness of the sizes of other sections of the population (23 for curriculum planners and 28 for computer professionals) all of them were requested to participate in the study bringing the sample total to 272.

The researchers employed a survey research method using a questionnaire designed in 4 sections with 40 items in Likert scale system. Validity of the instrument

was reviewed by employing a specialist dominated focus group with participation of 10 experts and the questionnaire was revised based on the session results. The questionnaire's reliability was calculated through two methods. Alpha Coefficient (0.90) and Split-Half (0.91) and the results confirm the instrument reliability.

Research findings revealed several challenges pertaining to ICT application in Iran such as National Policy for using it in Higher Education, lack of adequate investment, cultural obstacles, financial challenges, lack of continuity in ICT use, and lack of systematic training and development programmes. The study, though carried on in Iran, has assisted the researcher in the areas of literature review and procedure for data collection; however, the study lacks hypotheses and standard tool for answering research questions which will be addressed by the current study.

Ubulom, Enyekit, Onuekwa and Amachiele (2011), conducted a research on Analysis of Information and Communication Technology Accessibility and Utilization in Teaching Business Studies in Secondary Schools in Andoni Local Government Area of River State, Nigeria. The objective of the study was to investigate computer laboratories as ICT resources, accessibility and usability in teaching business studies in secondary schools. The researcher adopted descriptive survey design.

Sixty-six (66) business studies teachers drawn from 30 secondary schools were used. From the population, 40 were males while 26 were females. A 20 item questionnaire was designed for data collection for the study. Respondents were asked to rate each of the items on 4 point scale.

A split-half method was used with a pilot group of 10 business studies teachers from neighbouring communities in Ogoni to derive the reliability coefficient of 0.86

using the Spearman Brown formula. The data gathered from the study were analyzed using the mean ( $\bar{X}$ ) and standard deviation as statistical tools. The mean of 2.5 was regarded as “Reject” while a mean response of or above 2.5 were regarded as “Accept” for research questions, while the null hypotheses were tested at 0.05 level of significance such that any calculated t-test value of 1.96 or above at 0.05 level of significance ( $P > 0.05$ ) were regarded as “significant”.

Finally, ways of solving the mentioned challenges were suggested for further consideration and implementation by both state and local government authorities. These researchers based their research on secondary schools within the Local Government, but the current researcher focused on Colleges of Education within the North-West Geo-Political Zone, Nigeria. Though, the statement of the null hypothesis sought to find difference in the mean scores of respondents, but the researcher sought for influence between the variables. Researchers have advocated that material inputs influence perceived students’ learning outcome. Again, that business education programme in tertiary institutions should be fine-tuned to enable recipients acquire cluster of general work competencies required by employers of labour. Findings from the study indicated that the research lacks basis for generalization because it concentrated on 30 secondary schools. This study hopes to bridge the gap. However, the study served as a guide in literature review and formulation of objectives.

Akude and Ebeniza (2012) South-East Nigeria, conducted a study on ICT computer resources in teaching and learning in State Colleges of Education. The purpose of the study was to examine the level of application of ICT computer resources in teaching and learning. Four specific objectives and four research questions were

formulated to guide the study on the achievement of the purpose of the study. Descriptive survey research design was adopted for the study. Questionnaire was designed to gather information from the sampled population. The reliability index of the questionnaire was calculated using the Pearson Product Moment Correlation Coefficient at 0.71. There are four (4) states owned Colleges of Education in the South-East of Nigeria with a total of six hundred and forty-one (641) lecturers.

However, the researcher purposively sampled 50% of the lecturers. Thus, a sample of 321 lecturers was arrived at and used. Data were collected using a questionnaire of a four point modified Likert type scale. The reliability of the instrument was ascertained by using 10 teachers from another College of Education to carry out a test – re-test exercise, and the reliability coefficient of 0.71 was established using Pearson Product Moment Correlation Coefficient Statistics. Data were analyzed using the mean and standard deviation statistical tools. Generally, the study revealed that the extent of lecturers' and students' utilization of ICT facilities was very low due partly as a result of poor electricity power supply, insufficient ICT facilities and lack of basic computer operational skills.

The study advocated that lecturers at all levels should endeavour to improve on their capacity and computer competencies through trainings and workshops participations and that the government and college authorities should provide sufficient ICT facilities to enable lecturers and students use them in teaching and learning. These researchers based their research on COE, which is the same study area as the current research. The authors did not tell whether instrument was validated. The work, though lacks some technical points, yet, it adds to knowledge and has informed the work to identify some of the

problems and or limitations of computer laboratories on word-processing skills acquisitions among Business Education Students in Colleges of Education, North-West Zone, Nigeria.

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

To ensure the reliability of the instrument, a test-re-test technique was employed. A pilot study was carried out by administering the questionnaire instrument at intervals of two weeks on 10 non participating secondary school principals in Sabon-Gari Local Government Area of the state. The reliability index was calculated using the Pearson Product Moment Correlation. A correlation coefficient index of 0.98 was obtained. The mean of 2.5 regarded as “Reject” while a mean response on or above 2.5 were regarded as “Accept”. The independent t-test was used to test hypotheses 1 and 2. The null hypotheses were tested at 0.05 level of significance. The study revealed that the available ICT computer facilities in the state were not adequate in schools and their utilization was a matter of concern.

The study further revealed that the views of both the male and female principals on ICT facilities availability and utilization in the management of secondary schools did not differ. It was suggested that Government should as matter of urgency sponsor the training of principals on the utilization of computer facilities in Educational Management and the Federal and State Ministries of Education should ensure the provision of electricity in every school. The researcher suggested based on the results and findings of the study that government should also sponsor the re-training of principals on the utilization of ICT in Educational Management, and that school principals should involve the parent-teacher association in the provision of ICT facilities in schools. This researcher based his study on the use of ICT for administrative purpose in secondary schools within Kaduna State, but the current researcher focused on influence of computer laboratories on word-processing skills acquisition among Business Education Students in Colleges of Education, North-West Zone, Nigeria. Moreso, the statement of their hypothesis sought to find differences in the mean scores of respondents, but current researcher sought for influence on the variables. Despite these observed weaknesses, the study is very relevant and gave insight into the present research work showing that inadequate utilization of computer facilities and poor power supply could result in poor students' attitude and hindrances to teaching and learning of Business Studies in Colleges of Education.

Inibehe and Dankaro (2012) in Katsina-Ala Benue State, conducted a research on ICTComputer Laboratories Resources, Utilization, Availability and Accessibility by Teacher Educators for Instructional Development in College of Education Katsina-Ala. The study investigated the utilization of computer ICT resource in the instructional mix

by teacher educators in College of Education (COE) Katsina-Ala, Benue State, Nigeria. A total of forty (40) COE Katsina-Ala teacher educators from 5 schools randomly selected, formed the sample size from a population of 287. The study adopted the Ex Post Facto design based on the fact that the variables had already occurred. The population of the study comprised all 287 teacher educators (academic staff) in COE Katsina-Ala. Forty (40) teacher educators out of the 287 were sampled for the study using the random sampling technique.

The instrument designed and used for data collection was the Teacher Educators' ICT computer resource utilization questionnaire. The reliability was ascertained in a test run in a private COE not used in the main study using Cronbach Alpha that yielded 0.71 coefficient, providing that the questionnaire was reliable. Furthermore, the Yes/No response category was adopted for the instrument in collecting data while frequencies and percentages were used in analyzing data. A score of less than 50% meant that the item was of no effect while score of 50% and above meant that the item had significant effect. The study revealed that ICT resources were not available and for that reason, teacher educators could not access them for instructional development purposes. Based on these, it was asserted that the college authority should avail teacher educators in the institution with ICT resources and sponsor them on training and re-training programmes to produce ICT compliant students. The researchers however, did not indicate whether the instrument was validated or not validated. Also, there were no hypotheses formulated to assist the study.

Despite the observed tendencies, the findings have helped the present researcher in the choice of objectives. It has also added knowledge and has informed the work to identify some gaps which will be bridged.

## **2.7 Summary of Related Literature**

This chapter reviewed in details works of theorists, researchers and writers related to the topic under research. The study considered Skill Acquisition Theory which according to Medlin (2001) is the most appropriate theory to base on a research on when it bothers on intake of technology at the higher institution. Robert (2007) has a good overview of skill acquisition theory. As noted, development has three stages: declarative, procedural and automatic. These stages, Robert (2007) opined typically follow each other in a time-ordered manner. The chapter went further to look at the concept of computer laboratories and its uses. The study noted that to be relevant in today's office, computer and word processing skill is relevant for teaching and all office technology managers and most importantly business education students have access and are made available and usable; they have been simplified through automation of all functions of secretarial duties as every computer has word processing facilities. Adoption of technology in education was considered to be the practical form of scientific knowledge or science of the application of knowledge to practical. On the whole, this chapter saw ICT as processing and sharing information using all kinds of electronic devices.

In the same vein, it considered the use of computer laboratories in education as a link with higher educational students' academic achievements and higher quality pedagogy. Some of the advantages were said to include quick access to information, easy

availability of updated data, connecting geographically dispersed region, catering to individual difference and the possession of a wide range of communication media. The chapter looked critically at the benefits of computer laboratories on students' skills acquisition, in teaching among others, preparation of learners for the real world of work, creation of great enthusiasm for learning among fellow students and giving greater exposure to vocational and workforce skills for students. On the other hand, it considered barriers in the utilization of computer laboratories in teaching which include inadequate infrastructure and resources, insufficient funds, lack of vision and plan, teacher attitudes and belief about ICT, lack of knowledge and skills, lack of time and resistance to change.

