

**COMPARATIVE STUDY OF TOUCH AND SIGHT METHODS OF  
TEACHING KEYBOARDING SKILLS TO BUSINESS EDUCATION  
STUDENTS IN COLLEGES OF EDUCATION IN KADUNA AND KANO  
STATES**

**BY**

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## DECLARATION

I, Yohanna Yock Nyam, declare that this Thesis titled “Comparative Study of Touch and Sight Methods of Teaching Keyboarding Skills to Business Education Students in Colleges of Education in Kaduna and Kano States” has been written by me. It is the report of my own research work under the supervision of Prof. M.M. Aliyu and Dr. A.A. Udoh. It has not been presented for the award of any higher degree. The information derived from the reviewed literature have been dully acknowledged in the text and a list of references provided. No part of this Thesis was previously presented for another degree in any university.

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## CERTIFICATION

This Thesis entitled “Comparative Study of Touch and Sight Methods of Teaching Keyboarding Skills to Business Education Students in Colleges of Education in Kaduna and Kano States” by Yohanna Yock Nyam has been read and it is found to have met the regulations governing the award of the degree of Master of Education (Business Education) of Ahmadu Bello University, Zaria, Nigeria and is approved for its contributions to knowledge and literary presentation.

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## **DEDICATION**

This Thesis entitled “Comparative Study of Touch and Sight Methods of Teaching Keyboarding Skills to Business Education Students in Colleges of Education in Kano and Kaduna States” is dedicated to Almighty God.

## ACKNOWLEDGEMENTS

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## ABSTRACT

*The Comparative Study of Touch and Sight Methods of Teaching Keyboarding Skills to Business Education Students in Colleges of Education in Kaduna and Kano States was carried out in order to find out the better teaching method for imparting keyboarding skills and ensuring keyboarding skills development among Business Education students in Colleges of Education in Kaduna and Kano States. The specific objectives were to compare the keyboarding speed, the mean score of keyboarding accuracy and also to determine if there is any difference in keyboarding speed and accuracy of College of Education students taught using sight and touch methods of teaching keyboarding skills. Four research questions and four Null hypotheses in line with the research objectives were formulated. One of them includes; to what extent does the keyboarding speed of College of Education students taught using sight method differ from those taught using touch method. One of the Null hypotheses also included: there is no significant difference between the mean score in typewriting speed of students taught using sight and touch methods of teaching keyboarding skills. Equating experimental design was used on the two methods with a population of 739 students and a sample size of 120 from the four Colleges of Education; two from Kaduna state and two from Kano state. The analysis showed that the touch groups were better in keyboarding speed with a difference of 8.03 above the sight group. The touch group also performed better than the sight group with a mean score difference of 10.92. Also, females students performed slightly better in typewriting speed than their male counterparts with mean score difference of 5.34 for sight and 2.00 for touch methods. It was concluded that students performed better under the touch keyboarding method than in the sight keyboarding method. The study recommends among others that typewriting teachers should use more of touch method in teaching speed and accuracy skills in keyboarding than sight method.*

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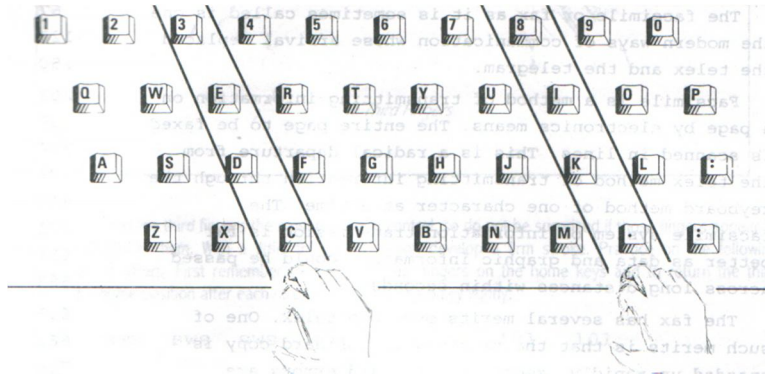
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## DEFINITION OF TERMS

**The Keyboard:** A keyboard is a device for typing data/information at typewriter-like instrument that includes alphabetic, numeric and symbolic/function key. The letters have A-Z keys displayed not in the alphabetic order while the numbers have 0-9 keys arranged from 1-0.



Source: New Integrated Typewriting for Nigerian Schools

**Typing Word:** A typing word equals five (5) typing characters or spaces. It is, therefore, measured in characters and/or spaces and not in the length of an ordinary word.

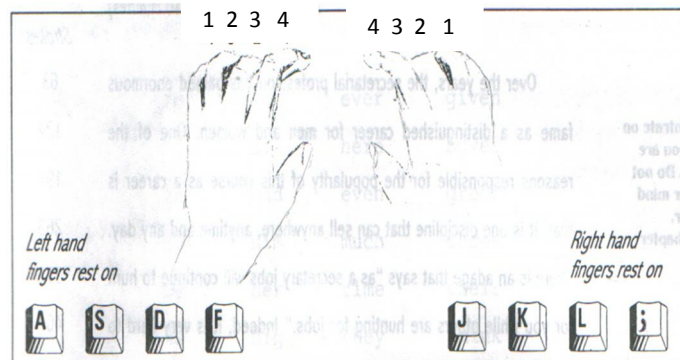
**Improper Techniques:** Improper techniques are those keyboarding habits that are likely to result in a low typing speed improvement. Such habits are prone to cause physical fatigue over time, repetitive stress syndrome, and neck or eye strain. E.g. bending towards the machine with scattered legs, repetitive eye movement for manuscript to keyboard to and from mixed keyboard fingering, e.t.c.

**Proper Technique:** A method of keyboarding which minimizes the risk of physical fatigues to the person keyboarding and open path to lifelong improvement in keying speed and accuracy through practice. E.g. sitting straight on the typing chair with legs flat on the floor, eyes

away from the keyboard and concentrated on the manuscript, typing fingers resting on home keys ASDF;LKJ.

**Psychomotor Skill:** A psychomotor skill is the learning and performance that involve cognitive as well as finely co-ordinate muscular movements.

**Home Keys/ Home Row:** The home keys or home row is the middle row of keys on the universal or QWERTY keyboard. Eight keys in this row make up the home keys and provide a base position for the fingers in touch typing method of keyboarding. The letters are ASDF ;LKJ for the left and right hands, respectively, with the thumb positioned on the space.



Source: New Integrated Typewriting for Nigerian Schools

**Guide Keys:** These are “a”, and “;” on the left and right of the home keys. The first fingers (1) as shown above are trained to be placed on them and all other three fingers of the home row fall automatically.

**QWERTY version:** This is the keyboard version that provides the finger-base keys called the ‘home keys (asdf ;lkj) in the alphabets’ mid row of the English keyboard. The ‘Q,W,E,R,T, and Y’ called the QWERTY keys are at the first alphabets keys row.

**Sitting Posture:** This is a position of a keyboarder sitting straight with two legs flat on the floor, one slightly ahead of the other. The adjustable chair is adjusted to hold the back straight to avoid the fatigue of the neck and the spinal cord. For example

- Sit in an erect position
- Keep your elbows loose near your sides.
- Keep your shoulder down, with the chest forward.
- Hang your palms over the keyboard; fingers bent.
- Keep eye on copy and not on the machine. Start to learn the non-visual aid-system.



Source: New Integrated Typewriting for Nigerian Schools

**Industries:** Refer to fields/areas of professional practice after graduation.

## **LIST OF ABBREVIATIONS**

1. CMS - Church Missionary Society
2. COE - College of Education
3. FCE - Federal College of Education
4. HND - Higher National Diploma
5. KST - Keyboarding Skills Test
6. M/F - Male or Female
7. NASDVE - National Association of State Directors of Vocational  
Education
8. NBTE - National Board for Technical Education
9. N.C.C.E - National Commission of Colleges of Education
10. N.C.E. - National Certificate in Education
11. NUC - National Universities Commission
12. SD - Standard Deviation
13. SE - Standard Error
14. SR - Stimulus Response
15. SSCE - Senior School Certificate Examination
16. U.S.A. - United States of America
17. VTE - Vocational and Technical Education



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

Keyboarding is as old as the history of typewriting itself. Today in our society, keyboarding is in evidence in almost every aspect of our lives. We are constantly experiencing the need of keyboard training in our educational system for its sustainable development. In line with Nigerian Educational Policy, Oyeyiola (2006) and Daudawa (2006) opined that if education is to take a new and dynamic significance, it must be aimed at training the child for some specific skills”. The challenges then to business teachers in preparing Nigerian Certificate in Education (N.C.E) students and workers for entry into universities and/or work places are to indicate which typing method is more desirable for work habits and attitudes as well as for high operative skills. The touch or sight keyboarding are the two main methods used in the teaching of keyboarding skills.

Touch Keyboarding is a method whereby the typist keys in the information (data) with eyes off the keyboard and fixed on the manuscript (Hallows, 2002). Technically defined, Hallows (2002) said, “touch typing or touch keyboarding is the keeping of both hands in the home row position

at the keyboard and reaching with the proper home row finger to press all other appropriate keys”.

Sight Keyboarding is a method of typewriting sometimes called ‘Hunt-and-peck’. Sight or hunt-and-peck keyboarding is a method whereby a typist depends with the eyes on the keyboard to ‘hunt’ for the key to strike. It is an inexact and inefficient method of keying which learners at the initial stage rely on visually locating the keys, and usually, only employs one or two fingers of each hand to strike the keys. This method though unprofessional has come to stay in the hands of keyboard users. The main difference in these two methods (touch and sight) is the non-watching of the keyboard while typing and the sharing of the eyes moving from the material for typing to the keyboard and vis-à-vis.

According to Dienne (1996) “teaching is a process of making things known to people”. The teacher is supposed to be the initiator of the process of teaching (practice makes perfect) while the student (the target in the teaching process) is a person with the inherent personality needed for change. Sambo (2008) pointed, “the educationist must choose from among the knowledge available, what must be taught... and with which method.” Sambo added, “Modern knowledge requires modern methods”. Otobo and Makeri (2002) posited that there is no gain-saying that the use of keyboard is

presently an indispensable aspect of business education, as typing is done almost in every average household.

The New National Policy on Education (2004) shifted emphasis from Liberal Arts to Vocational/Technical Education. Business Education is part of Vocational Education of which typewriting is an integral part. The response and the emphasis on typewriting can be clearly seen in the objectives of Business Education as contained in the goals of the National Commission for Colleges of Education (N.C.C.E.) at the N.C.E. level as entrenched in the National blue prints were to, produce competent teachers of the business education discipline for primary and junior secondary school classes, and to produce technical knowledge and vocational skills. Essien (2006) defined the computer as “an electronic device that accepts data, stores it, processes it and produces an output at a very tremendous speed”. Essien added further “the characteristic of computer as a keyboarding device include the provision of; High Speed, accuracy, versatility, and reliability”.

In the academics, teachers, students, personal computer users and business centres need keyboarding knowledge to type their works faster and efficiently. Money and time wasted could be redirected to other important things. Many personal computer users do not have the joy of owning their desk and laptops due to many problems including keyboarding skills Obe

(2010). This is found in their having to go out to business centres always for typing in order to save the time and accuracy that is never found at the end due to the same problem of poor keyboarding in the business centres. Most Colleges of Education and University students of Business Education programmes lack the background knowledge of keyboarding. The study of the two methods of teaching keyboarding aims at discovering which method will better produce good speed and accuracy to NCE students.

## **1.2 Statement of the Problem**

The poor typing production work in typewriting experienced today by students, office secretaries/typists and the road side business centres are partly attributed to students' lack of sound basic keyboarding skills. This is so, because anyone can attempt typing documents with or without a typing tutor. The good side of keyboarding in the past was the amiable approach and dexterity by secretaries and typists (Nyam, 2004). Typing production work though manual was perfect and mailable. In the past few years, the typing profession has experienced a mixture of the two methods of keyboarding (touch and sight). Based on the researcher's observations of undergraduates, that is, Business Education graduates from Colleges of Education affiliated to Ahmadu Bello University, Zaria and Secretaries/typists on keyboarding practices in some offices and Business

centres in Samaru, Zaria, it was discovered that one of the reasons why typing jobs are delayed and poorly done in many cases is because of poor keyboarding skills. Interacting with other specialists and office managers the same problem is being experienced on typing production works keyboarders.