Furthermore, this chapter highlighted barriers to the accessibility of computer laboratories in teaching Business Education students and these are: readily available technical support staff, perceived usefulness, access to computer resources, adequacy of computer resources, supportive policies, and adequate training. In addition to these, this chapter considered skills acquisition, as a process of gaining ability to do certain jobs very well and with dexterity or expertise. It outlined the gains of ability to carry out any work with expertise, in skill acquisition which can be in different field of human beings offered to students at NCE for the purpose of introduction into the world of technology and appreciation of technology towards a choice of vocation at the end of school and professionalism later in life.

Again, assessment of the availability, accessibility and utilization of computers on students' proficiency in word-processing in C.O.E., North-West Zone, Nigeria of business education students like adequate resources, facilities and manpower were stressed by most authors. They were of the view that no meaningful achievement or

development could be made in Colleges of Education offering business studies without enough functional and modern computer laboratories resources. According to them business education being a vocational subject must be taught in a practical way so that the recipients could be properly equipped with the necessary skills, competence, knowledge and attitude that will make them compete effectively in the world of work.

Finally, six empirical studies were reviewed, and from the review, the researcher noted that none of the study focused on Colleges of Education, and none of them considered the variable in C.O.E. computer laboratories alone, none focused on North-West Zone as a whole. The reviewed studies all sought to test for differences in opinions of respondents. Once more, the researcher also noted that, the authors reviewed talked less about assessment of the availability, accessibility and utilization of computers on students' proficiency in word-processing in COE in North-West Zone, Nigeria. These have created the gaps which the current researcher has filled.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This chapter presents the different research methods and procedures that were adopted to collect and analyse the data for this study under the following sub-headings.

- 3.1 Research Design
- 3.2 Population for the Study
- 3.3 Sample Size and Sampling Procedures
- 3.4 Instrument for Data Collection
  - 3.4.1 Validation of the Instrument
  - 3.4.2 Pilot Study
  - 3.4.3 Reliability of the Instrument
- 3.5 Procedure for Data Collection
- 3.6 Procedure for Data Analysis

#### **3.1 Research Design**

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

understood. Descriptive survey research design therefore, gives a remarkable accurate picture of a phenomenon.

### 3.2 Population for the Study

The population for the study was three hundred (300), made up of NCE III Business Education Students doing word-processing from nine (9) Colleges of Education, located in the North-West Zone, Nigeria. The Business Education Students were the focal point of the study. Table 1 shows the breakdown of the population for the study.

**Table 1 Population for the Study**

| S/N          | State   | Institutions         | Location  | No. of NCE III Business Education Students (OTM) Section |
|--------------|---------|----------------------|-----------|--|
| 1            | Kano    | FCE (Technical)      | Bichi     | 30   |
| 2            | Zamfara | FCE (Technical)      | Gusau     | 28   |
| 3            | Kano    | FCE                  | Kano      | 38   |
| 4            | Katsina | FCE                  | Katsina   | 25   |
| 5            | Kaduna  | FCE                  | Zaria     | 42   |
| 6            | Kaduna  | College of Education | GidanWaya | 30   |
| 7            | Gumel   | College of Education | Jigawa    | 25   |
| 8            | Kano    | Sa'adatuRimiC.O.E.   | Kumbotso  | 28   |
| 9            | Sokoto  | ShehuShagariC.O.E.   | Sokoto    | 27   |
| <b>Total</b> |         |                      |           | <b>300</b>   |

**Source:** NCCE Digest, 2009  
Record office of each school, 2013

### **3.3 Sample Size and Sampling Procedure**

The researcher used 300 of the population as the sample of the study. This was made up of NCE III Business Education students from 9 (nine) Colleges of Education located in the North-West Zone, Nigeria. The researcher decided to use all the total population because they were few in number. This was also in line with the recommendation of Ademiluyi and Okwuanaso (2009) who asserted that it is ideal to study the entire population whenever they are small. Based on the size of population, there was no sampling procedure.

### **3.4 Instrument for Data Collection**

The main instrument that was used for collection of data was a four-point scale questionnaire. This was in line with the recommendation of Agbamu (2005) who opined that this will enable the respondents to indicate the degree of their opinion on a given statement. Three hundred (300) copies of the questionnaire were administered to students of the colleges to collect primary data. The questionnaire items were based on the objectives of the study and the research questions. The items were generated to address each of the research questions accordingly. The questionnaire (AAAUCWP) consisted of five (5) sections regarded as section A-E.

Section A focused on the personal data of the respondents, specialization, qualification, years of experience. Section B focused on research questions which were on Assessment of the Availability, Accessibility and Utilization of Computers on Students' Proficiency in Word-Processing in Colleges of Education in North-West Zone, Nigeria. Section C bothered on research question 2 which focused on functionality of

computer on students' proficiency on word-processing in Business Education, Colleges of Education. Section D covered research question three which was on effect of accessibility of computers on students' proficiency in word-processing for speed and accuracy of 60 wpm, Colleges of Education. Section E was based on research question four and it focused on effect of utilization of computers on students' proficiency in word-processing for speed and accuracy of 60 wpm in COE, North-West Zone, Nigeria.

These helped to answer the four research questions. Thus, the responses to questionnaire were based on a four-point-scale rating of Strongly Agree (SA – 4 points), Agree (A – 3 points), Strongly Disagree (SD – 2 points), and Disagree (A – 1 point). Similarly, the responses to questionnaire Section C were Strongly Agree (SA – 4 points), Agree (A – 3 points), Strongly Disagree (SD, 1 – 2 points) and Disagree (D – 1 point). Then, the responses to questionnaire Section D were Strongly Agree (SA – 4 points), Agree (A – 3 points), Disagree (D – 2 points) and Strongly Disagree (SD – 1 point). Please refer to Appendix II for details.

### **3.4.1 Validation of the Instrument**

After designing the questionnaire, it was subjected to content and face validity by the researcher's supervisors in the field of Business Education, Department of Vocational and Technical Education of the university and the other experts in the Faculty of Education, Ahmadu Bello University, Zaria, also assessed the content and construct of this instrument. The questions which were not related to the research topics were removed, while, others were modified. Their suggestions and corrections were used in re-drafting the items of the instrument.

### **3.4.2 Pilot Study**

In order to determine the reliability of the instrument for data collection, the researcher conducted a pilot study at COE, Pankshin, Plateau State, which was not one of the Colleges of Education to be used for the study proper. The choice was that this institution possessed the same characteristics with the nine (9) Colleges of Education in North-West Zone, Nigeria. A total of 20 copies of the questionnaire were distributed to the students in the Business Education Section of the Institution to assess the ease with which they responded to the questionnaire. It was also to detect ambiguities in the questionnaire and to evaluate its ability to fulfill the objectives of the study and to test the null hypotheses stated. The completed questionnaire were all collected and subjected to statistical analysis in order to determine the internal consistency of the instrument for data collection.

### **3.4.3 Reliability of the Instrument**

Data from pilot study were analyzed using Pearson Product Moment Correlation Coefficient (PPMCC) on Statistical Package for Social Sciences (SPSS) to determine the reliability of the instrument. The result gave a reliability coefficient computed at 0.87 which fell within the range of 0.94. Hence, the values were adjudged reliable and stable based on Nworgu (2007) who stated that a reliability estimate of 0.80 and above is high and the instrument for which it is calculated is reliable and stable.

### **3.5 Procedure for Data Collection**

The researcher obtained letter of introduction from the office of the Head of Department of Vocational and Technical Education, Ahmadu Bello University, Zaria, for

permission to administer the questionnaire to the various Colleges of Education under study. A total of three hundred (300) copies of the questionnaire were administered to students of Business Education in the colleges using six (6) research assistants within a period of four(4) weeks.

This was done by visiting the entire Colleges of Education offering word-processing in NCE III. Four research assistants covered Bichi, Gusau, Kano and Gumel, while the other two research assistants handled that of Katsina, Kaduna, Zaria and Sokoto. These research assistants visited each of the institutions on a rotational basis to distribute the copies of the questionnaire and also collected them back after completion. The whole exercise lasted for four (4) weeks.

### **3.6 Procedure for Data Analysis**

Data collected for the study were analysed as follows:

The bio-data of the respondents were analyzed using frequencies and percentages, and the research questions were analysed using mean and standard deviation. All the four (4) null hypotheses were tested using logistic regression at 0.05 level of significance ( $P = 0.05$ ). In the test of null hypothesis, if  $R_{cal}$  is greater than the  $R_{crit}$ , the hypotheses would be rejected, if otherwise, it would be accepted or retained.

## **CHAPTER FOUR**

### **DATA PRESENTATION AND ANALYSIS**

This chapter presents the results and interpretation of the findings of the study. It was presented under the following subheadings:

- 4.1 Analysis of Respondents Bio-Data
- 4.2 Answers to Research Questions
- 4.3 Testing of Null Hypotheses
- 4.4 Summary of Major Findings
- 4.5 Discussion of Findings

#### **4.1 Analysis of Respondents Bio-Data**

A total of three hundred (300) NCE III Business Education students in the nine (9) COE, North-West Zone, Nigeria were administered questionnaire. However, two hundred and seventy-eight (278) of them completed and returned theirs. Therefore, the data in this chapter were based on two hundred and seventy-eight (278) respondents. The bio-data selected for the study were: institutions and students area of specializations and the number of practical hours per week in each of the COE, North-West Zone, Nigeria. These variables were tabulated in frequencies and percentages.

**Table 2** Classification of Colleges of Education in the North-West Zone, Nigeria

| S/N          | State   | Institutions       | Location  | No. Of NCE III Business Education WP Students |
|--------------|---------|--------------------|-----------|---|
| 1            | Kano    | F.C.E.             | Bichi     | 30  |
| 2            | Zamfara | F.C.E. (Technical) | Gusau     | 28  |
| 3            | Kano    | F.C.E. (Technical) | Kano      | 40  |
| 4            | Katsina | F.C.E.             | Katsina   | 30  |
| 5            | Kaduna  | F.C.E.             | Zaria     | 42  |
| 6            | Kaduna  | C.O.E.             | GidanWaya | 35  |
| 7            | Gumel   | C.O.E.             | Jigawa    | 30  |
| 8            | Kano    | Sa'adatuRimiC.O.E. | Kumbotso  | 35  |
| 9            | Sokoto  | ShehuShagariC.O.E. | Sokoto    | 30  |
| <b>Total</b> |         |                    |           | <b>300</b>                                    |

**Source:** Field Survey, 2016

**Table 3:** Percentage Classification of Student's Area of Specialization

| Specialization        | Frequency  | Percentage (%) |
|-----------------------|------------|----------------|
| Secretarial education | 278        | 100            |
| <b>Total</b>          | <b>278</b> | <b>100</b>     |

**Source:** Field Survey, 2016

The classification in table 3 revealed that all the students indicated that they were from the Office Technology and Management (OTM) Section of the various schools surveyed amounting to 278 students representing 100%. This was because the study was conducted for Secretarial students, who were in NCE III doing computer word-processing skills in their various Colleges of Education.

**Table 4**      **Number of Practical Hours per Week**

| <b>Specialization</b> | <b>Frequency</b> | <b>Percentage (%)</b> |
|-----------------------|------------------|-----------------------|
| Less than 12          | 247              | 88.8                  |
| 13-20                 | 23               | 8.3                   |
| 21-30                 | 8                | 2.9                   |
| <b>Total</b>          | <b>278</b>       | <b>100</b>            |

**Source:** Field Survey, 2016

From table 4 above, majority of the students revealed that the time stipulated for practical training in the laboratories per week is less than 12 hours with 247 students representing 88.8% affirming this, while 23 other respondents representing 8.3% stated that they do have about 21-30 hours with the remaining 8 students stating that they do have about 21 – 30 hours. The inference to be drawn here was that the practical hours stipulated was not enough for practical training and acquisition of word-processing skill by Business Education students.

## 4.2 Answering the Research Questions

### Research Question One:

What is the effect of availability of computers in the laboratories on students' proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria?

**Table 5** Mean Ratings of respondents on availability of computers in the laboratories on students' proficiency in word processing in COE, North-West Zone, Nigeria

| S/No              | Availability of computers in the labs in Business Education                        | SA          | A           | D          | SD         | N          | CF          | $\bar{X}$   |
|-------------------|--|-------------|-------------|------------|------------|------------|-------------|-------------|
|                   |  | <b>4</b>    | <b>3</b>    | <b>2</b>   | <b>1</b>   |            |             | <b>2.5</b>  |
| 1                 | We have computer laboratories in our school or in our college                      | 736         | 282         | 0          | 0          | 278        | 1018        | 3.66        |
| 2                 | We have adequate number of computers in our school                                 | 56          | 234         | 284        | 44         | 278        | 618         | 2.22        |
| 3                 | The computers in our schools are not adequate                                      | 360         | 456         | 56         | 8          | 278        | 880         | 3.16        |
| 4                 | The students are always more than the computers in the computer laboratory         | 264         | 306         | 156        | 32         | 278        | 758         | 2.72        |
| 5                 | Computers in the laboratories are the same with the number of secretarial students | 88          | 168         | 324        | 38         | 278        | 618         | 2.22        |
| <b>Grand mean</b> |  | <b>1504</b> | <b>1446</b> | <b>820</b> | <b>122</b> | <b>278</b> | <b>3892</b> | <b>2.79</b> |

**Source:** Field Survey, 2016

Based on the computations presented in table 4.2 above, the influence of the availability of computers in the laboratories on Word Processing Skills of Business Education Students from the various institutions surveyed were presented. From the table, questionnaire item one sought to know if there are existing computer laboratories in the schools. From the response, 736 and 282 scores against 0 score for a mean rating of 3.66 which indicated that there were existing computer laboratories in the various institutions surveyed.

Item number 2 was to uncover if there were adequate number of computers in the laboratories in the schools so as to facilitate and improve the teaching of word processing skills in business education in COE. Strongly agree had 56 scores, while 234 scores as against 284 scores for disagree and 44 scores for strongly disagree. On the mean rating of 2.22 implied that the computers made available for teaching of word processing skill were not adequate.

Sequel to the response in Item two, respondents were swift in their response to item number three which stated that the computers in the schools were not adequate. Strongly agree had 360 scores and agree had 456 scores as against 56 and 8 scores for disagree and strongly disagree. The mean rating for the score 3.16 which revealed that the computers in the laboratories were not adequate.

The high level of agreement of 264 and 306 for agree and strongly agree as against the low level of disagreement which stood at 156 and 32 for disagree and strongly disagree as presented in questionnaire item four was a strong indication that the computers made available in the laboratories were not enough to cater for the large

number of students being admitted to study word processing in the schools surveyed. This was further affirmed from the mean score of 2.72.

Questionnaire item five sought to know if the number of computers in the laboratories were the same with the number of OTM students. From the analysis presented, strongly agree and agree had the scores of 88 and 168 as against 324 scores for disagree and 38 for strongly disagree. The mean rating for the scores on the item was 2.22 which indicated disagree inferring that the number of OTM students were more than the number of computers made available to teach them in the computer laboratories.

The grand mean score for those who strongly agree and agree as against those who disagree that the availability of computers in the laboratories had effect on the teaching and learning of word processing was also presented. Strongly agree had 1504 scores and agree had 1446, while disagree had 820 scores and strongly disagree had 122 scores. The mean rating of the score in the items was 2.79 which indicated agree. Therefore, it could be deduced that the availability of computers in the laboratories had effect on word processing skill of business education students. It also further promotes the teaching and learning and enhances speed and accuracy.

The check list for availability of computers in the laboratories in the colleges of education is in Appendix IV.

### Research Question Two:

What is the effect of the functionality of computers in laboratories on students' proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria?

**Table 6: Mean Ratings of Respondents on Functionality of Computers in the Laboratories on students' proficiency in word processing in Colleges of Education, North-West Zone, Nigeria**

| S/No              | Functionality of computers in the lab of Business Education in COE                                       | SA          | A           | D           | SD         | N          | CF          | $\bar{X}$   |
|-------------------|--|-------------|-------------|-------------|------------|------------|-------------|-------------|
|                   |  | <b>4</b>    | <b>3</b>    | <b>2</b>    | <b>1</b>   |            |             | <b>2.5</b>  |
| 18                | I do not feel competent with the use of computer word-processing in learning                             | 312         | 507         | 48          | 7          | 278        | 874         | 3.14        |
| 19                | Students need further trainings to be able to utilize computer laboratories word-processing skills       | 528         | 336         | 54          | 9          | 278        | 927         | 3.33        |
| 20                | Most students do not know how to operate some of the available computers in word processing laboratories | 384         | 360         | 94          | 15         | 278        | 853         | 3.06        |
| 21                | I do not feel comfortable when lectures are presented with overhead projector                            | 74          | 126         | 240         | 78         | 278        | 518         | 1.86        |
| 22                | I am proficient in word processing application   | 128         | 204         | 196         | 80         | 278        | 608         | 2.18        |
| 23                | I have no knowledge of word-processing   | 12          | 33          | 412         | 58         | 278        | 515         | 1.85        |
| <b>Grand mean</b> |  | <b>1438</b> | <b>1566</b> | <b>1044</b> | <b>247</b> | <b>278</b> | <b>4295</b> | <b>2.57</b> |

Source: Field Survey, 2016

Based on the rating shown in Table 4.5, questionnaire item eighteen (18) sought to know if students feel incompetent with the use of computers in learning word processing showed the scores of 312 and 507 for strongly agree and agree as against 48 and 7 scores for disagree and strongly disagree. The mean rating on the item was 3.14 which implied agreed.

Questionnaire item nineteen (19) revealed that students need further training (consistent training) to be able to utilize the computers made available to them for the learning of word processing skill with strongly agree having a score of 528 and agree scoring 336 as against 54 scores for disagree and 9 score for strongly disagree. The mean rating on the item was 3.33 which implied agreed.

Questionnaire item twenty (20) stated that some of the students do not know how to operate the computers in the word processing laboratories. The scores on strongly agree was 348 and that of agree was 360 as against that of disagree at 96 and strongly disagree at 15. The mean rating on the item was 3.06 which implied agreed.

Questionnaire item twenty one (21) which sought to know if students feel comfortable when lectures were presented using overhead projector revealed that most students do feel comfortable when lectures were presented with overhead projectors especially when word processing was being taught with strongly agree and agree having 74 and 126 scores as against disagree and strongly disagree having 240 and 78 scores respectively. The mean rating on the item was 1.86 which implied disagree.

Questionnaire item twenty two (22) sought to find out if students were proficient in the use of word processing application. This showed the scores of 128 and 204 for

strongly agree and agree as against the scores of 196 and 80 for disagree and strongly disagree. The mean rating on the item was 2.18 which implied disagree.

Questionnaire item twenty three (23) revealed that business education students from the schools surveyed have knowledge of word processing as they unanimously disagreed to the assertion that they do not have knowledge of word processing with strongly agree having a score of 12 and agree having 13 scores as against 412 for disagree and 58 scores for strongly disagree. This was further affirmed from the mean rating on the item which was 1.85 implying disagreed.

The grand mean score of those who strongly agree and agree stood at 1438 and 1566, and those who disagree and strongly disagree stood at 1044 and 247. The mean rating on the item was 2.57 which implied agreed.

**Research Question Three:**

What is the effect of the accessibility of computers in the laboratories on students' proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria?