Apart from the researcher's personal observation and interaction with other specialists, the empirical studies by other researchers have the same complaints. For instance, according to Oyedele (1991) "A student's or worker's performance is reflected in the standard of work produced – whether it is mailable or not." A mailable letter is an error free copy with no major format errors. It is believed that the teacher's insistence on mailability will compel students to recognize and correct their errors (Oyedele, 1991). Akindele (1996) also stated that being able to type documents only is meaningless task if the student is incapable of producing mailable machine output due to keyboarding deficiency. This means that document not effectively typed and on time, is of no use in business terms because time is money in business.

This deficiency could be more readily corrected if typewriting students can go back to correct basic keyboarding skills. Proceeding to teach others or typing more advanced manuscript work could have been more

enhanced. The uncertainty as to which of the two methods of keyboarding under study is more appropriate, need to be clarified. If students are not made to acquire the correct keyboarding skills at the beginning of their training, then bad habit of typewriting and poor production work will continue in offices and business centres.

NCE (Business) education students admitted into our universities for Business Education programmes need to know which teaching method is best to learn typewriting lessons from touch and sight. The speed expected of a computer cannot be fully achieved if the keyboarding skills needed for this is lacking. Time is always consumed by unnecessary delays and corrections due to poor keyboarding skill. Also, money is wasted on printing poor/unmailable jobs repeatedly. Based on personal contact with keyboarders, there is also the problem on the claim by users of either sight or touch methods as being the best in their views in most business centres. It is based on these reasons that this study was conducted to compare the two methods (sight and touch) of teaching keyboarding skills to Business Education students in Colleges of Education in Kano and Kaduna States. This is with the view to identify a better method of teaching keyboarding to the beginners.

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

The main objective of the study is to compare the touch and sight methods of teaching keyboarding skills to Business Education Students of Colleges of Education in Kaduna and Kano States with a view to compare the sight and touch typing competencies. The specific objectives are to:

1. compare the keyboarding speed of College of Education students taught using sight and touch methods of teaching keyboarding skills with a view to find a better method.
2. compare the mean score of keyboarding accuracy of College of Education students taught using sight and touch methods of teaching keyboarding skills with a view to identify a method that gives more accurate student performance after teaching..
3. determine if there is any difference in keyboarding speed between male and female of College of Education students taught using sight and touch methods of teaching keyboarding skills.
4. determine if there is any difference in keyboarding accuracy between male and female College of Education students taught using sight and touch methods of teaching keyboarding skills.

## **1.4 Research Questions**

The following research questions were formulated to guide the study:

1. To what extent does the keyboarding speed of students taught using sight method differs from those taught using touch method of teaching keyboarding skills in Colleges of Education?
2. To what extent does the mean score in keyboarding accuracy of students taught using sight method differs from those taught using touch method of teaching keyboarding skills in Colleges of Education?
3. What is the difference in the keyboarding speed between male and female students taught using sight and touch methods of teaching keyboarding skills in Colleges of Education?
4. What is the difference in the mean scores of keyboarding accuracy between male and female students taught using sight and touch methods of teaching keyboarding skills in Colleges of Education?

## **1.5 Research Hypotheses**

The following null hypotheses are formulated to further probe into the research questions:



H<sub>01</sub>: There is no significant difference between the mean score in keyboarding speed of students taught using sight teaching method and those taught using touch teaching method of keyboarding skills.

H<sub>02</sub>: There is no significant difference between the mean score of keyboarding accuracy of students taught using sight teaching method and students taught using touch teaching method of keyboarding skills.

H<sub>03</sub>: There is no significant difference between the mean score in keyboarding speed of male students taught using sight and touch methods and the female students taught using sight and touch methods of teaching keyboarding skills.

H<sub>04</sub>: There is no significant difference between the mean score in keyboarding accuracy of male students taught using sight and touch methods and female students taught using sight and touch methods of teaching keyboarding skills.

## **1.6 Significance of the Study**

The expectation of this work is that the knowledge obtained from the results will be of benefit in the following ways:

The study will be of benefit to Business Educators as the study will suggest ways that will direct them to place adequate emphasis on better method of teaching keyboarding skills for the professional enhancement of the students when employed. The professional keyboarder will use the most appropriate method to achieve correct keyboarding skills and also to distinguish between professional and road-side secretary/typist.

Equally, curriculum planners of Business Education will stand a better chance to benefit from the result of this study which will help them to adequately plan for the training of Business Education students at all levels, especially at the N.C.E I.

Other personal keyboard users like those in the offices, at home and in the business centres, cyber cafes will also benefit from this work. Teachers at secondary schools and Colleges of Education will find the work of great assistance to them by way of passing copies to the internet and making presentation in conferences and seminars. Guidance on skills acquisition will also be made easy for the counselors at all levels of our education.

## **1.7 Assumptions of the Study**

For the purpose of this study, the following assumptions were made:

1. that business Education students of Colleges of Education are matured and ready both physically and psychologically to learn and transfer to other learners the knowledge and skills of typewriting.
2. that both sight and touch groups are to be equally motivated to learn the keyboarding techniques from their pre-test performance/selection.
3. that the exposure to keyboarding techniques and the time used will be sufficient to train the students in sight and touch typing methods having come with enough stationery and selected enough good/serviceable machines for the sample of each College.

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

The study compares the effect of Touch and Sight typing methods for teaching keyboarding skills to the Business Education students in Colleges of Education. The study was delimited to four Colleges of Education in Kaduna and Kano States namely; Federal College of Education Zaria, College of Education Gidan Waya, Sa'adatu Rimi (College of Education Kumboso) and Federal College of Education, Kano (Federal and State Co-education schools). They were selected because Business Education training starts from there as a foundation.

Secondly, the study was delimited to Colleges of Education because they are the institutions established and vested with the responsibilities of producing teachers for primary/junior secondary schools.

Thirdly, the study was delimited to two teaching methods viz Sight and Touch teaching methods as these are the two general methods in keyboarding application. Others like demonstration, direct and hunt-and-peck methods are used in a combination of two general application methods (sight and touch).

Lastly, the study was delimited to NCE I students because they are starters (beginners) with little or no previous keyboard knowledge. The NCE I students have not yet formed any keyboarding habits. Thus their initial habit can be moulded without much problem. These were selected based on the pre-test result and their SSCE statements of results.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Introduction**

This chapter reviews related literature on the comparative effects of touch and sight teaching methods to business education students in colleges of education in Kaduna and Kano States. The chapter is presented under the following sub-headings:

- 2.2 Theoretical Framework
- 2.3 Development of Vocational and Technical Education
- 2.4 General Teaching/Learning Methods
- 2.5 Concept of Teaching
- 2.6 Teaching Approaches in Business Education
- 2.7 History and Development Qwerty Keyboard
- 2.8 Business Education and Standard in Typewriting
- 2.9 Language Art in Keyboard
- 2.10 Gender Role in Keyboarding
- 2.11 Empirical Studies
- 2.12 Summary of Reviewed Literature

## 2.2 Theoretical Framework

To generate understanding on the study of touch and sight teaching methods in the teaching of keyboarding skills, the researcher has used Dreyfus theory of skill acquisition to explain the issue under consideration since keyboarding involves skill acquisition. Dreyfus proposed the model of skill acquisition in 1980 in an influential 18 page report on their research at the University of California Berkeley Operations Research Centre for the U.S.A. Air Force office of Scientific Research (Dreyfus, 1986). The main idea of this model is to provide a means of assessing and supporting progress in the development of skills on competences and to provide a definition of acceptable level for the assessment of competence or capability.

The model originally came with 5 stages; Novice, advanced beginner, competence, proficiency and expertise. Competence develops when the individual develops organizing principles to quickly access the particular rules that are relevant to the specific task at hand; hence, competence is characterized by active decision making in choosing a course of action. The progression is thus from rigid adherence to rules to an intuitive mode of reasoning based on tacit knowledge. Dreyfus (1986) believed that there is a gradual process involved in order for a learner to reach the stage of expertise or knowing-how. A novice has some general ideas and in the process of

learning the rules, such as the movement of the finger on the keyboard he advances to the next stage.

In advance beginner stage, an individual's performance improves to relatively acceptable level only after the novice has had enough experience in copying the real situation. For example, after enough keyboarding practice, he starts to show unique performance. At competence stage an individual starts becoming personally involved at his best. At the level of proficiency depth of understanding in the area of discipline/practice is achieved. Fully acceptable standard achieved routinely dealing with more complex tasks. The expert stage moves an individual to authoritative knowledge of typing discipline with excellence achieved.

Dreyfus (1986) argued that this formal system of education is one of the problems with traditional method, since much of our sense of judgment and which we go through to form beliefs is not a matter of starting, and by plugging them into a formula in order to deduct conclusions may not go well. But rather it is a gradual process that involves being embodied in different ways and developing skills that would make it possible for us to deal with the world. The main idea behind Hubert and Dreyfus' skill development theories is the distinction they make between knowing-that and

knowing-how. They argue “knowing-that” is possibly because we take our knowing-how for granted.

Dreyfus had a different way of looking at the concept of learning. In the article ‘Concept of Learning and Skill Acquisition’ believed that there is a gradual process involved for an individual to go through in order for him to reach the stage of expertise or know-how. Their skill acquisition process shows that these five stages are necessary ingredients every individual has in skill decision-making as he improves his skills.

In novice stage, the individual is unlikely to be satisfactory unless closely supervised. At the beginner stage, the individual is able to achieve some steps using personal judgment but with supervision. At competent stage, the individual is able to achieve most tasks, copes with complex situations. Proficient stage; able to take full responsibility for his own work/deals with complex situations holistically. Experts stage; able to take responsibility for going beyond existing standards and creating own interpretations. Holistic grasps of complex situations, moves between intuitive and analytical approaches with ease. The theory of skill acquisition in these stages is very much in line with the acquisition of keyboarding skills treated in this work.

There are theories that have explained the origin of gender identity e.g



- Gender schema theory
- The social learning theory
- Social structure/culture theory
- Socio biology and functionalist theory
- Cognitive development theory.

The last theory (Cognitive Development) which suggests that below the age of 3, children confuse gender classification believing that gender classification can be changed arbitrarily. According to this theory, once children categorize themselves as either female or male, they will use this self categorization to figure out how to behave. In response to positive reinforcement, they will attach high value to gender – appropriate behaviours than gender inappropriate behaviours which receive negative reinforcement (Ibrahim, 2007). For sometimes now, the society has considered typewriting work as a feminine Job, making a lot of males to see it as such.

### **2.3 Development of Vocational/ Technical Education**

The first teacher education training centre in Nigeria was established in 1859 at Abeokuta. Adidu (1991) submitted that the church missionary society (CMS) opened its first teacher training centre in 1859 at Abeokuta,

moved to Lagos in 1867 and finally settled down at Oyo in 1896 to where is now known as St. Andrews College, Oyo. They taught Bible knowledge, English, History, Geography and Book keeping in their first curriculum. “The colonial officers in 1896 later introduced elements of business education into the curriculum because of the need for secretarial and clerical assistants. These business education subjects included typewriting, shorthand and economics. Bookkeeping and business arithmetic were the last to be introduced.

Akindele (1996) reported, “Vocational and Technical Education is as old as the history of education in Nigeria”. Added, that although the first secondary school established in Lagos between 1859 and 1920 had the general subjects but these could not help the colonial masters until business education (typewriting, shorthand and economics) was included. In his work, Gana (1986) had earlier reported that the Typewriting, shorthand and some communication subjects taught, qualified people for employment in the various areas for which they were trained. Gana (1986) further revealed that even as far back as early 1950s and late 1960s, a sharp demand for secretarial and office administrative staff had started. This is running down till today. In support of Gana (1986), Adidu (1991) submits that private business institutions contributed in no small way to the commencement of

business education programmes in Nigeria. In line with Gana (1986), Abegunde (1990) states that the components of a business education programme in Nigeria, generally comprise typewriting, shorthand, accounting and cognate subjects like commerce and economics. The Federal Government of Nigeria (2004), recognizes that vocational and technical education form the basis of the nation's technological development. Vocational and technical education programmes must be realistic in terms of employment opportunities and the skill levels attained by students should be sufficient to assure their success in competitive employment market.