**Table 7: Mean Ratings of Respondents on Effects of the accessibility of Computers in the Laboratories on students' proficiency in word processing in C.O.E., North-West Zone, Nigeria**

| S/No              | Effect of Accessibility of Computers in the Labs in Business Education in COE, North-West Zone | SA          | A           | D          | SD         | N          | CF          | $\bar{X}$   |
|-------------------|--|-------------|-------------|------------|------------|------------|-------------|-------------|
|                   |  | 4           | 3           | 2          | 1          |            |             | 2.5         |
| 6                 | Some of the computers in the laboratories are not functional                                   | 448         | 381         | 54         | 12         | 278        | 895         | 3.21        |
| 7                 | Most of the computers in the laboratories have technical faults                                | 128         | 444         | 168        | 42         | 278        | 782         | 2.81        |
| 8                 | All the computers in the laboratories are virus infected                                       | 248         | 228         | 164        | 58         | 278        | 698         | 2.51        |
| 9                 | Some of the computers in the laboratories are obsolete   | 224         | 324         | 124        | 52         | 278        | 724         | 2.60        |
| 10                | All the computers in the laboratories are functioning  | 148         | 363         | 92         | 74         | 278        | 677         | 2.43        |
| 11                | Less than half of the computers in the laboratory are not functional                           | 328         | 363         | 104        | 23         | 278        | 818         | 2.94        |
| <b>Grand mean</b> |  | <b>1524</b> | <b>2103</b> | <b>706</b> | <b>261</b> | <b>278</b> | <b>4594</b> | <b>2.75</b> |

**Source:** Field Survey, 2016

Based on the rating shown in table 4.3, questionnaire item number 6 showed that the computers provided in the laboratories were not functional thereby could hinder the proper teaching and learning of word processing by business education students with

strongly agree and agree having 448 and 381 scores as against those who disagree with 54 and 12 scores. The mean rating for the score on the item was 3.21 which further confirmed that not all the computers in the laboratories were functional.

Questionnaire item 7 seeks to find out if most of the computers in the laboratories had technical faults. Strongly agree had 128 scores and agree had 444 scores as against 168 scores for disagree and strongly disagree having 48 scores. The mean rating for the scores on the item was 2.81. This indicated that though computers were being provided for the teaching of word processing, most of them have technical faults which could hinder the teaching of this course.

Questionnaire item 8 revealed that all the computers in the laboratories were virus infected with the respondents unanimously affirming to this with strongly agree having 248 scores and agree having 228 scores as against disagree and strongly disagree scoring 164 and 58 respectively. The mean rating on the item was 2.51 which indicated agreed.

Questionnaire item 9 stated that some computers provided for the teaching and learning of word processing for business education students in the various schools surveyed were obsolete. This was affirmed to be true with strongly agree and agree having scored 224 and 324 scores as against disagree and strongly disagree with scores of 124 and 52. The mean rating on the item also affirmed with a mean score of 2.60.

Questionnaire item ten (10) stated that all the computers in the laboratories were functioning. The scores on strongly agree was 148 and agree was 363. Also, disagree was 92 and strongly disagree was 74. The mean score on the item was 2.43. It could be deduced here that the assertion made was debunked and unanimously disagreed based on the mean rating on the item.

Questionnaire item eleven (11) stated that less than half of the computers provided in the laboratories were functional. This was affirmed to be true with strongly agree and agree attributing a higher score of 328 and 363 respectively while disagree and strongly disagree had 104 and 23 scores. The mean rating on the item was 2.94 which further affirmed the unanimous agreement of the respondents.

From the analysis given above, the grand mean total score of those who agreed that functionality of computers had effect on the teaching of word processing stood at 1524 and 2103 as against those who disagree with 706 and 261 scores. The mean rating on the items was 2.75 which implied agreed. We could conclusively infer here that the computers being provided for the teaching of word processing in business education departments from the schools surveyed were not adequate and not functioning at optimal level as revealed from the mean ratings on the items. This could portend a negative effect on the word processing skill acquisition of the students as they may not be properly trained on the use of word processing to acquire the speed and accuracy and 50 wpm.

**Research Question Four:**

What is the effect of the utilization of computers in the laboratories on students' proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria?

**Table 8: Mean Ratings of respondents on effect of utilization of computers in the laboratories on students' proficiency in word processing in Colleges of Education, North-West Zone, Nigeria**

| S/No              | Utilization of computers in the lab of Business Education in COE   | SA          | A           | D          | SD         | N          | CF          | $\bar{X}$   |
|-------------------|--|-------------|-------------|------------|------------|------------|-------------|-------------|
|                   |  | <b>4</b>    | <b>3</b>    | <b>2</b>   | <b>1</b>   |            |             | <b>2.5</b>  |
| 12                | Students do not access computers in the lab for learning because the available ones are unreliable due to lack of regular servicing            | 348         | 441         | 66         | 11         | 278        | 866         | 3.11        |
| 13                | Computer laboratory can accommodate more than 30 students at once for practical  | 40          | 126         | 380        | 36         | 278        | 582         | 2.18        |
| 14                | Usage of word processing in the laboratory is not necessary in learning  | 56          | 66          | 382        | 51         | 278        | 555         | 1.99        |
| 15                | Students do not utilize computer in the laboratories for learning due to the fact that they have no access to functioning computers in the lab | 312         | 321         | 123        | 27         | 278        | 783         | 2.82        |
| 16                | Students do not access computer laboratories because there are no technical support staff  | 328         | 528         | 24         | 8          | 278        | 888         | 3.20        |
| 17                | The available computers are not used regularly due to lack of electric power supply  | 472         | 396         | 36         | 10         | 278        | 914         | 3.29        |
| <b>Grand mean</b> |  | <b>1768</b> | <b>2298</b> | <b>693</b> | <b>109</b> | <b>278</b> | <b>4868</b> | <b>2.77</b> |

**Source:** Field Survey, 2016

Based on the rating shown in table 4.4, questionnaire item twelve (12) which stated that lack of regular servicing hinder students from accessing computers in the laboratories showed the scores of 348 and 441 for strongly agree and agree as against the scores of 66 and 11 for disagree and strongly disagree. The mean rating on the item stood at 3.11 which indicates agreed which showed that students do not make use of the computers in the laboratories because they are unreliable due to lack of servicing or maintenance.

Item thirteen (13) was to find out if the computers in the laboratory can accommodate more than 30 students in the laboratory for a practical session. This was unanimously debunked by the respondents. Strongly agree had 40 scores and agree had 126 scores as against disagree which had 380 scores and strongly disagree with 36 scores. The mean score in the item was 2.18 which showed that the computers in the laboratories do not accommodate enough students for a practical session.

Questionnaire item fourteen (14) which states that usage of word processing in the classroom was not necessary for learning showed a ranking of 56 and 66 scores for strongly agree and agree as against the scores of 382 and 51 for disagree and strongly disagree. The mean rating on the scores was 1.99 implying disagree.

Questionnaire item fifteen (15) showed that students do not utilize computers in the laboratories due to the singular fact that they had no access to functioning computers in the laboratories with strongly agree and agree having a ranking scores of 312 and 321 respectively as against 123 and 27 scores for disagree and strongly disagree. The mean rating on the item was 2.82 which implied agreed.

Questionnaire item sixteen (16) also showed that students do not access the computers in the laboratories due to the fact that there were no technical staff in the departments to guide them on what to do, with the rating score of 328 for strongly agree and 528 for agree as against the 24 scores for disagree and 8 scores for strongly disagree. The mean rating on the item was 3.20 which implied agree. From the above, we could surmise here that, there were not enough technical staff to guide students on the use of computers for onward teaching of word processing in the departments surveyed.

Questionnaire item seventeen (17) was presented to find out if the computers were not being used at optimal level due to electric power supply. This showed the scores of 472 for strongly agree and 396 for agree as against 36 and 10 scores for disagree and strongly disagree indicating that lack of regular power supply hinder students from making use of the computers in the laboratories. This was also affirmed from the mean rating on the item which showed a score of 3.92 indicating agreed.

From the analysis above, it was observed that students do not have access to the computers as expected, as the computers made available could not accommodate every student when teaching was going on and even during practical hours. It is conclusively surmised here that accessibility of computers in the laboratories had effect on the acquisition of word processing skill by business education students in North-West Zone, Nigeria as affirmed from the grand mean total scores presented in table 4.4 with a grand mean rating of 2.77 which implies agreed.

### 4.3 Test of Null Hypotheses

In pursuance of the objectives of this study and to provide statistical solutions to the question raised, four null hypotheses were formulated. The hypotheses were tested using Regression Analysis to ascertain whether there is a significant influence and the hypotheses were tested at 0.05 level of significance.

#### Null hypothesis One:

There is no significant influence of availability of computers on students' proficiency in word processing for speed and accuracy of 60 words per minute in colleges of education in North West zone, Nigeria.

**Table 9: Regression Analysis for Influence of Availability of Computers in the Laboratories on Students proficiency in Word-Processing**

| Variables                          | N   | Mean   | Std.Dev. | Df                      | R-cal    | R-crit          | r <sup>2</sup> | P Value |
|------------------------------------|-----|--------|----------|-------------------------|----------|-----------------|----------------|---------|
| Proficiency in word processing     | 278 | 1.3381 | 0.47393  |                         |          |                 |                |         |
|                                    |     |        |          | 276                     | 2871.192 | 0.087           | 0.912          | 0.000   |
| Availability of computers in Labs. | 278 | 1.8345 | 0.71696  |                         |          |                 |                |         |
| <b>Source: Field Work, 2016</b>    |     |        |          | <b>r-crit = (0.087)</b> |          | <b>P ≤ 0.05</b> |                |         |

Result of data used to test the null hypothesis one in Table 9 revealed the existence of a significant influence on availability of computers in the laboratories and acquisition of word-processing skills by business education students. This position was confirmed by the outcome of the table which showed a mean score of 1.33 with standard deviation of 0.47 for availability of computers in the schools against a mean of 1.83 with standard deviation of 0.72 for adequacy of computers in the schools surveyed. The calculated r value was greater than the critical r value (2871.192 > 0.087) at the 276 degree of freedom and the alpha level of significance observed in the test is 0.000 (P <

0.05). Since the r-calculated was greater than the r-critical, it therefore mean that the null hypothesis which state that availability of computers in the laboratories has no significant influence on word-processing skills acquisition of Business Education Students in colleges of Education, North-West Zone, Nigeria is therefore rejected.

**Hypothesis Two:**

There is no significant influence of functionality of computers on students’ proficiency in word processing for speed and accuracy of 60 words per minute in colleges of education, North West Zone, Nigeria.

**Table 10: Regression analysis for influence of functionality of computers in the laboratories on students’ proficiency in word-processing**

| Variables                         | N   | Mean   | Std.Dev. | Df  | r-cal    | r-cri | r <sup>2</sup> | P Value |
|-----------------------------------|-----|--------|----------|-----|----------|-------|----------------|---------|
| Proficiency in word processing    | 278 | 1.7806 | 0.79169  |     |          |       |                |         |
|                                   |     |        |          | 276 | 5107.476 | 0.087 | 0.949          | 0.000   |
| Functionality of Computers in Lab | 278 | 2.4892 | 1.05698  |     |          |       |                |         |

**Source: Field Work, 2016**      **r-crit = (0.087) P ≤ 0.05**      **\*Significant P < 0.05**

Result of data used to test the null hypothesis two in Table 10 revealed the existence of a significant influence between functionality of computers in the laboratories and acquisition of word-processing skills by business education students. This position was confirmed by the outcome of the table which showed a mean score of 1.78 with standard deviation of 0.79 for partial functioning of computers in laboratories against a mean of 2.49 with standard deviation of 1.06 for full functioning of computers in the laboratories. The calculated r value was greater than the critical r value (5107.476 >0.087) at the 276 degree of freedom and the alpha level of significance observed in the

test is 0.000 ( $P < 0.05$ ). Since the r-calculated was greater than the r-critical, it therefore mean that the null hypothesis which state that functionality of computers in the laboratories has no significant influence on word-processing skills acquisition of Business Education Students in colleges of Education, North-West Zone, Nigeria is therefore rejected.

**Hypothesis Three:**

There is no significant influence of accessibility of computers on students’ proficiency in word processing for speed and accuracy of 60 words per minute in colleges of education, North West Zone, Nigeria.

**Table 11: Regression Analysis for influence of accessibility of computers in the laboratories on students’ proficiency in word-processing**

| Variables                        | N   | Mean   | Std.Dev. | Df  | r-cal    | r-cri | r <sup>2</sup> | P Value |
|----------------------------------|-----|--------|----------|-----|----------|-------|----------------|---------|
| proficiency in word processing   | 278 | 1.8849 | 0.76076  |     |          |       |                |         |
|                                  |     |        |          | 276 | 6950.331 | 0.087 | 0.962          | 0.000   |
| Accessibility of Computer in Lab | 278 | 1.8993 | 0.59837  |     |          |       |                |         |

**Source: Field Work, 2016**      **r-crit = (0.087)  $P \leq 0.05$**       **\*Significant  $P < 0.05$**

Result of data used to test the null hypothesis three in Table 11 revealed a mean score of 1.88 with standard deviation of 0.76 for lack of access to the use of computers in laboratories against a mean of 1.89 with standard deviation of 0.59 for computer laboratories can accommodate more than 30 students. The calculated r value was greater than the critical r value ( $6950.331 > 0.087$ ) at the 276 degree of freedom and the alpha level of significance observed in the test is 0.000 ( $P < 0.05$ ). The result revealed the existence of a significant influence between accessibility of computers in the laboratories

and acquisition of word-processing skills by business education students. Since the r-calculate is greater than r-critical, it therefore implied that the null hypothesis which state that accessibility of computers in the laboratories has no significant influence on word-processing skills acquisition of Business Education Students in colleges of Education, North-West Zone, Nigeria is therefore rejected.

**Hypothesis Four:**

There is no significant influence of utilization of computers on students’ proficiency in word processing for speed and accuracy of 60 words per minute in colleges of education, North West, Zone, Nigeria.

**Table 12: Regression Analysis for Influence of Utilization on Computers in the Laboratories on Students’ proficiency in Word-Processing**

| <b>Variables</b>                 | <b>N</b> | <b>Mean</b> | <b>Std.Dev.</b> | <b>Df</b> | <b>r-cal</b> | <b>r-cri</b> | <b>r<sup>2</sup></b> | <b>P Value</b> |
|----------------------------------|----------|-------------|-----------------|-----------|--------------|--------------|----------------------|----------------|
| Proficiency in word processing   | 278      | 1.9317      | 0.85333         |           |              |              |                      |                |
|                                  |          |             |                 | 276       | 4602.807     | 0.087        | 0.943                | 0.000          |
| Utilization of computers in Lab. | 278      | 1.6942      | 0.77648         |           |              |              |                      |                |

**Source: Field Work, 2016**      **r-crit = (0.087) P ≤ 0.05**      **\*Significant P < 0.05**

Result of data used to test the null hypothesis four in Table 12 revealed a mean score of 1.93 with standard deviation of 0.85 for lack of utilization of computers in the laboratories against a mean of 1.69 with standard deviation of 0.77 for students need further training to be able to utilize computer laboratories word-processing skills. The calculated r value was greater than the critical r value (4602.807 > 0.116) at the 276 degree of freedom and the alpha level of significance observed in the test is 0.000 (P < 0.05). The result revealed the existence of a significant influence on utilization of

computers in the laboratories and acquisition of word-processing skills by business education students. Since the  $r$ -calculate is greater than the  $r$ -critical, it therefore implied that the null hypothesis which state that utilization of computers in the laboratories has no significant influence on word-processing skills acquisition of Business Education Students in colleges of Education, North-West Zone, Nigeria is therefore rejected.

#### **4.4 Summary of Major Findings**

The following are the major findings of the study:

1. Research question one supported by null hypothesis one revealed that existence of significant availability of computers in the laboratories influences students' proficiency in word-processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria.
2. Similarly, research question two supported by null hypothesis two showed that, there was significant influence between functionality of computers in the laboratories on students' proficiency in word-processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Nigeria.
3. The other findings in research question three supported by null hypothesis three equally revealed that students' accessibility of computer in the laboratories influence their proficiency in word-processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Nigeria.
4. More so, research question four supported by hypothesis four also revealed that utilization of computers in the laboratories has significant influence on students'

proficiency in word processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria.

Finally, results revealed that the use of computer laboratories and ICT resources has the potential to improve students' proficiency in word-processing for speed and accuracy of 60 words per minute in Colleges of Education, North-West Zone, Nigeria. However, this possibility was confronted by a number of challenges. These challenges included among others, inadequate resources, power failure, absence of technical support staff, negative disposition towards it, and inaccessibility of ICT resources as a result of inadequacy was a major challenge.

The result also highlighted that students had access to computers in the laboratories that were available in these institutions; the challenge was that they were not in sufficient quantity. It follows that only few computers were accessible to students as majority of the computers were broken-down and not functioning at optimal level, as such, few practical periods were allocated to students. As a result, majority of the students were deprived the proficiency for acquiring the speed and accuracy of 60 words per minute in words processing.

Also, the extent of students' utilization of computer in the laboratories was very low sequel to lack of electric power supply, and lack of technical support staff among other things.

#### **4.5 Discussion of Findings**

This research work was specifically carried out on Assessment of the Availability, Accessibility and Utilization of Computers on Students' Proficiency in Word-Processing in Colleges of Education in North-West, Nigeria. In order to achieve this purpose, four specific objectives, four research questions and four research hypotheses were raised. The research question one showed the grand mean score of 2.79 for all the items in the section. More so, it was also revealed that though laboratories were made available with computers in them, the respondents revealed that these computers most times do not commensurate with the number of students in their various departments. It was further revealed in the test of null hypothesis that the probability level of significant observed in the test was 0.000 ( $P < 0.05$ ). This showed that availability of computers in the laboratories has significant influence on Business education students' proficiency in word-processing skills. The finding is in line with Nworgu (2008) who asserts that the use of computers and its laboratories as an instruction provides the learner with the different background and characteristics. Such background may be in the form of tutorials, drills and practices as well as simulation. Also, Acharu (2014) posited that ICT equipment's must be made available for the effective teaching and remarkable improvement in the performance of students in skills acquisition. It is important to state here that provision of computers in the laboratories and continuous teaching of computer skills will in turn result in sufficient computers experience for the students in the institutions which can seriously enhance the use of it (UNESCO, 2002). The general observation was that most students were of the opinion that few of the resources were available.

The result of the findings revealed that Functionality of computers in the laboratories has significant influence on Business Education students' proficiency in word-processing skill acquisition in Colleges of Education as can be seen in Table 4.3 and in the test of hypothesis. But in view of the requirements for Office Education course implementation, most of these resources which were not available in these institutions happen to be very vital as its quality and ability to serve a purpose well is most thought off. The study revealed from the null hypothesis that functionality of computers in the laboratory influences the acquisition of word-processing skill by business education students. It could also be observed from table 4.3 the extent of the functionality of computers in the laboratories. The mean score of those who said that functionality of computers influence the teaching of word processing skill of business education students stood at 1524 and 2103 as against 706 and 261 scores with an aggregate mean score of 2.75. It was observed that the computers being provided for the teaching of word processing in business education departments from the schools surveyed were inaccessible and in some cases lacking and also not functioning at optimal level as revealed from the mean ratings on the item. This applied to technical support staff, computers and up-to-date software. This could portend a negative influence on the proficiency of word processing skill acquisition of the students as they may not be properly trained on the use of word processing. This is in line with the study of Afolayan (2013) who opined that ICT resources provided for students in tertiary institutions especially vocational studies must be functioning at optimal level and updated with current software's to meet the diverse needs of the work place.