This is why the National Policy on Education (2004) states that the acquisition of appropriate skills, abilities and competencies both mental and physical as equipment for the individual to live in and contribute to the development of his society. The National Policy also specifically states that the Federal Government recognizes vocational and technical education as forming the basis of the nation's technological development. Bako (2006) observes that for a nation to develop emphasis must be placed on education.

Bako further stated:

*It is education which sets a value on the human factor in development and which makes man capable of shaping his history. A country will never be developed unless education is developed. If you wish to replace the idea of development, that is the advancement of man which will enable them to decide their own*

*destinies, then you must not do without education. It is through better education that the maximum use can be made of human resources in which the developing countries are so rich.*

When a country is blessed with human resource, the next thing it needs is education for sustainable development, in fact technical education. The United States National Association of State Directors of Vocational and Technical Education, categorically stated that the process of developing work skills appropriate for today's technological society requires Vocational and Technical Education (VTE) put together with academics (NASDVE, 1988). This means that every person, no matter the profession needs to acquire some basic business skills especially the keyboarding skills. Therefore, because Business Education is part of Vocational and Technical Education which makes it possible for individual to be self employed, Oladebo (1987), opined that vocational and technical education plays a vital role in greater promotion of employment in Nigeria's economic revival. Oladebo added.

*Business enterprises both private and public are the engine that powers Nigeria's economy and, education is one of the primary fuels of that engine. There is general contention that our society and our free enterprise system can survive only with an educated, economically skilled literate population..... The vocational skills acquired by graduates are saleable on the labour market either by employing themselves or be employed.*

Here, we find man sustaining himself when he is vocationally educated. Proper knowledge of the correct keyboarding is a necessity. Keyboarding/typewriting skills are those vocational skills that are saleable and can make an individual self reliant.

## **2.4 General Teaching/Learning Methods**

In education, teaching and learning are always linked with learning methodology. In order to give direction to this work the researcher focused on the following sub-headings:

### **2.4.1 Concept of Learning**

The animal that has most to learn is the human animal. Consequently Harold (2003) states that “the maturation period for human is longer than that required for any other species”. This implies that nothing is taught unless it is learned. A student who stays on the typewriter keyboard for years without knowing how to type proficiently cannot claim to have been taught. Harold (2003) defined learning as a piece of knowledge that has been acquired and consolidated, that brings about a change in an organism. Learning theories have always support this. They fall into two major groups. Stimulus – Response (SR) theories and cognitive theories. SR theories are concerned with learning by connecting.

An event makes an impression on the senses and evokes an impulse to respond to the stimulus of that event. Without learning, the stimulus and response are unconditioned (i.e natural) when response is modified by learning, the response had become conditioned (i.e learned). This is the opinion of Stimulus Response (SR) theorists like, Watson (1945) and Skinner (1968). On the other hand Bruner (1960) form the cognitive theorist. Their emphasis is on the role of the brain in controlling learning. The brain is the intermediary between what happens and how we respond to it. The brain – hand coordination in keyboarding also attests to this.

One of the earliest developers of learning situations in operant responses and re-enforcing stimuli that led to the development of behavior modification in the classroom said “teachers should be trained to wait for their students to emit appropriate responses and then to reinforce these responses speedily and consistently”. His work that has been credited to the creating of revolution in technology says the teaching machine, or programmed instruction that is seen as a threat to the jobs of business teachers and secretary alike is only an aid and not a substitute. Bako (2006) assured educators that the children trained with this device will not become mechanized little robots but instead will be more likely to reach their intellectual potential. This is the likely case with students who depend on

computer training programme for the learning of the keyboard through computer or programmed teaching. But as to which method is best, the research work will find out. In every teaching learning method therefore, some planned teaching/learning principles need to be observed.

#### **2.4.2 Teaching / learning Principles**

Teaching is a serious business but complex. It is complex, because we need to change behavior in terms of cognitive, affective and psychomotor domains. (Mohammed, 2004). It is the ability of the teacher to prepare and plan adequately which will ensure the process of learning on the part of the learners. Mohammed (2004) went further to propose the following principles in our teaching learning effort; Clear objectives; Previous experience; Pupils readiness; Individual difference; Teaching should be systematic; Usage of a well prepared lesson plan; Motivation; Opportunity for active learning and Usage of variety of methods.

Each of these principles is further explained in the subsequent paragraphs.

**Clear Objectives:** In this context refers to teaching guidelines to the teacher while preparing for the goals and objectives to achieve at the end of the lesson

**Previous experience:-** The experience on which a teacher builds upon. Every child has some experiences before going to school or undertaking a course of study in the tertiary institution.

**Pupils readiness:-** This ensures that pupils are physically, mentally and emotionally stable before teaching and learning process.

**Individual Difference:-** This shows that individuals are different from one another in many ways. These differences must be realized by the teacher. They should recognize these differences and use variety of methods and materials to teach.

**Teaching should be systematic:-** This means that teaching should proceed from known to unknown, simple to complex, concrete to abstract and general to specific

**Usage of a well prepared lesson plan:-** This is the teachers personal lesson plan which should take into consideration his knowledge of the pupils, the subject matter and the teaching environment and / or material

**Motivation:-** Means teachers knowledge of the needs and interests of his pupils and the positive encouragement needed to reinforce the efforts.

**Opportunity for Active learning:-** This is the student active participation during the teaching and learning process.



**Usage of variety of Methods:-** When planning his lesson the teacher should think of the use of different methods for different parts of it. When these are done, setting standards for teaching effectively becomes easy.

### **2.4.3 Measuring Teaching Effectiveness**

In measuring teaching effectiveness, a standard setting of achievement is the first step. For example in typewriting, how many words per minute is a student's speed at the beginning of a semester and what is the expected speed / minute by the end of the semester?. Walkin (1991) defines a standard as "a specification by which the qualities required of something may be tested or compared. He continued that standards specify instinct performance goals, when assessing competence. Okpala, Onocha and Oyedeji (1993) asserts "a good teacher is one who prepares lesson notes which contains objectives, contents, methods and activities". For change to occur, therefore, it demands that a teacher exposes his students to content and activities using appropriate methods. Pitfield (1977) views that, training provides skills, knowledge and attitudes necessary to undertake required job efficiently.

Efficiency is most needed in the teaching of keyboarding in order to have mailable work. Pitfield added that the word "need" implies that something is lacking, while "teaching" implies that needs can be supplied by

systematic training method. Pitfield concludes that “teaching need” exists when the application of systematic method will serve to overcome a particular weakness. Daudawa (2006) states that, the justification of teaching method is the first in the educational process. Just like in every systematic process, he added, its success or failure will correspondingly affect subsequent educational developmental stages. It is needful to stress therefore, that the poor performance being experienced in typewriting presently could be traced back to the method of the initial keyboard training.

With the increase role of keyboarding in business activities and advancement in technology, the need for business education students to become more and more perfect on the keyboard also becomes glaring. Speed is needed in almost every business activity today – unlike the pre industrial revolution period. Aliyu (2006) comments that “before, the revolution clerks worked eleven hours a day, provided their own heating facilities during cold weather, cleaned their own offices and employers did not give much thought in improving workers tools. All records were handwritten and it therefore meant that clerks had to put in extra care and time to ensure that such records were preserved in eligible handwriting.”

At this age, a typing production that is not mailable is not necessary. This is so because we are at electronic age when we can quickly type and

edit our work to be perfect. Similarly, a teaching method that is not able to put students at a level that will be better than the former handwritten work is not required. The quality of the student work is closely related to the quality of his/her teacher and the quality of the teacher is also connected to his method of teaching. Federal Government of Nigeria (2004), emphasizes, “no education system can rise above the quality of its teacher”. Again, it was stated in Federal Government of Nigeria (2004) that teacher education should be carried out to:

- produce highly motivated conscientious and efficient classroom teachers for all levels of our educational system;
- encourage further spirit of enquiry and creativity in teachers;
- help teachers to fit into the social life of the community and society at large, and to enhance their commitment to national objectives.
- provide teachers with intellectual and professional backgrounds adequate for their assignment, and to make them adaptable to any changing situations, not only in the life of their country but in the wider world;
- enhance teachers commitment to the teaching profession.

## 2.5 Concept of Teaching

Teaching as a process of making things known to people has been a subject of debate sociologically, philosophically, scientifically, psychologically and historically. The inconclusive nature of the debate is probably informed by the changeable variables in the teaching process. The teacher who is supposed to be the initiator of the process of teaching varies according to circumstances of the process of teaching, again, the students who is generally the target in the teaching process is a distinct personality with inherent disposition to dictate what he does as a living person (Dienye 1996). Dienye further added that his (the student) motives for presenting himself for learning comes in as a vital force that can enhance or limit his ability to benefit from the teaching process. Apart from his motive he said, his inherited intelligence, interest could function to serve as a limit to what he can possibly absorb in the course of learning.

Furthermore, circumstances extraneous to both the teacher and student can also function to promote or limit the success of the teaching process. By this, it means that the teaching learning environment can be rich or poor, thereby providing the stimuli for learning or withdrawal from learning (Dienye, 1996). According to Bamisaiye (1989) the learner who is said to be educated in and for human society to develop social values and attitudes

which are important for the sustenance of the learner and the society; contends that these positive social attitudes and values help to improve man's personality and character, and these are hallmarks of the quality of being educated. Man is directed by his creator to have dominion over the universe. Education equips the learner with skills and knowledge used for his survival and for the control and manipulation of his environment.

The knowledge acquired through education, for instance helps the learner to earn a living. Education can lead to the attainment of virtuous life. Knowledge acquired through education can make an individual the master of his fate due to the afore-mentioned points. Akinpelu (1981) other philosophical assumptions about man which predisposes him to teaching for his improvement postulates as follows:

**Adaptability and educability of human beings:** Human nature is not static and unchangeable.

**Progressive perfectibility of human nature and human condition:-** Man is biologically unfinished and the first evidence of this is his prolonged period of dependency in infancy and childhood. Even when he grows Akinpelu (1981) added that he has to depend heavily upon his intelligence for self preservation against disease, pests and other environmental

conditions. At combating the ill effects of technological advancement and humanizing civilization.

**Man's natural desire for self improvement:-** Any normal human being will jump at any opportunity that reasonably promises to improve his present conditions of living.

**Education is a process conterminous with life:-** Education is needed as a preparation for life or a sort of life insurance policy but a life – long process, a continuous reconstruction and re – organization of experience which adds to the meaning of experience and increase the ability to direct the course of future experience (Dewey, 1966). Whether in an organized or random form, whether in formal or informal situation, a man continues to be intellectually curious and to learn as long as he is alive or interacting with his environment. In summary, education is a process of intellectual, moral and national development and as such intellectual, moral and national development need to be positive in order to be educative. On the role of the teacher, Dienne and Gbamanja (1990) opined that the teachers' primary task in increasing student motivation is to help the student to perceive the relationship between success and personal effort. Kosemani (1990) said, "in most Nigerian classrooms, teaching and learning have maintained the status quo, namely the stereotypes, textbook type of teaching where knowledge is

taught in a fragmented manner and devoid of a variety of methods which have problem solving base”. Thus the main objective of the teacher and indeed the entire educational system he said appears to be geared towards the production of stereotypes where the teacher struggles daily to create the educated man according to the dictates of social milieu.

## **2.6 Teaching Approaches in Business Education**

Business Education like any other discipline, is based on approaches. The teaching approaches in Business Education according to Brown (1998) are basically two dimensional namely; the teacher-centred teaching approach and the student-centred teaching approach.