Gulbahar (2007) opined that accessibility to up-to-date hardware and software resources was a key feature in the diffusion of technology. Effective adoption and integration of ICT resources into teaching in schools depends mainly on the availability and accessibility of computer software, hardware, etc. From the study, it was observed that students do not have access to the computers as expected as the computers made available cannot accommodate every student when teaching is going on and even during practical hours as shown in Table 4.4 which could portend a negative influence on the acquisition of word-processing skill by business education students in North-West Zone, Nigeria. This is affirmed from the null hypothesis which showed that accessibility of computers in the laboratory influences the word-processing skill acquisition of business education students. This is also in line with the study conducted by Plomp, Anderson, Law and Quale (2009). They stated that access to computers, updated software and hardware are key elements to successful adoption and integration of technology in teaching and learning.

Also, the study revealed that the computers provided were not being utilized and most students were not proficient in using them as shown in Table 4.5. This is not unconnected to the fact that most of the lecturers or tutors were not that proficient in using these ICT gadgets thereby making learning more difficult and cumbersome. The lack of utilization of these equipment by students goes a long way in affecting the way they learn and also could affect their zeal for the subject. This is affirmed from the null hypothesis which showed that utilization of computers in the laboratory influences students word-processing skill acquisition. This is in agreement with Shoenyink and Ertmers (2001) who stated that external barriers to the utilization of computers in

teaching include lack of equipment's, unreliability of equipment, and lack of technical support staff. Mbogu (2010) opined that when students are not taught properly especially by an incompetent tutor, there is the tendency of losing interest in learning.

The need for students improved performance in word processing skill acquisition provided this study the impetus to examine differently as regards proficiency, speed and accuracy in word-processing competence and its effects on students as they undertake their pursuit of academic excellence. Having noted the various challenges being faced by business education students in skill acquisition with specific emphasis on word processing, it becomes pertinent for a review as such to empirically determine the level of significance as to note if it is positive or negative. As shown in this study, it was discovered that lecturers' competence significantly influences utilization of computers on students' proficiency in word-processing in Colleges of Education, North-West Zone, Nigeria. This is in line with the study of Pelgrum (2001) who opined that the success of educational innovations depends largely on the skills and knowledge of lecturers. As stated by Acharu (2014) lecturer' lack of knowledge and skills was one of the main hindrances to the use of computers in education both for the developed and underdeveloped countries. Also, Afshari et al, (2009) found that teacher's belief in their competence was the greatest predictor of their use of computers in teaching. Therefore, lack of knowledge regarding the use of computers and lack of skill on computer tools and software have also limited the use of ICT tools in teaching and learning.

Non-availability of technical support staff and lack of constant power supply were unanimously pointed out as a challenge to the use of computer laboratories/ICT resources in teaching and learning. Jones (2004) confirmed the above findings when he reported

that the breakdown of a computer causes interruptions, and if there was lack of technical assistance, then it was likely that the regular repairs of computer will not be carried out resulting in students not using computers in learning. The effect is that students will be discouraged from using computers because of fear of equipment failure since no one would give them technical support in case there are technical problems.

Afshari et al (2009) suggested that professional training was necessary for teachers to enable them effectively use technology to improve students' learning, that the training must prepare teachers to use technology effectively in their teaching. They added that this training should not consist merely of short training and workshops, which is not enough to build proper knowledge and skills.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter is presented under the following sub-headings:

- 5.1 Summary
- 5.2 Contribution to Knowledge
- 5.3 Conclusion
- 5.4 Recommendations
- 5.5 Suggestion for further Study

#### **5.1 Summary**

The study primarily was undertaken to determine the Assessment of the Availability, Accessibility and Utilization of Computers on Students' Proficiency in Word-Processing in Colleges of Education, North-West Zone, Nigeria. In an attempt to make the research free from ambiguities and to achieve the stated objectives of the study, four research questions were raised and four null hypotheses were formulated in the first chapter of this research work. Literature review showed a number of empirical studies by theorists, researchers and writers related to the topic under research. The research was based on Rogers Skill Diffusion of Innovation Theory, which according to Medlin (2001) is the most appropriate theory to base research on when it bothers on uptake of technology at higher institutions.

The study population was sampled from OTM (Office Technology and Management) Business Education students offering word-processing at the various

Colleges of Education (Federal and State). The data collected were presented in line with the objectives and research questions.

Moreso, the study looked at some details at the ICT policy in Nigeria and enumerated the general objectives of ICT as put forward by Nigerian National Policy for ICT, and considered the benefits in education. Furthermore, it highlighted resource utilization in teaching students and these are: readily available technical support, perceived usefulness, access to ICT resources/computers, adequacy of ICT resources, supportive policies and accessible training. Six empirical studies were reviewed in all. All these researchers' findings and recommendations helped the current researcher in the choice of objectives. However, the researcher noted that none of the study focused on Colleges of Education; none of them considered the variable students alone; none focused on North-West Zone.

The reviewed studies all sought to test for differences in opinions of the groups of respondents, while, the current researcher sought to test for effect between the variables involved in the study. In view of the above, these are some of the gaps noticed and which the current study has closed. Descriptive research design was used in this study. The population for the study consisted of three hundred (300) final year students of NCE III doing word-processing in the nine (9) Federal and State Colleges of Education within the North-West Zone, Nigeria.

The researcher used the entire sample population since they were few in number. The instrument used for the study was a four-point scale questionnaire. Section A focused on percentage classification of students' area of specialization. Section B focused on number of students' practical hours per week respectively. The responses to

Section A were analyzed using percentages, while Sections B, C, D and E were analyzed using descriptive statistics and standard deviation to answer the research questions. Data were supplied by 278 respondents, and the data were analysed using descriptive statistics, r-test was used to test for effect and Pearson Product Moment Correlation Coefficient (PPMC) was used to test for influence. All null hypotheses were tested at 0.05 alpha level of significance and all the four (4) null hypotheses were rejected.

The study revealed that computers made available were not being adequately utilized and most of the students were not proficient in using them as shown in table 5 as the practical periods were short. Only few computers were accessible to students as majority of them were broken-down and as such not functioning at optimal level to compliment the practical periods allocated to students.

Inadequate learning resources like word-processing software (Microsoft Office and Open Office) that respondents confirmed their unavailability were grossly inaccessible with the exception of few computers.

Irregular power supply and non-availability of technical support staff was an impediment to the utilization of computers and ICT resources for students' proficiency in word-processing for the acquisition of 60 w.p.m. in word-processing.

Despite the fact that most lecturers had a general knowledge of ICT resources, students were not proficient in the use of some Office Education applicable packages of the packages like the Spreadsheet and Power Point presentation. In spite of the fact that lecturers perceived that utilization of computer laboratories/ICT resources could increase learners' achievement by making it more interesting and effective, some of them were of the opinion that it could cause distractions in the class as well as make lecture preparation

difficult. Irregular power supply and non-availability of technical support staff was an impediment to the utilization of computer laboratories/ICT resources in teaching OTM students in Business Education.

## **5.2 Contribution to Knowledge**

The study revealed that:

1. Availability of computers in the laboratories on students' proficiency in word-processing for speed and accuracy of 60 wpm in colleges of education, North-West zone, Nigeria with the statistical value of  $R\text{-cal } 2871.192 > R\text{-crit } 0.087$ ;
2. Influence of functionality of computers in the laboratories on students' proficiency on word-processing for speed and accuracy of 60 wpm in Colleges of Education, North-West Zone, Nigeria at a value of  $R\text{-cal } 5107.476 > R\text{-crit } 0.087$ ;
3. Influence of accessibility of computers in the laboratories on students' proficiency in word-processing for speed and accuracy of 60 wpm in Colleges of Education, North-West Nigeria at a statistical value of  $R\text{-cal } 6950.331 > R\text{-crit } 0.087$ ;
4. Influence of utilization of computers in the laboratories on students' proficiency for speed and accuracy of 60 wpm in Colleges of Education in North-west Zone, Nigeria at a statistical value of  $R\text{-cal } 4637.258 > R\text{-crit } 0.087$ .

### **5.3 Conclusion**

Based on the major findings of this research work, the following conclusions were made:

Owing to the fact that most laboratory computers/ICT resources were not available, inadequate, obsolete, and not functioning at optimal level for students' use, students were deprived of the benefits of learning and acquiring the proficiency for speed and accuracy of 60 w.p.m. in word-processing which could have improved their skills' competence required for self-reliance and for office of today.

Few of the lecturers who were proficient in ICT resource usage could not utilize it for the benefit of the students because they had no technical support staff. Similarly, disruptions caused by epileptic power supply and the absence of an alternative power supply such as power generators or solar energy to drive. These resources kept students from utilizing the laboratories computers and their resources.

The utilization of computer laboratories/resources in teaching Office Education students is capable of enhancing learners' understanding, assimilation and retention of knowledge and skills. Unfortunately, Office Technology and Management students of the Colleges of Education, North-West Zone, have been deprived of these enormous benefits which could have gone a long way in increasing their proficiency for speed and accuracy in word-processing and raising the fallen standard of education in the country.

## **5.4 Recommendations**

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

1. Government and stakeholders should endeavor to make sufficient funds available for the colleges so as to be able to procure enough functional computers for students to ensure that they acquire the skills of word-processing, and where this is not forth-coming, college management should appeal to business organizations within the schools localities for either financial or materials support.
2. Adequate learning resources like word-processing software (Microsoft Office and Open Office). These are packages that house micro software for typing, access for data design and excel for spreadsheet, should be made available for these students, and also practical periods increased from 2 hours to 3 hours as this would aid easy understanding and mastery on students' computer proficiency for speed and accuracy of 60 words per minutes in word-processing in Colleges of Education, North-West Zone, Nigeria.
3. Workshops, seminars and comprehensive training and re-training programmes on word-processing skills acquisition and other ICT resource utilization should be organized by the Colleges of Education for training of more competent lecturers to enable them gain current knowledge of the subject-matter.
4. National Commission of Colleges of Education should bring together all the Secretarial Education curriculum experts, teachers, representatives of ministers to revisit the existing curriculum and most importantly, to ensure that word-processing skills acquisition is repositioned and made a core subject in the

syllabus of OTM (Office Technology and Management) students in Colleges of Education, North-West Zone, Nigeria.