### **2.6.1 The Teacher-Centred Approach**

The teacher-centred approach has its own teaching strategies. The traditional classroom has been dominated by a teacher-centred approach in teaching over the past five decades (Feden, 1994). Brown (1998) agreed that a teacher-centred teaching approach aims for knowledge transmission, which underpins current career and technical education thinking. And since learning involves the changing or conditioning of observable behavior – knowing how instead of knowing ‘why’. Lecturing, demonstration / illustration and coaching are the main teaching strategies of a teacher centred approach. Teachers in this approach take an active role in the selection,

organization and presentation of teaching materials. They are also, responsible for adjusting the pace, level and the style of presentation in a way to elicit the most effective learning outcomes.

Muijs and Reynolds (2001) supported and declared that teachers directly instruct students and provide little chance for questioning, independent thought and interaction among learners. And therefore, such direct instrument is the best way to teach rules, procedures and basic skills to younger academic achievers. Mills (1990) agreed to this and highlighted the following advantages for the lecture method:

In the lecture method it is a fact that one teacher can handle a large class alone; he can cover a great deal of ground in his own way; the lecturer may not need to use any equipment and a lecture well prepared can be repeated without much effort on the part of the teacher (lecturer).

According to Cheng (1996) and Ho, (1999) though teacher-centered teaching approach sometimes is criticized for its dictatorial style, one-way communication and suppression of individuality, which may lead to a loss of interest, however, the teacher-centred approach is still a main teaching approach in Chinese societies.



## 2.6.2 The Student Centred Approach

Group discussion, debates, simulation, games, role playing, case studies, projects, field visits co-operative learning and problem based learning are all teaching strategies that dominate the student-centred approach (Brown, 1998). According to Brown, student-centred teaching approach strategies are “process oriented, problem based, contextual, interdisciplinary and metacognitive in nature”. Doolittle and Camp, (1999) regretted that teachers place students and their social environment at the departure point of teaching and learning, and this allow students to construct knowledge by themselves and through social interactions. Yu, (1996) discovered that students deep understanding suffer if they cannot share their different insights, reasoning processes, discover weak points in reasoning, correct one another and adjust their understandings on the basis of others understanding.

Cobb and Yackel (1996) added that knowledge is the result of social interaction rather than an individual experience, also, the student-centred teaching strategies used to assist students in solving problems, focus on team work, collaboration exploration and negotiation, they added. This gives the opportunities for integration and application of knowledge and skills

acquired in the subjects taught. The six basic parts of using student-centred activities suggested by Gagnon and Callay (2001) are worthy of noting.

- Situation – framing the learning into a situation or achievable concept
- Groupings – bringing students together as in learning cells
- Bridge – surfacing of students prior knowledge before introducing new contents
- Question – asking questions in the learning process to foster in-depth learning
- Exhibition – presenting the learning publicly, bringing to view the expected end-product.
- Reflections – i.e criticizing individual and collective learning.

So and Yu (1996) suggested a balance between too many and too few teaching guidelines and said that too many guidelines would jeopardize students initiative, while too few guidelines would increase students frustration.

In addition to students and teacher centred, there are also the following approaches in the teaching of Business Education as also highlighted in the following paragraphs.

### **2.6.3 Textbook Assignment/Programmed Instruction/Workbook in Teaching Keyboarding**

Textbook assignment, programmed instruction and workbook techniques are traditional teaching approaches that are used in the teaching/learning of keyboarding. Oliver (1994) observed that textbook assignment approach is used most often by correspondence schools and classroom teachers. He said a lecturer may use textbook assignment as a re-enforcer of knowledge. Further practical assignment can also be given from the textbook for more practice in the absence of the lecturer as the case in typewriting. The programmed instruction/workbook in the modern classroom is supplementary to textbook. Usually, the author of the workbook or programmed instruction spends much time designing the materials contained in it to aid student learning (Tijjani, 2006). They are indispensable in the teaching of accounting and typewriting keyboarding. Dervey (1983) commented that the workbook can be valuable aid to teaching if:

- The teacher uses it to reinforce knowledge acquired in class
- The intention is to help students to get a thorough grasp of concepts and develop skills.
- The teacher uses the assignment in the workbook as a device to make students learn or study on their own at home.

#### **2.6.4 Touch and Sight Keyboarding**

*Touch keyboarding* is a method of professional typing where by the typist keys in the information (data) with eyes off the keyboard and fixed on the copy or manuscript. Technically defined, touch keyboarding is the keeping of both hands in the home row position at the keyboard and reaching with proper home row fingers to press all other appropriate keys (Encarta, 2009).

*Sight keyboarding* (also known as ‘hunt-and-peck’ keyboarding) on the other hand, is an unprofessional method whereby a typist depends on the keyboard to ‘hunt’ for the key to strike. It is an inexact and inefficient method of keying which relies on visually locating the keys and usually only employs one or two fingers of each hand or even one hand (Encarta, 2009).

*Keyboarding Technique.* As to how proper a typist’s or secretary’s techniques is, depends greatly on how she/he is taught. The improper techniques are those keyboarding habits that are likely to result in a low typing speed improvement. Such habits are prone to cause physical fatigue over time, repetitive stress syndrome, neck or eye strain (Sholes, 2008). The method of keyboarding which minimizes the risk of physical fatigue to the person keyboarding and open path to lifelong improvement is keying speed and accuracy through practice is the proper keyboarding technique.

### **2.6.5 Business Education Models**

A structural pattern upon which any design to be followed is made is always referred to as a model. According to Duruamaku–Dim (2002) model, generally means “an example, a copy, a form after a pattern, a specimen, a prototype, a standard, a set of plans for a structural building, structural design and a sample. Donor (2000) explained a model to mean a standard conspicuously or inconspicuously selected or drawn to serve as a guide for imitation. In Vocational Education, models of Business Education mean a standard set for business education curricular patterns or plans guiding the study of Business Education which create a learner picture of the relevance of the programme to his general and personal development. The business education curricular include methods in a scheme of work to teach and learn vocational literacy or skills acquisition, business knowledge and entrepreneurship exemplified by business subjects taught at both secondary school and higher education level such as typing, shorthand (the primary users of the keyboard).

Other business education subjects also include general business, distributive education, book-keeping and account, management and others. The curricular focused mainly on the development of knowledge, competence and skills for self employment or employment in public and

private sectors. Suggesting strategies for Business education sustainability, Okoye (2002) highlighted some training and retraining programme for teachers of business education. These programmes include workshops, in-house training and teachers' refresher courses. They are to be done with a review of Business Education programme in methods of teaching, development of teaching aids among others for vocational education to vocational students in Colleges of Education.

Okoye (2002) also suggested the following;

- Fabrication of local tools, spare parts, and equipment for learning experiences.
- Maintenance of existing tools, structure and culture.
- The need for computers which provide aids to both the teacher and student in the teaching and learning process. With this, it should be noted that it is not just enough to have all the business education training programme, computers as aids but the proper methods of teaching them is necessary. The use of computer also without the necessary proficiency in keyboarding is futile.

#### **2.6.6 Teaching Models**

A teaching model is an instructional plan aimed at directing a student to a quicker apprehension of a presented topic. Richard and Norman (1981)

in treating the models of teaching stressed the view that teaching is the management of instruction. They further said that too often people say they are teachers and yet if we are to observe their performance in the classroom we would see that they do not really teach but simply tell the pupils what to do. This teaching behavior is very common in the teaching of keyboarding of business teachers. They saw students as mechanical robots who you can direct without any personal or teaching relationship without interaction. In this work, Richard and Norman (1981) identified four (4) models as:

**The transmitter of knowledge:-** The view assumes that there exists a well – known and definite body of knowledge from which the teacher selects certain facts and concepts from which he passes to the students.

**Revealing the structure of discipline:-** teaching knowledge as a structure; a sheer intellectual excitement of discovering the reasons behind events expertise and/or dexterity. For example the logic a typist, an organist, guitar player, or even a footballer uses in his art.

**Interpersonal learning:-** Richard (1981) wrote, the exponent of the third model as the saying “the educator should instead concentrate much more attention on creating the conditions that will promote experiential learning.” Emphasis on experience rather than thinking or reading he said is the “proper pathway to knowledge” in this model.

**Synthesizing teaching model:-** A combination of the three models the transmittal, structural and interpersonal. It says that effective teaching demands a combination of the three and claims “it would be a mistake to depend exclusively on any one” (Richard, 1981).

#### **2.6.7 Keyboarding Performance in Typewriting Production**

All the approaches in the above treated paragraphs give birth to student’s performance in typewriting. Studies have revealed that the effective study of typewriting, shorthand, bookkeeping and office practice give students the foundation for real business education. But closely following this are problems which are among others, inadequate teaching materials and methods of presentation, qualified and competent manpower (Paulson 2008). As a result, some secondary school Leavers who eventually found themselves reading Business Education related courses in tertiary institution, most often encounter serious academic problems. Ayeduso (1997) for an example, assessed, the causes of poor performance in typing and shorthand among business students in Federal College of Education Kontagora observed that “over the years, the overall performance of the students in typing and shorthand has been generally poor. Ayeduso identified the inadequate entry behavior of the students as one of the causes of this poor performance. In agreement with this, this researcher added that



poor keyboarding knowledge greatly affects students' performance in typewriting and shorthand.

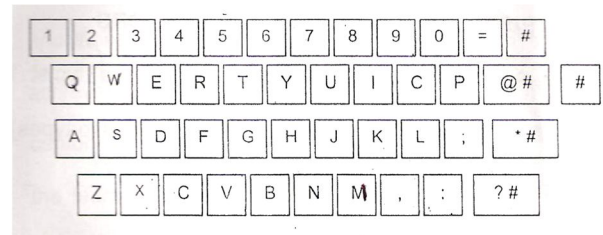
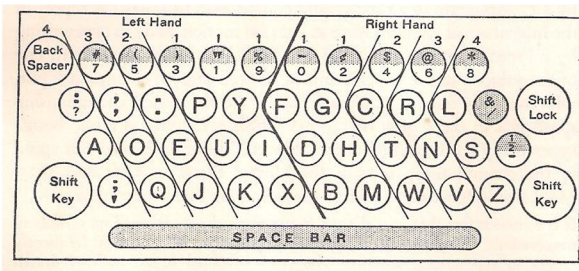
## **2.7 History and Development Qwerty Keyboard**

Unlike the skill of shorthand writing, which has remained essentially the same since the earliest of modern writers, the skill of keyboarding has changed in essential techniques and designs from the two-, four-, six-, and eight-finger methods to now nine- and ten-finger method. An early report of the International Labour Office in 1924 on motion study in typewriting contained reference to one typist who uses only one finger of each hand to type an average of 130 words per minute on a one hour typewriting from printed copy (Sholes, 2008). He added, "it is a curious fact that ..... the nine-,ten-finger method .... is based on erroneous observations, and yet enjoys the greatest popularity and is the most frequently taught in typewriting schools". Sholes continued that teachers have to admit that typist taught by the nine-finger method nearly always ends by abandoning it after leaving school. Our present day typing champions reach speeds of 110 words per minute and more. After the laborious training each pupil adopted his own method. The last keyboard to the present and popular 'qwerty' was the 'Dvorak Simplified Keyboard'. The keys and the teaching approach were arranged vertically. According to Nyam (2004), although there are a

few variations of the typewriter keyboard, each type has persistently retained its original form. Nyam added that the popular version is the QWERTY version. This version has provided the finger-base keys called the ‘home keys (asdf ;lkj) in the alphabets’ mid row of the English keyboard with the ‘QWERTY’ keys at the first alphabets keys row. Below are the two versions:

Figure 1<sup>A</sup>: Dvorak Simplified Keyboard

Figure 1<sup>B</sup>: English QWERTY Keyboard



Source: Bettman Archive

Source: IBM Electronics

The QWERTY keyboard is presently the most popularly used in all English typewriters, word processors and computers.

Prior to the government controlled education in Nigeria, vocational education was mainly handled by private commercial institutions. Nwokeji (1999) wrote, “Prior to government involvement in Business education (typewriting as an integral part) was left in the hands of private individuals who operated on commercial basis.” Komolafe (1999), therefore, supported that “business education in the country, then, was run through the

apprenticeship system”. A lot of this keyboard training was done on the manual typewriter until 1920. Joshua and Dagur (1998) reported that “Electric Typewriter” was not popularized until 1950. In 1964 another brand of typewriter....the electric memory typewriter came to Nigeria followed by the word processor in 1970. All these developments could not replace the teaching of typewriting (Mbaeze, 1998).

If computer education will be effective today, then the work of Aliyu (2001) must be taken seriously where it reveals that “there is significant relationship between background knowledge of keyboarding and students performance in computer application”. He further suggested that the students of any computer programme should be exposed to the manipulation of typewriter (keyboard) before they start the practical aspect of the computer study. This exposure is nothing other than the conscious effort on teaching methods that will enable these students grasps the proper keyboarding.

Aliyu (2001) described the advent of the electronic keyboard (typewriter) as a neutralizer of the disadvantages that were with the manual typewriter. The above work described it thus:

*The electronic typewriter is a highly sophisticated machine, which has completely changed typewriting. The carriage now remains stationary and the elements inside the machine move from left to right to produce the typescript. With a flick of a lever, a different style is produced at will within the same*

*document. There are also certain facilities to change the pitch. A special correction facility is available which enables the typist to produce perfect work*

The advent of the electric/electronic machine brought a lot of ease and simplicity to other disciplines like word processing and computer application, Aliyu (2001) added. Mbaeze (1998) wrote that the typewriting skills of listening and responding to the warning bell, tapping the space bar or back spacer in order to locate a position correct shift key positions; single or double line spacing, finger reaches, etc are transferable to word processing and computer application (literacy).

It was noted in an investigation carried out by Popham (1975) that typewriting fastened the understanding of languages, since foreign students who were refused admission into American colleges due to language deficiencies were given admission after a short English instruction with typewriting course. The study revealed that the students achieved significant gains over colleagues who studied English alone without the keyboard. In a similar study, Aliyu (2001) cited that typewriting aided slow learner to learn faster.

## **2.8 Business Education and Standard in Typewriting**

Business Education is concerned with education for job. However, business education graduate is able to establish a business centre with

typing, printing and photocopying that sustains him/her. It has been observed that there is loss in efficiency between school and Job performance. That is why the business world expects the graduate of Business Education to have an in – depth knowledge of business and its operations (Orah, 2005). Therefore, much of the teaching in business education should provide basic skills for entry into the world of work. Building achievement and motivation into teaching learning situation is all about the standard expected in this Business education with entrepreneurship education as a stimulant. Luchsinger (1985) equated achievement motivation theory with the theory of entrepreneurship saying students should seek entrepreneurship education not only for the sake of chance or motivation but for success and new ventures through one’s effort and skill achievement.

Standard is all about quality in performance. Umo (1995) suggested that the teaching and learning of vocational and technical courses should concentrate on quality performance. The role of NCE Vocational and Technical graduates in the National Development cannot be over–emphasized, especially on Technical and Business education quality and efficiency remain paramount. According to Lassa (1997);

*The making of a civil engineer or a medical doctor, or  
an accountant or an architect or a petroleum*

*engineer, or an aircraft technician, or a food technologist or indeed any other professional in the areas of vocational, science and technology begins with the elementary lessons in these areas. Therefore, it is the teacher that lays the foundation of technological development in any country. Both the quality and the pace of technology advancement of a nation depend on the quality and efficiency of the teachers.*

The foregoing citation should remind us of the necessity for sound teacher preparation for any type of education. Therefore, the teacher of business education must be professionally and qualitatively prepared for guiding students on how to cope with higher jobs. Correct keyboarding is all about enhancement of skills in and outside the classroom. According to Aliyu (2001) Business Education should continually strive to make the business education programme more relevant and developed in such a way as to enhance the individual interest, skills, attitude and needs of every member of the society either as a producer or as a consumer of goods and services. One way in which the society is already achieving this is through the services of Business Centres and Cyber Cafés where people are exposed to the use of the keyboard (Computer Keyboard). Most typists hired in these places update their knowledge and competencies through designed keyboard training programme on textbooks and/or computer. This is in line with Aliyu (2001) who asserted that “training is organizational effort aimed at

helping an employee to acquire basic skills required for efficient execution of the function for which he was hired”.

In addition to the above efforts, Shehu (2010) recommends that government bodies such as National Commission for Colleges of Education (NCCE), National Board for Technical Education (NBTE) and National Universities Commission (NUC) apart from the efforts of Colleges, Polytechnics and Universities should organize regular workshops and seminars for training in modern office technology. Standard in typewriting is measured through speed and accuracy. As to which method is more effective in speed and accuracy, Timothy (2008) opined that definite studies have not been made to prove, in a final sense, that the objective of typing a certain number of words per minute is the best measure of school learning. Nevertheless, the consensus of experienced and competent teachers of clerical skills seems to be that setting up a definite goal of words a minute in typing is the most effective means of motivating learning.

Nyam (2004) states that “the boss does not complain about the inability of stenographers to take down dictation/type at a given speed, but is very much concerned that the letters given to be signed, make sense and that there are no errors and that the letters are thoroughly presentable”. The teacher teaching keyboarding, therefore, should set up goals of achievement,

such as those that will master the keyboard skills. Nyam (2004) adds that “typing words are counted based on the number of typing strokes including typing spaces”. Five strokes therefore make one typing word. So, the total number of strokes in a passage divides by five (5) gives the total number of Words/Passage. The passage, when divided by the total time taken to type it, gives the number of words/minute. A passage of 1,250 strokes will thus be:

$$\frac{1250}{\frac{5}{\frac{10}{1}}} = \frac{1250}{5} \times \frac{1}{10} = 25 \text{ (25 wpm)}$$

## **2.9 Language Art in Keyboarding**

As business education students in Nigeria, English Language is one of the important tools needed on a daily basis. Ability to communicate well, convince and motivate customers and clients is based on a sound language skill. It is with English that correct grammar, spelling and vocabulary are formed. Akindele (1996) wrote that there is correlation between English and keyboarding. Commenting on same she stated that the link between English and Typewriting Keyboarding is the widest and the most natural. She submitted that typewriting is another form of writing and that the main areas of English knowledge which are directly relevant to the typist’s skill are



vocabulary extension. Akindele (1996) also submitted that success in shorthand and typewriting depends in no small measure on ability in English.

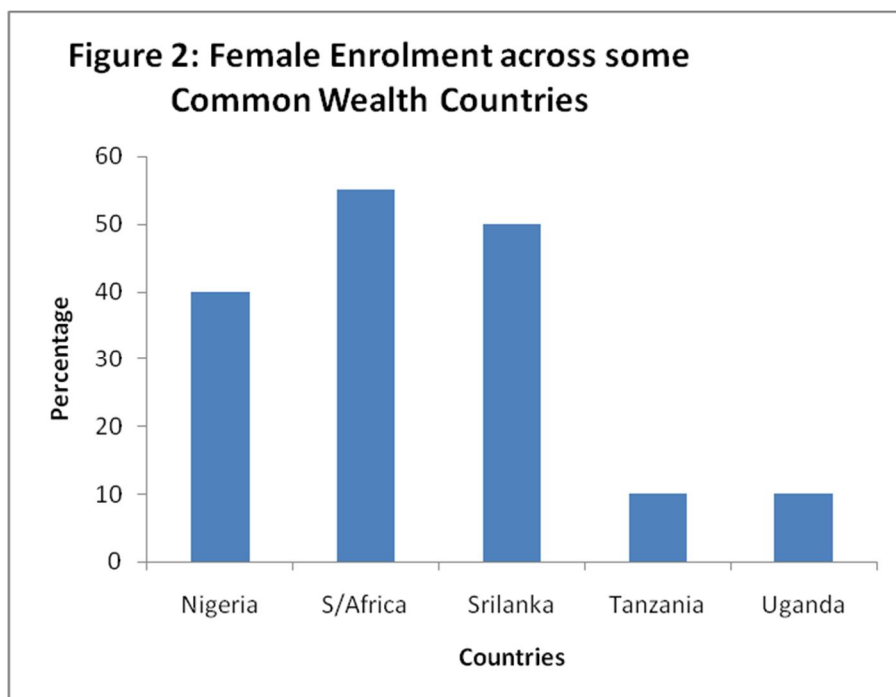
In recognition of the fact that success in typewriting depends on the language arts skill acquired by the secretary, Meggison (1983), remarked that supervisors and managers complain that employees lack skills in the language arts area namely punctuation, grammar and spelling. Meggison cited deficiencies in the language art area as the number one problem with typists. Okwuanaso (1992) in agreement, pointed out that employers have continued to demand for secretaries who are competent in the use of grammar, punctuation, spelling and who can express themselves both orally and in writing. Ugoji (1991), revealed that English language had been found to be a responsible factor for students' high failure rate in typewriting. Students' success or failure is highly dependent on the method of keyboarding (sight or touch) and the student's performance on that method.

## **2.10 Gender Role in Keyboarding**

Gender has a Short history on gender role play. In Nigeria the first commercial school by the missionaries admitted only female who they took for clerical and secretary/typist. The feminine gender hand flexibility and articulation were believed to be best for typewriting and other clerical work.

Keyboarding training, therefore, was meant for them. Now, this is an influence of the missionaries as at that time who determined the female academic and profession role play. Some determinants that influence gender roles include; parental influence; cultural and environmental influence; media influence and peer group influence (Ibrahim, 2007).

All the above assertions depending on how they are presented can negatively or positively affect both genders (M/F). The female student who should form the bulk of secretaries/typists work force in Kaduna State are under-represented. Writing on Colleges of Education and Women enrolment in Nigeria Tertiary Institution, Ibrahim (2007) found that there is a weak presence of women in vocational/technical education in northern Nigeria (Kaduna and Kano inclusive). Abubakar (2006) remarked that there are some remarkable differences in gender enrolment across some Common Wealth Countries. National Universities Commission (2002) gave a percentage female enrolment of some Common Wealth countries of which Nigeria is one and Kaduna and Kano states as sub-sets.



Source: Nigeria National Universities Annual Report 2002.

Figure 2 showed 40% enrolment of female in Nigeria with 60% on the presume African Feminine roles.

In a study conducted by Ibrahim (2007), it was found that most African cultures are known in their traditional separation of one set of task from another according to gender (male and female). Traditionally, males are assigned tasks with physical articulation like warfare, hunting, fishing, wrestling while females are known to be for light and smooth tasks like housekeeping taking care of children, cooking etc.

## 2.11 Empirical Studies

Keyboarding has of recent times generated a lot of interest by Business Educators. The work of Wolf, (2002); Achilike, (2002); Oyedele, (2007) and Amadi, (2009) who have made useful contributions in their studies are revealed in subsequent paragraphs.

Wolf (2002) wrote on “Evaluating Two Teaching Methods for Teaching Keyboarding Skills to Third Grade Students in secondary schools”. The objective of the study was to compare two approaches (touch and hunt and peck - Sight) to students in the third grade of secondary school.

One hundred (100) secondary school students were used as sample from two schools (Westocard 81 and Bellows 19) all in Iona Island of Scotland. Wolf used experimental design, experimental-control groups; pre/post-tests with three (3) research questions.

Results indicated that the most efficient method for -teaching keyboarding at the elementary school level was a combination of teacher intensive directed lessons and computer directed practice sessions. Wolf gave three major recommendations

The work is very much related because it has treated the two teaching methods for teaching keyboarding skills. The work compared two approaches for the teaching of keyboarding. Wolf recommended among

others that keyboarding should be introduced and offered in all institutions in Nigeria. Wolf recommended further research.

Achilike (2002) in his study titled “extensive Teaching Versus Extensive Supervisions in the Teaching of Keyboarding: The secretarial student choice of style”; the objective of the study was to look into the perception of Higher National Diploma (HND) students with regards to extensive teaching supervision/teaching techniques for keyboarding and typewriting. It was also to determine specifically, the activities of extensive teaching that are best suited for HND students in keyboarding/typewriting. Two research questions were used in this work.