5. Alternative power supply sources such as power generators or solar energy to drive these sources should be provided in the colleges and where government cannot make these available, institutions should put up an internal arrangement where the cost is built into the students' school fees or tuition in order to pay for the cost of these infrastructures.

### **5.5 Suggestions for Further Study**

Based on the limitation of the study, the researcher wishes to suggest empirical studies in the following areas:

- a. Role of Word-Processing Skills Acquisition by OTM Students in the 21<sup>st</sup> Century: A Comparative Study.
- b. Influence of Availability, Accessibility and Adequacy of Computer Laboratories on OTM Students' Academic Achievement in Colleges of Education in North-Eastern Nigeria.

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## APPENDIX I



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

Telephone 069-51755, 50692

VICE CHANCELLOR: Professor Ibrahim Garba, B.Sc (Hons) Geology, M.Sc (Mineral Exploration) ABU, Ph.D Geology (London), D.I.C., FNMGS  
INTERIM HEAD OF DEPARTMENT: Dr. Sani Ibrahim, B.B.Ed, M.Ed, Ph.D (ABU)

2<sup>nd</sup> November, 2017

Your Ref: M.ED/EDUC/63241/2011-2012 /P16EDVE8239

Date: \_\_\_\_\_

Our Ref: \_\_\_\_\_

#### LETTER OF IDENTIFICATION

**AUGUSTINA NNENNA ODIGIE -  
M.ED/EDUC/63241/2011-2012 /P16EDVE8239**

This is to certify that the above mentioned person is a Postgraduate student (M.Ed Business Education) in this Department. She is carrying out a research on **Assessment of the Availability, Accessibility and Utilization of Computers on Students' Proficiency in Word-Processing in Colleges of Education in North west Nigeria.**

kindly give her every assistance she may require .

Dr. Sani Ibrahim  
Interim Head of Department

## **APPENDIX II**

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

Dear Respondents,

### **LETTER OF INTRODUCTION**

I am a postgraduate student currently undergoing a research work on the topic “Assessment of the Availability, Accessibility and Utilization of Computer on Students’ Proficiency in Word-Processing in Colleges of Education in North-West Zone, Nigeria.”

The questionnaire is designed to obtain data for the research work. Please, kindly fill the questionnaire as objectively as possible.

All information provided will be treated as confidential, and used only for the purpose of this study.

Your cooperation and assistance will be highly appreciated.

Thank you.

Yours faithfully,

**Augustina Nnenna Odigie**  
(M.Ed/Ed/Educ/6324/2011 -2012)

## APPENDIX III

### QUESTIONNAIRE FOR BUSINESS EDUCATION STUDENTS

#### SECTION A

**Instruction:** Please, tick (√) where appropriate

#### Personal Data

1. Name of Institution
  
2. Area of specialization: (a) Accounting education [  ]  
(b) Secretarial Education [  ] (c) Distributive education [  ]  
(d) Others, specify
  
3. Number of practical periods per week  
Less than 12 [  ]  
13 – 20 [  ]  
21 – 30 [  ]  
30 and above [  ]

Please answer all the questions in Sections B, C, D, E, and F. There are four options provided for each question, please tick one as it applies in your institution.

| <b>SECTION B</b> | <b>Effect of availability of computers on students' proficiency in word-processing for speed and accuracy of 60 wpm in COE, North-West Zone</b>              | <b>SA</b> | <b>A</b> | <b>SD</b> | <b>Disagree</b> |
|------------------|--|-----------|----------|-----------|-----------------|
| <b>S/N</b>       |  |           |          |           |                 |
| 1                | We have computer laboratories in our school or in our college.   |           |          |           |                 |
| 2                | We have adequate number of computers in our school.  |           |          |           |                 |
| 3                | The computers in our schools are not adequate.   |           |          |           |                 |
| 4                | The students are more than the computers in the computer laboratories.   |           |          |           |                 |
| 5                | Computers in the laboratories are the same with the number of secretarial students.  |           |          |           |                 |
| <b>SECTION C</b> | <b>Influence of functionality of computers on students' proficiency in word-processing for speed and accuracy of 60 wpm in COE, North-West Zone, Nigeria</b> | <b>SA</b> | <b>A</b> | <b>SD</b> | <b>Disagree</b> |
| <b>S/N</b>       |  |           |          |           |                 |
| 6                | Some of the computers in the laboratories are not functional.  |           |          |           |                 |
| 7                | Most of the computers in the laboratories have technical faults.   |           |          |           |                 |
| 8                | All the computers in the laboratories are virus infected.  |           |          |           |                 |
| 9                | Some of the computers in the laboratories are obsolete.  |           |          |           |                 |
| 10               | All the computers in the laboratories are functioning.   |           |          |           |                 |
| 11               | Less than half of the computers in the laboratories are not functional.  |           |          |           |                 |

| SECTION D<br>S/N | Influence of accessibility of computers on students' proficiency in word-processing for speed and accuracy of 60 wpm in COE, North-West Zone, Nigeria | Strongly Agree | Agree | Disagree | Strongly Disagree |
|------------------|---|----------------|-------|----------|-------------------|
| 12               | Students do not access computer resources in learning because the available ones are unreliable due to lack of regular servicing                      |                |       |          |                   |
| 13               | Computer laboratory can accommodate more than 30 students at once for practical.  |                |       |          |                   |
| 14               | Usage of word processing in the laboratory is not necessary in learning.  |                |       |          |                   |
| 15               | Students do not utilize computer laboratories in learning due to the fact that they have no access to functioning computers in the laboratories.      |                |       |          |                   |
| 16               | Students do not access computer laboratories because there are no technical support staff.  |                |       |          |                   |
| 17               | The available computer resources are not used regularly due to lack of electric power supply.   |                |       |          |                   |

| <b>SECTION E</b><br><b>S/N</b> | <b>Influence of utilization of computers on students' proficiency in word-processing for speed and accuracy of 60 wpm in COE, North-West Zone, Nigeria</b> | <b>Strongly Agree</b> | <b>Agree</b> | <b>Disagree</b> | <b>Strongly Disagree</b> |
|--------------------------------|--|-----------------------|--------------|-----------------|--------------------------|
| 18                             | I do not feel competent with the use of computer word-processing in learning.  |                       |              |                 |                          |
| 19                             | I feel inadequate using ICT resources in learning.   |                       |              |                 |                          |
| 20                             | Students need further trainings to be able to utilize computer laboratories word-processing skills.  |                       |              |                 |                          |
| 21                             | Most students do not know how to operate some of the available computers in word processing laboratories.  |                       |              |                 |                          |
| 22                             | I feel incompetent when lectures are presented with overhead projector.  |                       |              |                 |                          |
| 23                             | I am proficient in word processing application.  |                       |              |                 |                          |
| 24                             | I have no knowledge of word-processing.  |                       |              |                 |                          |

#### APPENDIX IV

##### Checklist on Availability of Computer Laboratories in Business Education in Colleges of Education, North-West Zone, Nigeria

| S/N | College of Education | NCCE Benchmark | No. Required | No. Available | %      | Remark    |
|-----|----------------------|----------------|--------------|---------------|--------|-----------|
| 1   | Bichi                | 1.3            | 10           | 50            | 500    | Available |
| 2   | Gusau                | 1.3            | 9            | 50            | 555    | Available |
| 3   | Kano                 | 1.3            | 13           | 42            | 323.07 | Available |
| 4   | Katsina              | 1.3            | 10           | 40            | 400    | Available |
| 5   | Zaria                | 1.3            | 14           | 50            | 357.11 | Available |

| S/N | Colleges of Education | NCCE Benchmark | No. Required | No. Available | %      | Remark    |
|-----|-----------------------|----------------|--------------|---------------|--------|-----------|
| 1   | GidanWaya             | 1.3            | 12           | 42            | 350    | Available |
| 2   | Jigawa                | 1.3            | 10           | 35            | 350    | Available |
| 3   | Sa'adatuRimi          | 1.3            | 12           | 40            | 333.33 | Available |
| 4   | ShehuShagari          | 1.3            | 10           | 30            | 300    | Available |

**Source:** NCCE Digest 2009  
Record Office of Each School, 2013

**Area of specialization**

|       |                        | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------------------|-----------|---------|---------------|--------------------|
| Valid | Accounting education   | 25        | 9.0     | 9.0           | 9.0                |
|       | Secretarial education  | 216       | 77.7    | 77.7          | 86.7               |
|       | Distributive education | 37        | 13.3    | 13.3          | 100.0              |
|       | Total                  | 278       | 100.0   | 100.0         |                    |

**Number of practical periods per week**

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Less than 12 | 247       | 88.8    | 88.8          | 88.8               |
|       | 13-20        | 23        | 8.3     | 8.3           | 97.1               |
|       | 21-30        | 8         | 2.9     | 2.9           | 100.0              |
|       | Total        | 278       | 100.0   | 100.0         |                    |

**We have computer laboratories in our school or in our college**

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 184       | 66.2    | 66.2          | 66.2               |
|       | Agree          | 94        | 33.8    | 33.8          | 100.0              |
|       | Total          | 278       | 100.0   | 100.0         |                    |

**We have adequate number of computers in our school**

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 14        | 5.0     | 5.0           | 5.0                |
|       | Agree             | 78        | 28.1    | 28.1          | 33.1               |
|       | Disagree          | 142       | 51.1    | 51.1          | 84.2               |
|       | Strongly disagree | 44        | 15.8    | 15.8          | 100.0              |
|       | Total             | 278       | 100.0   | 100.0         |                    |