A survey design was used with 58 HND students of Akanu Ibiaru Federal Polytechnic, Unwana. The same number of students were used as the sample size due to the relatively small nature of the population. Questionnaire with Likert 5 points scale in the collection of the data. Simple percentage was used in the analysis of data.

The study found an overwhelming agreement (100%) that there was need for teachers to supervise their typing/keyboarding course activities extensively. Secondly, there was an outright rejection of abuse (0%) as a way of getting students to acquire skills because of fear or anxiety. This is in

line with the researcher's work because the two project works are on Method of Teaching keyboarding.

The touch method of teaching keyboarding is a method that needs extensive supervision. This agreed with the first finding of this work. However, the study has taken HND students as its population and sample. This group is on its final stage of typewriting training that should be treating advanced typing work and not foundation keyboarding training. Their keyboard habits have been formed and will be difficult to change at this stage. Secondly, only three (3) research questions were used. Therefore, the questionnaire did not contain questions related to extensive keyboarding practice drills in the course of the supervision. There were also no suggestions made from the result of the work.

In another study by Oyedele (2007) on Comparative analysis of two methods of teaching keyboarding skills in secondary schools in Kwara state. The study had three specific objectives among which included; comparing the performance of the students in hunt and pick and teacher demonstration method of teaching keyboarding skills. The researcher raised four research questions formulated four null hypotheses in line with specific objectives. The researcher adopted quasi-experimental pre-test post test control group design. Keyboarding test was used to gather data from pre-test and post test.

The population comprised of eight hundred and twenty students (820) and a sample of sixty (60) students was purposively drawn. The data collected were analyzed using mean and standard deviation for the research question and t-test statistic was used to test the hypotheses at 0.05 level of significance. Based on the data analyzed the research found that students in hunt and pick group performed better than those in teacher demonstration method and that hunt and pick method is the most effective method of teaching keyboarding. The researcher recommended that typewriting teacher should give preference to the teaching method that gives better result.

The current research is related to the work of Oyedele (2007) because they both studied methods of teaching keyboarding skills. The previous research explained hunts and pick method extensively which assisted the current research. However, the previous research did not use random technique in selecting the sample.

In a related research conducted by Amadi (2009) on the strategies for effective teaching of typewriting in Colleges of Education in Enugu state. The researcher raised four specific objectives among which included determining the strategies for teaching typewriting in Colleges of Education and finding the effect of the strategies on students' performance in typewriting. Research questions and null hypotheses were formulated in line

with the objectives. Descriptive survey design was used for the study. The study involved a population of two thousand four hundred and thirty two students (2,432) and twelve (12) typewriting teachers. A sample of one hundred and thirty two (132) students and all the teachers were used for the study. Questionnaire was the instrument used to gather data from the respondents. The data collected from the respondents were analyzed using mean and percentages for the research questions and the null hypotheses were tested using chi-square. The null hypotheses were tested at 0.05 level of significance. Based on the data analyzed, the following findings were made that; demonstration method, hunt and pick method, touch method, self directed method are the major strategies for teaching typewriting. It was also found that sight and touch methods are the effective methods in teaching typewriting. The researcher recommended, among others, that teachers should use the two most effective methods (sight and touch) in teaching typewriting. Among these two most effective methods, this research is comparing them to find out which is the better method.

The current research work is related to the study by Amadi (2009) because they both studied the method of teaching typewriting. It is useful to the current research because it explained the methods of teaching typewriting which the current research used some of them. However, the



sample population was too large, if not a more effective findings would have resulted.

## **2.12 Summary of Reviewed Literature**

The chapter reviewed the literature on keyboarding teaching learning and the touch and sight methods used in teaching keyboarding among Business Education students. What is learning in view of some learning theorists, measurement of teaching effectiveness among others are factors discussed. Also considered in the chapter, are use of touch and sight keyboarding, the general teaching approaches in Business Education, models of Business education teaching and the concept of teaching these approaches. The Touch and Sight method viewed the teacher as the initiator of teaching process with the student as the target, who is also a distinct personality with inherent disposition that can enhance or limit his ability to benefit from the process.

In order to have a better idea of the keyboard, the development of the QWERTY keyboard, which has run through the manual, electric, electronic and the computer keyboards have been discussed. These are the keyboard skills that have been transferred to other disciplines like word processor and computer applications. What language art in keyboarding has with its attending finger manipulations was discussed. The old idea that the gender

of student influences their performance was also reviewed. Finally, the review showed who should teach what and when and how in keyboarding training. This study will suggest appropriate method of teaching keyboarding skills to the beginners which was one of the major gaps identified in the review so far conducted by other authors.

## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the area of the study and procedures employed in carrying out the study. Therefore, the chapter focuses on the following sub – headings:

3.2. Research Design

3.3. Population for the Study

3.4. Sample Size and Sampling Procedure

3.5. Instrument for Data Collection

3.5.1. Validity of the Instrument

3.5.2 Pilot Study

3.5.3 Reliability of the Instrument

3.6. Procedure for Data Collection

3.7. Procedure for Data Analysis

#### **3.2 Research Design**

The research design for this study was equating experimental design using touch and sight groups. The two groups are equivalent or comparable in all the characteristics of interest before the treatment or the manipulation of the independent variable. This design, according to Olayiwola (2007),

allows randomization of treatments and also provides some degree of control for possible extraneous or confounding variables that might pose threat to the internal or external validity or both.

### 3.3 Population of the Study

The population for the study comprised of NCE I students from four (4) Colleges of Education who were admitted in 2010/2011 academic session in Federal College of Education, Zaria, College of Education, Gidan Waya in Kaduna State, Federal College of Education, Kano and College of Education, Kumboso in Kano State. This is because they were at their initial stage and have not developed a keyboarding skill. There are a total number of seven hundred and thirty nine (739) NCE I Business Education students in FCE Zaria (159), and College of Education Gidan Waya (147) in Kaduna State, FCE, Kano (251) and College of Education Kumboso (182) in Kano State. The breakdown of the population for the study is given in Table 3.1

**Table 3.1: Population for the Study**

S/N	State	Institutions	Male	Female	Total
1.	Kaduna	F.C.E. Zaria	94	65	159
		C.O.E, Gidan Waya	76	71	147
2	Kano	F.C.E, Kano	159	92	251
		C.O.E Kumboso	108	74	182
<b>Total</b>			<b>437</b>	<b>302</b>	<b>739</b>

Source: Departmental Record Offices of the Institutions (2011)

### **3.4 Sample Size and Sampling Procedure**

Purposive sampling technique was used to select Nigeria Certificate of Education students from FCE Kano and COE Gidan Waya as the sight group, while NCE I students from F.C.E Zaria and C.O.E. Kumboso as the touch group. This selection purposively picked a Federal College and a State College of Education from each state. From the four Colleges, a total number of one hundred and twenty (120) students were selected. This comprised of sixty (60) males and sixty (60) females randomly selected and randomly assigned to both sight and touch groups; that is thirty (30) students from each college. This was done according to the serviceable machines in the colleges to make the classes manageable for the experiment, in line with Gay and Dielhi (1992) who suggested a sample size of thirty (30) subjects out of a population for the groups in an experimental study. Roscoe (1975) also stated that a small sample size from the parent population in an experimental design is convenient.

The procedure for selecting the thirty students as sample from the population of 251 in F.C.E Kano was simple random sampling using hat drawn technique. The researcher wrote fifteen (15) 'Yes' and one hundred and forty four (144) 'No' on pieces of papers. These papers were folded in scramble form and put in a container, shaken very well before the 159 male

students were asked to pick one each. The same procedure was done to select fifteen female students. Fifteen (15) ‘Yes’ and seventy seven (77) ‘No’ were written on pieces of papers; the papers were folded in scramble form and put in a container, it was shaken very well before 92 female students were asked to pick one each from F.C.E, Kano. Those who picked ‘Yes’ were used for the study. The same procedure was used to select fifteen male students and fifteen female students making thirty students each from F.C.E Zaria, C.O.E. Kumboso and F.C.E and C.O.E. Gidan Waya. The breakdown of the sample size is given in Table 3.2.

**Table 3.2: Sample Size for the Study**

<b>S/No</b>	<b>State</b>	<b>Institutions</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
1.	Kaduna	F.C.E. Zaria	15	15	30
		C.O.E. Gidan Waya	15	15	30
2	Kano	F.C.E. Kano	15	15	30
		C.O.E. Kumboso	15	15	30
<b>Total</b>			<b>60</b>	<b>60</b>	<b>120</b>

Source: Field Survey, 2011

### **3.5 Instrument for Data Collection**

Based on the fact that the design is an equating experimental design, Keyboarding Skills Test (KST) was administered to the sight and touch groups as pre-test and post-test. This was administered to NCE1 students of the four Colleges of Education that were used for the study. The instrument

was scored based on the speed, accuracy and display of the work. A total score of 100% divided into 75% for speed and accuracy and 25% for display of the work were for the instrument. The instrument consisted of 26 words which the students were required to type per minute, that is, 26 wpm for 5 minutes. (see Appendices A & B).

### **3.5.1 Validity of the Instrument**

In order to be sure that the instrument measures what it is supposed to, it was given to Business Educators in Federal College of Education (Technical) Gusau and the researcher's supervisors. They critically examined the items of the instruments with respect to their fitness for the purpose of this study and accepted its use for the study.

### **3.5.2 Pilot Study**

A pilot study of the instrument was conducted in Federal College of Education (Technical) Gusau. A microteaching was organized using 20 students divided into two groups ( $G^A$  and  $G^B$ ) of ten students each. The researcher used the five working days of the week to teach the two groups using the two methods - Sight and Touch. Federal College of Education (Technical) Gusau was chosen for the pilot study because it is an NCE

training institution offering NCE Business Education which is related to the area of study.

The result showed a mean score of 31.3 with 57% as the highest score and 15% as the lowest for G<sup>A</sup>, while G<sup>B</sup> had a mean score of 29.1, 50% highest and 13% lowest scores (see Appendix D).

### **3.5.3 Reliability of the Instrument**

The reliability of the instruments was determined by the statistical analysis of the data collected from the pilot study. The split-half method was used where the instrument was divided into two halves of odd and even numbers. The reliability of one half (odd) was determined using Spearman Rank Correlation Coefficient. The reliability of the whole instrument was determined using Spearman Brown Prophecy formula. The reliability coefficient calculated was 0.84. This reliability coefficient is high and, therefore the instrument was adjudged stable and reliable according to Olayiwola, (2007) who stated that a reliability estimate of 0.65 and above is high and the instrument for it is calculated is stable and reliable.

### **3.6 Procedure for Data Collection**

The Pre-test on Keyboarding Skill Test was administered to the two groups in Kaduna and Kano States during their first lesson which lasted for 2



minutes each. The researcher administered the pre-test to both the touch and sight groups in Kaduna and Kano States personally and with the help of research assistants so as to ensure objectivity in the supervision/ invigilation. The researcher and the research assistants used 4 weeks for teaching NCE I students in all the Colleges that were used for the study after which the post-test was administered to the groups.

### **3.7 Techniques of Data Analysis**

The independent sample t-test statistics was used in both the pre/post-tests. The pre-test and post-test were scored and recorded for analysis to find and compare the mean performance of NCE I Business Education students in the two groups – NCE I FCE Kano and COE Gidan Waya for touch group and NCE I students FCE Zaria and COE Kumboso for the sight groups. The t-test has proved to be one of the most effective methods of comparing two group means (Nworgu, 1991). The t-test variation is required for comparison of two means of same group in a pre-test – post-test situation (Wimmer and Dominick 1987). Mean scores, standard deviation and standard error were used to answer the research questions and percentages were used to analyze the bio-data of respondents.

All the null hypotheses were tested using the t-test at 0.05 level of significance ( $P = 0.05$ ). If the calculated value of t-test is greater than the

critical value of t-test the null hypothesis is rejected if otherwise it is retained.

## **CHAPTER FOUR**

### **PRESENTATION AND ANALYSIS OF DATA**

#### **4.1 Introduction**

The research study was on comparative study of touch and sight methods among many other methods of teaching keyboarding skills to Business Education students in four Colleges of Education in Kaduna and Kano states. This chapter presents the research findings based on the scores from students' performances. The scores of one hundred and twenty students from four Colleges of Education were analyzed based on the two methods of teaching; touch and sight methods of teaching keyboarding. In each method the students were pre-tested and post-tested using Keyboarding Skills Test. The scores of Pre-test and post-test were analyzed in this chapter and used to compare the two methods of teaching. The first part of this chapter is made up of the analysis of the demographic variables of the students which were presented in tables of frequencies and percentages. The second part is made up of the analysis of the performance of the students in keyboarding skills. This section was analyzed in line with the objectives and research questions of the study. The last part of the chapter presents test of null hypotheses and discussion of findings from the data analyzed.

#### **4.2 Analysis of Demographic Variables of the Students**

The demographic variables of the students considered in the study were gender of the students and their ages. The gender considered was 50%

for both the male and female students respectively. Table 4.1.1. presents only the ages of the respondents.

**Table 4.1.1: Distribution of Students by Age**

<b>Age (in Years)</b>	<b>Frequency</b>	<b>Percentage</b>
15-20	42	35
21-25	67	55.8
26-30	6	5.0
31-35	4	3.3
36 and above	1	0.9
<b>Total</b>	<b>120</b>	<b>100</b>

Source: Field Survey, March 2011.

The age range in years showed in Table 4.1.1 revealed that 67(55.8%) of the students were between 21-25 years of age, 42(35.0%) were between 15-20 years old. The students in the age range of 26-30 years were 6 representing 5.0%, 4(3.3%) were between 31-35 years while only one student representing 0.9% was between 36 years and above. This indicates that majority (58.8%) of the students involved in the study were between the age range of 21-25 years.

### **4.3 Analysis of Data to Research Questions**

Analysis of students' performance in keyboarding achievement tests for post tests were used in answering the three research questions. The analysis is presented in Tables 4.2.1 to 4.2.3.

**Research Question One:** To what extent do the speed of students taught using sight method differs from those taught using touch method of teaching keyboarding skills?

The data to answer research question one are analyzed in Table 4.2.1

**Table 4.2.1 Mean Difference of Speed of Students taught using Sight and Touch Methods**

Methods	N	Mean	S.D	S.E
Sight	60	60.00	13.05	1.68
Touch	60	68.03	11.83	1.53

Source: Field Survey, March 2011

Based on the data presented in Table 4.2.1, there were sixty students each in sight and touch groups. The students taught using sight method of teaching keyboarding had a mean of 60.00, Standard Deviation (S.D) of 13.05 and Standard Error of mean (S.E) of 1.68 in speed. On the other hand, students taught using the touch method had a mean of 68.03, Standard Deviation (S.D) of 11.83 and Standard Error (S.E) of 1.53 in speed. Comparing the mean of speed of students in the two methods, it could be seen that the students taught using sight method had mean performance of 60.00 which was less than the mean of 68.03 of students taught using touch method. The students taught using the touch method performed better in terms of speed than those taught using the sight method. The mean

difference showed that the touch group was better than the sight group by 8.03 mean difference.

**Research Question Two:** To what extent do the mean of accuracy of students taught keyboarding skills using sight method differ from students taught using touch method?

The data to answer research question two are analyzed in Table 4.2.2

**Table 4.2.2: Mean Difference of Accuracy of Students Taught using Sight and Touch Methods**

<b>Methods</b>	<b>N</b>	<b>Mean</b>	<b>S.D</b>	<b>S.E</b>
Sight	60	60.83	13.06	1.69
Touch	60	71.75	11.80	1.52

Source: Field Survey, March 2011

The data in Table 4.2.2 revealed that there were sixty students each taught using sight method and touch method. The students taught using sight method had accuracy mean score of 60.83, Standard Deviation of 13.06 and Standard Error of 1.69 in accuracy of the work. On the other hand, the students taught using touch method had accuracy mean score of 71.75, Standard Deviation of 11.80 and Standard Error of 1.52 in accuracy. Thus with a mean score of 71.75 for touch method as against 60.83 for sight, it clearly showed that students taught using touch method had higher performance in terms of accuracy than students taught using sight method. It

was clearly revealed that touch group performed better than the sight group with a mean difference of 10.92.

**Research Question Three:** What is the mean difference in speed between males and female students taught using sight method and those taught using the touch method?

The data to answer research question three are analyzed in Table 4.2.3

**Table 4.2.3: Mean Difference of Speed between Male and Female Students Taught Using Sight and Touch Methods**

Methods	Male Students				Female Students		
	N	Mean	S.D	S.E	Mean	S.D	S.E
Sight	30	57.33	13.52	2.47	62.67	12.20	2.23
Touch	30	67.03	11.10	2.03	69.03	12.03	2.11

Source: Field Survey, March 2011

The outcome of Table 4.2.3 revealed that there were thirty male students each in sight and touch groups and also thirty female students each in the two groups. The Table revealed that male students taught using sight method had mean score of 57.33, Standard Deviation of 13.52 and Standard Error of 2.47 as against female students mean score of 62.67, Standard Deviation of 12.20 and Standard Error of 2.23. This showed that female students performed better than their male counterparts under the sight method. The table also showed that male students taught using touch method had a mean score of 67.03, Standard Deviation of 11.10 and Standard Error

of 2.03 as against their female counterpart under this method who had a mean score of 69.03, standard deviation of 12.03 and Standard Error of 2.11. This also indicates that female students performed better than their male counterparts under the touch method with a mean difference of 2.00. this better performance by female students could be seen in the SD and SE, because the female students have lower SD and SE (12.03 and 2.11) as compared to their male counterparts (12.20 and 2.23).

On the overall, Table 4.2.3 showed that there was difference in speed between male and female students taught using sight and touch method. It was clearly shown in the Table that female students performed better in speed under the two methods than their male counterpart.

**Research Question Four:** What is the mean difference of accuracy between males and female students taught using sight method and those taught using the touch method?

The data to answer research question four are analyzed in Table 4.2.4

**Table 4.2.4: Mean Difference in Keyboarding Skills between Male and Female Students Taught Using Sight and Touch Methods**

Methods	Male Students				Female Students		
	N	Mean	S.D	S.E	Mean	S.D	S.E
Sight	30	52.09	13.03	2.31	53.04	12.04	1.98
Touch	30	50.06	10.04	1.82	55.02	9.08	1.04

Source: Field Survey, March 2011



The outcome of Table 4.2.4 revealed that there were thirty male students each in sight and touch groups and also thirty female students each in the two groups. The Table revealed that male students taught using sight method had mean score of 52.09, Standard Deviation of 13.03 and Standard Error of 2.31 as against female students mean score of 53.04, Standard Deviation of 12.04 and Standard Error of 1.98. This showed that female students performed better than their male counterparts under the sight method. The table also showed that male students taught using touch method had a mean score of 50.06, Standard Deviation of 10.04 and Standard Error of 1.82 as against their female counterpart under this method who had a mean score of 55.02, standard deviation of 9.08 and Standard Error of 1.04. This also indicated that female students performed better in accuracy than their male counterpart under the touch method with a mean difference of 1.96.

On the overall, Table 4.2.4 showed that there was difference in the accuracy between male and female students taught using sight and touch method. It was clearly shown in the Table that female students performed better under the two methods than their male counterparts.

#### **4.4 Testing of Null Hypotheses**

Four null hypotheses were postulated for the study to further probe into the research questions. Therefore, the post-test scores of the keyboarding skills were tested at 0.05 level of significance and the result

interpreted. The null hypotheses were tested using independent sample t-test statistics. The test of the hypotheses were presented in Tables 4.3.1 to 4.3.3

**Null Hypothesis One:** There is no significant difference between the mean score in speed of students taught using sight method and those taught using touch method of teaching keyboarding skills.

In order to further investigate into research question one, null hypothesis one was analyzed and presented in Table 4.3.1

**Table 4.3.1: Independent t-test Result for Difference between the Mean Score in Speed and Accuracy of Students Taught using Sight and Touch Methods**

Group	N	Mean	S.D	S.E	t-cal	t-crit	Df	Sig. 2 tail	Decision
Sight	60	60.00	13.05	1.68	3.53	1.98	118	0.001	S
Touch	60	68.03	11.83	1.53					

Source: Field Survey, March 2011

Table 4.3.1 showed the result of independent t-test used for testing the significant difference between the speed and accuracy of students taught using sight method, and those taught using touch method of teaching keyboarding skills. The data from the Table revealed that the group taught using sight had mean score of 60.00, Standard Deviation of 13.05 and Standard Error of 1.68, while those taught using touch method had a mean score of 68.03 and Standard Deviation of 11.83 and Standard Error of 1.53. The t-calculated was 3.53 while t-critical was 1.98. Since the t-calculated

3.53 was greater than the t-critical, it implied that there was significant difference between the speed and accuracy mean of students taught using sight method and those taught using touch method. Therefore, the null hypothesis one that there is no significant difference between the mean score in speed and accuracy of students taught using sight method and those taught using touch method was rejected.

**Null Hypothesis Two:** There is no significant difference between the mean accuracy of students taught using sight method and those taught using touch method of teaching keyboarding skills.

In order to further probe into research question two, hypothesis two was analyzed in Table 4.3.2

**Table 4.3.2: Independent t-test Result for Difference between the Mean Performance of Students Taught using Sight and Touch Methods**

Group	N	Mean	S.D	S.E	T-cal	t-crit	Df	Sig. 2 tail	Decision
Sight	60	60.83	13.06	1.69					
					4.81	1.98	118	0.000	S
Touch	60	71.75	11.80	1.52					

Source: Field Survey, March 2011

The data shown in Table 4.3.2 revealed that the group taught using sight method had a mean score of 60.83, Standard Deviation of 13.06 and Standard Error off 1.69 while those taught using touch method had a mean of 71.75, Standard Deviation of 11.80 and Standard Error of 1.52. The t-

calculated was 4.81, while the t-critical was 1.98. The t-calculated 4.81 was greater than the t-critical 1.98, this revealed that there was a significant difference between the mean performance of students taught using sight method and those taught using touch method. Therefore, the null hypothesis that there is no significant difference between the mean performance of students taught using sight method and those taught using touch method was rejected.

**Null Hypothesis Three:** There is no significant difference between the mean score of speed of male and female students taught using sight method and those taught using touch method.

In order to further probe into research question three, hypothesis three was analyzed in Table 4.3.3

**Table 4.3.3: Independent t-test Result for Difference between the Mean Score of Speed of Male and Female Students taught using Sight and Touch Methods**

Group	N	Mean	S.D	S.E	T-cal	t-crit	Df	Sig. 2 tail	Decision
Male	60	62.18	12.31	2.25					
					1.13	1.98	118	0.259	NS
Female	60	65.85	12.22	2.17					

Source: Field Survey, March 2011

The data in Table 4.3.3 revealed that male students had mean score of 62.18, standard deviation of 12.31 and standard error of 2.25 for the average of the two methods while female students had mean score of 65.85, standard

deviation of 12.22 and standard error of 2.17. The Table showed that the calculated t-test was 1.13 and the critical value of t-test was 1.98 at 0.05 level of significance. The calculated t-test 1.13 was less than the critical value 1.98. Therefore, the null hypothesis that there is no significant difference between the mean score of male and female students taught using sight method and those taught using touch method was accepted.

**Null Hypothesis Four:** There is no significant difference between the mean score of accuracy of male and female students taught using sight method and those taught using touch method.

In order to further probe into research question four, hypothesis four was analyzed in Table 4.3.4

**Table 4.3.4: Independent t-test Result for Difference between the Mean Score of Accuracy of Male and Female Students taught using Sight and Touch Methods**

Group	N	Mean	S.D	S.E	t-cal	t-crit	Df	Sig. 2 tail	Decision
Male	60	52.54	11.03	2.07					
					0.97	1.98	118	0.231	NS
Female	60	52.57	10.11	1.19					

Source: Field Survey, March 2011

The data in Table 4.3.3 revealed that female students had mean score of 52.57, standard deviation of 10.11 and standard error of 1.19 for the average of the two methods while male students had mean score of 52.54, standard deviation of 11.03 and standard error of 2.07. The Table showed

that the calculated t-test was 0.97 and the critical value of t-test was 1.98 at 0.05 level of significance. The calculated t-test 0.97 was less than the critical value 1.98. Therefore, the null hypothesis that there is no significant difference between the mean score of male and female students taught using sight method and those taught using touch method was retained.