**The computers in our schools are not adequate**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 90        | 32.4    | 32.4          | 32.4               |
| Agree             | 152       | 54.7    | 54.7          | 87.1               |
| Valid Disagree    | 28        | 10.1    | 10.1          | 97.1               |
| Strongly disagree | 8         | 2.9     | 2.9           | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**The students are always more than the computers in the computer laboratory**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 66        | 23.7    | 23.7          | 23.7               |
| Agree             | 102       | 36.7    | 36.7          | 60.4               |
| Valid Disagree    | 78        | 28.1    | 28.1          | 88.5               |
| Strongly disagree | 32        | 11.5    | 11.5          | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**Computers in the laboratories are the same with the number of secretarial students**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 22        | 7.9     | 7.9           | 7.9                |
| Agree             | 56        | 20.1    | 20.1          | 28.1               |
| Valid Disagree    | 162       | 58.3    | 58.3          | 86.3               |
| Strongly disagree | 38        | 13.7    | 13.7          | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**Some of the computers in the laboratories are not functional**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 112       | 40.3    | 40.3          | 40.3               |
| Agree             | 127       | 45.7    | 45.7          | 86.0               |
| Valid Disagree    | 27        | 9.7     | 9.7           | 95.7               |
| Strongly disagree | 12        | 4.3     | 4.3           | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**Most of the computers in the laboratorie have technical faults**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 32        | 11.5    | 11.5          | 11.5               |
| Agree             | 148       | 53.2    | 53.2          | 64.7               |
| Valid Disagree    | 56        | 20.1    | 20.1          | 84.9               |
| Strongly disagree | 42        | 15.1    | 15.1          | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**All the computers in the laboratories are virus infected**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 62        | 22.3    | 22.3          | 22.3               |
| Agree             | 76        | 27.3    | 27.3          | 49.6               |
| Valid Disagree    | 82        | 29.5    | 29.5          | 79.1               |
| Strongly disagree | 58        | 20.9    | 20.9          | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**Some of the computers in the laboratories are obsolete**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 56        | 20.1    | 20.1          | 20.1               |
| Agree                | 108       | 38.8    | 38.8          | 59.0               |
| Disagree             | 62        | 22.3    | 22.3          | 81.3               |
| Strongly disagree    | 52        | 18.7    | 18.7          | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**All the computers in the laboratories are functioning**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 37        | 13.3    | 13.3          | 13.3               |
| Agree                | 121       | 43.5    | 43.5          | 56.8               |
| Disagree             | 46        | 16.5    | 16.5          | 73.4               |
| Strongly disagree    | 74        | 26.6    | 26.6          | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**Students do not access computers in the lab for learning because the available one are unreliable due to lack of regular servicing**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 87        | 31.3    | 31.3          | 31.3               |
| Agree                | 147       | 52.9    | 52.9          | 84.2               |
| Disagree             | 33        | 11.9    | 11.9          | 96.0               |
| Strongly disagree    | 11        | 4.0     | 4.0           | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**Computer laboratory can accomodate more than 30 students at once for practical**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 63        | 22.7    | 22.7          | 22.7               |
| Agree                | 182       | 65.5    | 65.5          | 88.1               |
| Disagree             | 31        | 11.2    | 11.2          | 99.3               |
| Strongly disagree    | 2         | .7      | .7            | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**Usage of word processing in the laboratory is not necessary in learning**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 14        | 5.0     | 5.0           | 5.0                |
| Agree                | 22        | 7.9     | 7.9           | 12.9               |
| Disagree             | 191       | 68.7    | 68.7          | 81.7               |
| Strongly disagree    | 51        | 18.3    | 18.3          | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**Students do not utilize computer in the laboratories for learning due to the fact that they have no access to functioning computers in the lab**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 78        | 28.1    | 28.1          | 28.1               |
| Agree                | 107       | 38.5    | 38.5          | 66.5               |
| Disagree             | 66        | 23.7    | 23.7          | 90.3               |
| Strongly disagree    | 27        | 9.7     | 9.7           | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**Students do not access computer laboratories because there are no technical support staff**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 82        | 29.5    | 29.5          | 29.5               |
| Agree             | 176       | 63.3    | 63.3          | 92.8               |
| Valid Disagree    | 12        | 4.3     | 4.3           | 97.1               |
| Strongly disagree | 8         | 2.9     | 2.9           | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**The available computers are not used regularly due to lack of electric power supply**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 118       | 42.4    | 42.4          | 42.4               |
| Agree             | 132       | 47.5    | 47.5          | 89.9               |
| Valid Disagree    | 18        | 6.5     | 6.5           | 96.4               |
| Strongly disagree | 10        | 3.6     | 3.6           | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**I do not feel competent with the use of computer word-processing in learning**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 78        | 28.1    | 28.1          | 28.1               |
| Agree             | 169       | 60.8    | 60.8          | 88.8               |
| Valid Disagree    | 24        | 8.6     | 8.6           | 97.5               |
| Strongly disagree | 7         | 2.5     | 2.5           | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**Students need further trainings to be able to utilize computer laboratories word-  
processing skills**

|                   | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------------------|-----------|---------|---------------|-----------------------|
| Strongly agree    | 130       | 46.8    | 46.8          | 46.8                  |
| Agree             | 112       | 40.3    | 40.3          | 87.1                  |
| Valid Disagree    | 27        | 9.7     | 9.7           | 96.8                  |
| Strongly disagree | 9         | 3.2     | 3.2           | 100.0                 |
| Total             | 278       | 100.0   | 100.0         |                       |

**Most students do not know how to operate some of the available computers in word  
processing laboratories**

|                   | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------------------|-----------|---------|---------------|-----------------------|
| Strongly agree    | 96        | 34.5    | 34.5          | 34.5                  |
| Agree             | 120       | 43.2    | 43.2          | 77.7                  |
| Valid Disagree    | 47        | 16.9    | 16.9          | 94.6                  |
| Strongly disagree | 15        | 5.4     | 5.4           | 100.0                 |
| Total             | 278       | 100.0   | 100.0         |                       |

**I do not feel comfortable when lectures are presented with overhead projector**

|                   | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------------------|-----------|---------|---------------|-----------------------|
| Strongly agree    | 18        | 6.5     | 6.5           | 6.5                   |
| Agree             | 42        | 15.1    | 15.1          | 21.6                  |
| Valid Disagree    | 140       | 50.4    | 50.4          | 71.9                  |
| Strongly disagree | 78        | 28.1    | 28.1          | 100.0                 |
| Total             | 278       | 100.0   | 100.0         |                       |

**I am proficient in word processing application**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 32        | 11.5    | 11.5          | 11.5               |
| Agree                | 68        | 24.5    | 24.5          | 36.0               |
| Disagree             | 98        | 35.3    | 35.3          | 71.2               |
| Strongly disagree    | 80        | 28.8    | 28.8          | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**Utilization of computer and its resources can make teaching more captivating,  
interesting and enjoyable**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 82        | 29.5    | 29.5          | 29.5               |
| Agree                | 174       | 62.6    | 62.6          | 92.1               |
| Disagree             | 18        | 6.5     | 6.5           | 98.6               |
| Strongly disagree    | 4         | 1.4     | 1.4           | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**Learning could be highly explicit when lecturers utilize word-processing skills  
acquisition in teaching**

|                      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|-----------|---------|---------------|--------------------|
| Valid Strongly agree | 102       | 36.7    | 36.7          | 36.7               |
| Agree                | 165       | 59.4    | 59.4          | 96.0               |
| Disagree             | 8         | 2.9     | 2.9           | 98.9               |
| Strongly disagree    | 3         | 1.1     | 1.1           | 100.0              |
| Total                | 278       | 100.0   | 100.0         |                    |

**Competency of lecturers' word-processing skills acquisition may not improve the rate  
of assimilation and retention**

|                   | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------------------|-----------|---------|---------------|-----------------------|
| Strongly agree    | 37        | 13.3    | 13.3          | 13.3                  |
| Agree             | 199       | 71.6    | 71.6          | 84.9                  |
| Valid Disagree    | 32        | 11.5    | 11.5          | 96.4                  |
| Strongly disagree | 10        | 3.6     | 3.6           | 100.0                 |
| Total             | 278       | 100.0   | 100.0         |                       |

**students are not enthusiastic about learning with word-processing skills**

|                   | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------------------|-----------|---------|---------------|-----------------------|
| Strongly agree    | 30        | 10.8    | 10.8          | 10.8                  |
| Agree             | 56        | 20.1    | 20.1          | 30.9                  |
| Valid Disagree    | 104       | 37.4    | 37.4          | 68.3                  |
| Strongly disagree | 88        | 31.7    | 31.7          | 100.0                 |
| Total             | 278       | 100.0   | 100.0         |                       |

**Lecturers competency in word-processing skills acquisition might not improve  
students academic achievement**

|                   | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------------------|-----------|---------|---------------|-----------------------|
| Strongly agree    | 11        | 4.0     | 4.0           | 4.0                   |
| Agree             | 25        | 9.0     | 9.0           | 12.9                  |
| Valid Disagree    | 156       | 56.1    | 56.1          | 69.1                  |
| Strongly disagree | 86        | 30.9    | 30.9          | 100.0                 |
| Total             | 278       | 100.0   | 100.0         |                       |

**Lecturers' competency in word-processing skills acquisition could make learning more tedious**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 42        | 15.1    | 15.1          | 15.1               |
| Agree             | 62        | 22.3    | 22.3          | 37.4               |
| Valid Disagree    | 98        | 35.3    | 35.3          | 72.7               |
| Strongly disagree | 76        | 27.3    | 27.3          | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |

**Lecturers' competency in word-processing skills acquisition make learning difficult**

|                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------|-----------|---------|---------------|--------------------|
| Strongly agree    | 13        | 4.7     | 4.7           | 4.7                |
| Agree             | 69        | 24.8    | 24.8          | 29.5               |
| Valid Disagree    | 114       | 41.0    | 41.0          | 70.5               |
| Strongly disagree | 82        | 29.5    | 29.5          | 100.0              |
| Total             | 278       | 100.0   | 100.0         |                    |