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

The study found that there was significant difference between the speed and accuracy of students taught using sight method and those taught using touch method. The mean score of sight and touch methods were 60.00 and 68.03 which indicated that touch group performed better than the sight group. This implied that touch method is the more effective in teaching speed and accuracy skill in keyboarding. This finding agreed with Achilike (2002) who stated that touch method of teaching keyboarding skills if extensively supervised by the teacher led to greater acquisition of speed and accuracy in keyboarding. Speed and accuracy skill can be acquired when students learn keyboarding without looking at the keys. This is also in line with Oyeyiola (2006) who found 58.6% failure in control groups post-test where the touch method of teaching keyboarding skills was not used. That is why Oliver (1994) pointed out that touch method of keyboarding promotes faster speed, acquisition of proper skills and accuracy of the work. This finding contradicted the views of Paulson (2008) who reported that accuracy

in keyboarding was achieved when students ‘hunt and peck’ the keys they wish to strike. It is clear therefore that proper keyboarding skill is acquired through the touch method with teachers’ supervision.

The study also found out from the research question two that there was significant difference between the mean performance of students taught using sight method and those taught using touch method. The mean performance for sight method was 60.83 while the mean performance of 71.75 was obtained for the touch group. The mean difference between the two groups was 10.92 which were statistically significant. This also indicated that all the keyboarding skills are better taught using the touch method. This agreed with the findings of Mbaeze (1998) who found that keyboarding skills in general were properly acquired through learning and practicing without looking at the keys.

Keyboarding skills acquired using sight method do not compare in any way with the skills acquired through the touch method. This was in line with Sholes (2008) who opined that a good typewriting teacher is that teacher that teaches keyboarding skills using proper keyboarding teaching techniques. Sholes (2008) also stated further that improper techniques are those keyboarding habits that are likely to result in a low typing speed. Touch method of keyboarding leads to less fatigue since the students do not have to be turning their head. That is why Dervey (1983) reported that method of keyboarding which minimizes the risk of physical fatigue to the

person keyboarding and open path to lifelong improvement in keying speed and accuracy through practice is the proper keyboarding teaching method.

The study also found that female students performed slightly better than their male counterpart in both sight and touch method of teaching keyboarding skills. It was also found that this difference in the performance of male and female was not statistically significant. The performance of female students was a little bit better than the performance of male students in both sight and touch methods of keyboarding skills. This finding agreed with Ibrahim (2007) who found that female students prefer secretary/typist work, that is why they always perform better in it and that may also account for the reason why they formed the bulk of secretaries/typists.

#### **4.6 Summary of Major Findings**

The following are the major findings of the study;

1. There was significant difference between the speed of students taught using sight method and those taught using touch method. The touch group performed better in speed with a difference of 8.03 above the sight group.
2. There was significant difference between the mean accuracy of students taught using sight method and those taught using touch method. The touch group also performed better than the sight group with a mean difference of 10.92.



3. Female students performed slightly better in speed than male students under both sight and touch methods of teaching keyboarding skills with a mean difference of 5.34 for sight and 2.00 for touch.
4. Female students also performed slightly better in accuracy than male students under both sight and touch methods of teaching keyboarding skills with a mean difference of 0.95 for sight and 4.96 for touch

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Summary

The study was on comparative study of touch and sight methods of teaching keyboarding skills among Business Education students in Colleges of Education in Kaduna and Kano States. The major objective of the study was to compare the keyboarding skills of students taught using touch and sight methods in Colleges of Education in Kaduna and Kano states. The study stated four specific objectives among which included; to compare the speed and accuracy in keyboarding skills of students taught using sight and touch methods in Colleges of Education in Kaduna and Kano States. In line with these specific objectives, four research questions were raised which included; to what extent do speed and accuracy of students taught using sight method differ from those taught using touch method of teaching keyboarding skills?

Based on the four research questions, four null hypotheses were formulated which included; there is no significant difference between the mean score in speed and accuracy of students taught using sight and those taught using touch method of teaching keyboarding skills. Review of related literature was presented under relevant sub-headings. Equating experimental design was adopted for the study. 739 NCE I students formed the population for the study from which a sample of one hundred and twenty students (120) was selected for the study through random sampling. The

technique used in the selection of sample for the study was simple random sampling, even though four Colleges of Education used for the study were purposively selected from five Colleges of Education in Kaduna and Kano states. The instrument used for data collection was Keyboarding Skills Test (KST). The data collected from the students were statistically analyzed using mean, standard deviation and standard error. The null hypotheses were tested using independent t-test at 0.05 level of significance.

The major findings of the study included that;

- i. the touch group were better in keyboarding speed than the sight group because of the significant difference found between the speed and accuracy of students taught using sight and those using touch methods.
- ii. there was significant difference between the mean score performance of students taught using sight method and those taught using touch methods, in favour of the touch method.
- iii. female students performed slightly better than male students in both sight and touch methods of teaching keyboarding skills.
- iv. there was no significant difference between the performance of male and female students taught using sight method and those taught using touch method.

## **5.2 Conclusion**

Based on the findings of the study, it was concluded that since students performed better under the touch method than in the sight method, it means that the touch method of teaching keyboarding skills was the more effective method of teaching keyboarding skills in order for students to develop proper keyboarding skills. Since this is the case, it means that the students who were taught using sight method will not be able to develop appropriate keyboarding skills which will affect them in their further studies (those who may wish to further their education in office option) and the careers as secretaries. It also concluded that there was no significant difference between the performance of male and female students in both sight and touch method of teaching keyboarding skills even though the mean performance of female students taught using touch method was relatively higher but was not significant at 0.05 level of significance. This implies that both male and females students will perform better in keyboarding skills, if taught using sight method as was seen in the result of the comparism of touch and sight keyboarding.

## **5.3 Recommendations**

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

- i. Those typewriting teachers in Colleges of Education in Nigeria not teaching by use of touch method should use touch method in teaching speed and accuracy skills in keyboarding.
- ii. There is the need for Colleges of Education in Kano and Kaduna States and other institutions of learning to employ competent typewriting teachers who can teach keyboarding, using the touch method.
- iii. There is the need for the state and Federal Governments to encourage typewriting teacher to go for in-service training to acquire additional qualifications in keyboarding skills (M.Ed and Ph.D Office Education) so as to enable them teach keyboarding using the proper method (touch).

#### **5.4 Limitations of the Study**

During the course of this work, a number of limitations were experienced by the researcher, among which were;

- i. Difficulty in teaching the keyboarding using the sight and touch method in the four Colleges of Education used for the study as well as administering the pre-test and post-test in the four Colleges of Education because of the distance between the two states. This difficulty was minimized by the help of research assistants employed in the two states and the use of the internet services for sending and receiving data.

- ii. The work involved printing of questions for pre-test and post-test of which some of the question papers were destroyed or rejected by the students and these were replaced. These took the researcher longer time in collecting the relevant data.

### **1.5 Suggestions for Further Studies**

- i. The researcher suggests that further studies can be carried out on similar topic in other states of the federation for the purpose of implication and generalization.
- ii. Effect of sight and touch methods of teaching keyboarding skills on male and female students in Colleges of Education in Nigeria should be tested further.

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**APPENDIX A**

**PRE-TEST QUESTION**

**Serial N:**.....

**Gender:**.....

**Age:** .....

**Date:** .....

**Instruction**

Type the following passage twice only

**Time Allowed:** 5 minutes

a s d F ; l k j a S d f ; l K j a s d f ; l k j  
j h j ; f g f a j H J ; f g F a j h j ; f g f a  
a s d F ; l k j a S d f ; l K j a s d f ; l k j  
j h j ; f g f a j H J ; f g F a j h j ; f g f a  
a d a K l a d a d A d a a l F a g a h a h a g ;



## APPENDIX B

### POST-TEST QUESTION

**Serial N:**.....

**Gender:**.....

**Age:** .....

**Date:** .....

#### Instruction

Type the following passage five times only

**Time Allowed:** 5 minutes

a s d f ; l k j a S d f ; l K j a s d f ; l k j  
j h j ; f g f a j H J ; f g F a J h j ; f g f a  
a s d f ; l k j a S d f ; l K j a s d f ; l k j  
j h j ; f g f a j H J ; f g F a J h j ; f g f a  
a d a k l a d a d A d a a l F a g a h a h a g ;

## APPENDIX C

### PILOT TEST MARKING SCHEME

Speed and Accuracy	75%
Display of work	25%
<b>Major Errors</b>	<b>Penalties</b>
Instruction not followed	1 mark
Typographical Error	½ mark
Wrong line spacing	½ mark, 1 max. per exercise
<b>Minor Errors</b>	<b>Penalties</b>
Jammed keys/letters	½ mark, 1 max. per exercise
Poor ruling	½ mark, 1 max.

**APPENDIX D**

**FCE (T) Gusau**

**Pilot Test Result (17/9/10)**

<b>Group A</b>	<b>Score</b>	<b>Group B</b>	<b>Score</b>
1A	37	1B	18
2A	25	2B	25
3A	20	3B	24
4A	45	4B	44
5A	15	5B	47
6A	57	6B	30
7A	40	7B	13
8A	16	8B	50
9A	24	9B	21
10A	36	10B	19
<b>Average</b>	<b>31.3</b>	<b>Average</b>	<b>29.1</b>

## APPENDIX E

### STUDENTS' PRE-TEST POST-TEST SCORES

S/No	Sight Group				Touch Group			
	FCE Kano		COE Gidan Waya		FCE Zaria		FCE Kumboso	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
1	38	54	15	63	30	61	24	75
2	21	50	24	54	21	82	31	71
3	34	70	13	51	34	64	50	81
4	48	67	28	51	62	88	41	67
5	42	71	38	64	27	54	31	68
6	28	60	42	65	11	61	46	75
7	38	57	45	70	13	58	48	75
8	50	83	46	69	42	66	31	58
9	21	64	37	60	16	61	34	57
10	48	70	16	46	61	89	29	56
11	58	84	38	36	44	59	28	56
12	60	88	29	56	52	77	27	50
13	38	74	42	66	46	61	34	48
14	32	56	50	84	37	64	48	79
15	48	79	50	79	58	68	49	82
16	42	73	38	60	62	91	51	88
17	16	50	32	63	16	48	50	87
18	18	41	14	56	19	51	40	78
19	21	30	38	50	24	58	44	79
20	25	44	27	54	29	49	30	61
21	38	53	29	35	33	63	30	58
22	41	64	34	48	36	68	32	78
23	38	63	28	44	43	70	15	64
24	51	76	42	60	46	67	31	64
25	52	74	52	65	73	92	16	68
26	49	56	61	70	58	73	32	69
27	21	53	38	73	61	79	38	72
28	21	45	31	56	11	54	36	74
29	28	48	28	55	16	48	42	81
30	16	36	36	64	20	61	41	78

## APPENDIX F

### MALE/FEMALE POST-TEST SCORES

	<b>Sight Group</b>				<b>Touch Group</b>			
	<b>FCE Kano</b>		<b>COE Gidan</b>		<b>FCE Zaria</b>		<b>FCE Kumboso</b>	
<b>S/No</b>	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>
1	73	54	63	60	61	91	75	88
2	50	50	54	63	82	48	71	87
3	41	70	51	56	64	51	81	78
4	30	67	51	50	88	58	67	79
5	44	71	64	54	54	49	68	61
6	53	60	65	35	61	63	75	58
7	64	57	70	48	58	68	75	78
8	63	83	69	44	66	70	58	64
9	76	64	60	60	61	67	57	64
10	74	70	46	65	89	92	56	68
11	56	84	36	70	59	73	56	69
12	53	88	56	73	77	79	50	72
13	45	74	66	56	61	54	48	74
14	48	56	84	55	64	48	79	81
15	36	79	79	64	68	61	82	78